DRAFT

SPRING TRAILS ENVIRONMENTAL IMPACT REPORT (SCH # 2009111086)

VOLUME I

prepared for:

CITY OF SAN BERNARDINO

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THE PLANNING CENTER

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Director, Environmental Services

JULY 2011

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Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	assembly bill
ADT	average daily traffic
afy	acre-feet per year
amsl	above mean sea level
AQMP	air quality management plan
BAU	business as usual
bgs	below ground surface
BHG	Bunker Hill Groundwater Basin
BMP	best management practices
BRMA	biological resource management area
CAFE	corporate average fuel economy standard
CAGN	coastal California gnatcatcher
CalARP	California Accidental Release Prevention Program
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CC	chamise chaparral
CC&R	covenants, codes, & restrictions
CCAA	California Clean Air Act
CCC	Ceonothus crassifolius chaparral
CDFG	California Department of Fish and Game
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game Code
CFR	Code of Federal Regulations
CGV	Compass Growth Vision (SCAG)
CIWMB	California Integrated Waste Management Board
CLOW	canyon live oak woodland
CMP	congestion management plan
CNDDB	California Natural Diversity Database

CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
Corps	US Army Corps of Engineers
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSUSB	California State University at San Bernardino
CUPA	certified unified program agency
CWA	Clean Water Act
CWW	California walnut woodland
cy	cubic yards
D	Disturbed
dB	decibel
dBA	A-weighted decibel
DOF	Department of Finance
EIA	Energy Information Administration (US)
EIR	environmental impact report
EPA	Environmental Protection Agency (US)
EPCRA	Emergency Planning and Community Right-to-Know Act
EUC	eucalyptus
EUC/RSS	eucalyptus/Riversidean sage scrub
EVTM	East Valley Traffic Model
FCAA	Federal Clean Air Act
FDPA	Flood Disaster Protection Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FF District	Foothill Fire Zones Overlay District
FIRM	flood insurance rate map
FIS	flood insurance study
FRAP	Fire and Resource Assessment Program
FS	fire safety area
GCM	global climate model
GHG	greenhouse gases
gpm	gallons per minute

GWP	global warming potential
HCM	Highway Capacity Manual
HMOD	hillside management overlay district
HOA	homeowners association
IPCC	Intergovernmental Panel on Climate Change
IRWMP	integrated regional water management plan
kV	kilovolts
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LAFCO	local agency formation commission
LBV	least Bell's vireo
LMD	landscape maintenance district
LMP	land management plan
LOS	level of service
LST	localized significance thresholds
MBTA	Migratory Bird Treaty Act
mG	milliGauss
mg/l	milligrams per liter
mgd	million gallons per day
MIS	management indicator species
MMI	modified Mercalli intensity
MMTons	million metric tons
MPO	metropolitan planning organization
MRMHMP	Mineral Resources and Mineral Hazards Mapping Program
MTBE	methyl tert-butyl ether
MTons	metric tons
MWD	Metropolitan Water District
μT	micro-Tesla
NAHC	Native American Heritage Commission
NFIP	National Flood Insurance Program
NMC	northern mixed chaparral
NNG	nonnative grassland
NOI	notice of intent
NOP	notice of preparation

NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource Conservation Service
O	Ornamental
O_3	ozone
OHWM	ordinary high water mark
OPR	Governor's Office of Planning and Research
Pb	lead
PCE	perchloroethylene
PHGA	peak horizontal ground acceleration
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
psi	pounds per square inch
RAFSS	Riversidean alluvial fan sage scrub
RCP	reinforced concrete pipe
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
RHNA	regional housing needs assessment
RIX	rapid infiltration extraction
RMS	root mean square
ROW	right-of-way
RSA	regional subplanning area
RSS	Riversidean sage scrub
RSS/CWW	Riversidean sage scrub/California walnut woodland
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SANBAG	San Bernardino Association of Governments
SAW	sycamore alluvial woodland
SB	Senate Bill
SBCFCD	San Bernardino County Flood Control District
SBCoFD	San Bernardino County Fire Department
SBCUSD	San Bernardino Unified School District
SBFD	City of San Bernardino Fire Department

SBKR	San Bernardino kangaroo rat
SBMWD	San Bernardino Municipal Water District
SBNF	San Bernardino National Forest
SBPD	San Bernardino Police Department
SBPL	San Bernardino Public Library
SBVMWD	San Bernardino Valley Municipal Water District
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCGC	Southern California Gas Company
SCMLP	South Coast Missing Linkages Project
SCS	sustainable communities strategy
SFHA	special flood hazard areas
SMARA	Surface Mining and Reclamation Act
SoCAB	South Coast Air Basin
SOI	sphere of influence
SO_x	sulfur oxides
SRA	state responsibility area (hazards)
SRA	source receptor area (air quality)
SSARW	southern sycamore-alder riparian woodland
SSC	California Species of Special Concern
SWF	southwestern willow flycatcher
SWP	State Water Project
SWPPP	stormwater pollution prevention plan
SWQMP	stormwater quality management plan
SWRCB	State Water Resources Control Board
SWS	southern willow scrub
SWS/CWW	southern willow scrub/California walnut woodland
TAC	toxic air contaminants
TCE	trichloroethylene
TDS	total dissolved solids
TIA	traffic impact analysis
TMDL	total maximum daily load
TTCP	traditional tribal cultural places

TPZ	timberland productivity zones
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
UST	underground storage tank
UWMP	urban water management plan
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
WARM	waste reduction model
WRCC	Western Regional Climate Center
WRP	water reclamation plant
WUI	wildland-urban interface
ybp	years before present



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SPRING TRAILS ENVIRONMENTAL IMPACT REPORT (SCH # 2009111086)

VOLUME IIa

APPENDICES A–E

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JULY 2011

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J	Noise Monitoring Results
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SPRING TRAILS ENVIRONMENTAL IMPACT REPORT (SCH # 2009111086)

VOLUME IIb

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1. Executive Summary

1.1 INTRODUCTION

This Draft Environmental Impact Report (DEIR) addresses the environmental effects associated with the implementation of the proposed Spring Trails Specific Plan. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public document designed to provide the public and local and state governmental agency decision makers with an analysis of potential environmental consequences to support informed decision making. This document focuses on those impacts determined to be potentially significant as discussed in the Initial Study completed for this project (see Appendix A1).

This DEIR has been prepared pursuant to the requirements of CEQA, and the City of San Bernardino's CEQA procedures. The City of San Bernardino, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel from other departments and review of all technical subconsultant reports.

Data for this DEIR was obtained from onsite field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, agricultural resources, air quality, biological resources, cultural resources, geological resources, global climate change, hazards and hazardous materials, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems).

1.2 ENVIRONMENTAL PROCEDURES

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. The six main objectives of this document as established by CEQA are listed below:

1) To disclose to decision makers and the public the significant environmental effects of proposed activities.

2) To identify ways to avoid or reduce environmental damage.

3) To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.

4) To disclose to the public reasons for agency approval of projects with significant environmental effects.

5) To foster interagency coordination in the review of projects.

6) To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and must adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.2.1 EIR Format

This DEIR has been formatted as described below.

Section 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Section 2. Introduction: Describes the purpose of this EIR, background on the project, the Notice of Preparation, the use of incorporation by reference, and Final EIR certification.

Section 3. Project Description: A detailed description of the project, the objectives of the proposed project, the project area and location, approvals anticipated to be included as part of the project, the necessary environmental clearances for the project, and the intended uses of this EIR.

Section 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. The environmental setting provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the proposed project.

Section 5. Environmental Analysis: Provides, for each environmental parameter analyzed, a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance of the adverse impacts of the project after mitigation is incorporated and the potential cumulative impacts associated with the proposed project and other existing, approved, and proposed development in the area.

Section 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Section 7. Alternatives to the Proposed Project: Describes the impacts of the alternatives to the proposed project, including the No Project Alternative, and a Reduced Intensity Alternative.

Section 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Section 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Section 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Section 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this EIR for the proposed project.

Section 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this EIR for the proposed project.

Section 13. Bibliography: A bibliography of the technical reports and other documentation used in the preparation of this EIR for the proposed project.

Appendices. The appendices for this document (presented in PDF format on a CD attached to the front cover) contain the following supporting documents:

- Appendix A: Initial Study
- Appendix B: Comments on the IS/NOP and Scoping Meeting Notes
- Appendix C: Air Quality Modeling Results
- Appendices D1–D17: Biological Resources Appendices
- Appendix E: Archaeological and Paleontological Resources Assessment
- Appendices F1–F2: Geotechnical Report and Seismic Design Parameters
- Appendix G: Spring Trails Fire Protection Plan
- Appendices H1–H2: Fuel Modification Plan (Sheets 1 and 2)
- Appendix I1–I2: Hydrologic and Water Quality Report and Preliminary WQMP
- Appendix J: Noise Monitoring Results
- Appendix K: Traffic Impact Analysis
- Appendix L: Sewer Capacity Study

1.2.2 Type and Purpose of This DEIR

This DEIR has been prepared as a "Project EIR" as defined by state CEQA Guidelines (Section 15161, California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

1.3 PROJECT LOCATION

Spring Trails is within the unincorporated San Bernardino County on the northern edge of the City of San Bernardino. It is in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and the junction of Interstate 215 (I-215) and I-15. Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side. It is approximately one-third mile northwest of the intersection of Meyers Road and Little League Drive. Primary access is from a new roadway extending from Little League Drive and a secondary roadway via a new road extending south and connecting to the frontage road along I-215. Freeway access is from the Palm Avenue interchange and the Glen Helen Parkway/Devore Road interchange.

1.4 PROJECT SUMMARY

The Spring Trails Specific Plan proposes development of 307 single-family lots within a 352.8-acre site situated within an unincorporated area of the foothills of the San Bernardino Mountains. An additional 26.4 acre area of county land between the project site and the City would be annexed to the City to avoid the creation of a County "island." Upon approval, the two-phased construction process of the proposed project would begin in 2010 and end in 2013, assuming no changes to future planning decisions and market forces occur.

Project History

The project site has previously been proposed and evaluated for residential development. A Draft EIR was prepared for a previous development application (known as Martin Ranch) for this project site and was publicly circulated December 2002. After receiving comments regarding traffic impacts and project access, the project and Draft EIR were revised and recirculated in 2006. The revised plan and Draft EIR received numerous public comments regarding the primary and secondary access road alignments, traffic on Meyers Road, and impacts on the community of Devore. The project was redesigned as the Spring Trails Specific Plan. Due to the project redesign and changes in environmental conditions, specifically fires on the project site in 2003 and 2007, the City of San Bernardino determined that a new EIR should be prepared and recirculated.

Commenting on the EIR

During the public review period, July 29, 2011, through September 12, 2011, the public, reviewing agencies, and other organizations, are welcome to provide comments on this version of the Draft EIR. Public comments received on the 2002 and 2006 Draft EIRs for the Martin Ranch Specific Plans have been taken into consideration for the development of the proposed Spring Trails Specific Plan, but they will not be included in the Final EIR for this project. Commenters are encouraged to provide new comments during the public review period if they would like them to be considered during the decision-making process for the proposed project.

Development Plan

The Spring Trails plan accommodates 307 single-family detached units (306 new units and 1 existing residence) set among neighborhoods separated by open space corridors, drainage ways, roadways, and sloped areas. A system of pathways connects the residences with neighborhood parks and natural open spaces. Development is focused onto approximately 241.5 acres, or about 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space. The land use summary is found in Table 1-1.

The Spring Trails plan assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground is included for analysis in this EIR. The alternative plan is identical to the preferred plan except that it contains 304 single-family detached units (303 new units and 1 existing residence) and the SCE electric lines are located above ground (see Chapter 3, *Project Description*).

Table 1-1
Land Use Summary

Land Use	*Acres* [1, 2]	*Maximum Density*	*Units*[3]
Developed Area			
Residential	70.9	1 unit per lot	306
Private Lot (existing)	2.2	1 unit	1
Parks (public and private)	9.0		
Open Space – Controlled	125.1		
Utilities	1.2		
Roads (onsite)	33.1		
Subtotal	***241.5***		***307***
Undeveloped Area			
Open Space – Natural	111.3		
Subtotal Onsite	***352.8***		***307***
Offsite Acres			
Roads/Grading (offsite)	23.7		
Total (On- and Off-site)	**376.5**		**307**

Source: Spring Trails Specific Plan.

1 Variations to account for final roadway alignments and grading may result in a minor shifting of acres.

2 Statistics are based upon buildable area depicted on Figure 2.2 of the Specific Plan instead of the legal lot area to give a true picture of the use of the land. See Figure 3-4, *Zoning Map*, for the zoning designations.

3 Lots 30 and 233, as numbered on Tract Map 15576, are undevelopable unless the building pads are reconfigured in a manner that is acceptable to the Fire Chief. If they are not reconfigured accordingly, the total units developed would be 305.

Grading

A total of 193.0 acres would be graded and improved for the onsite development of residential lots, roadways, trails, detention basins, fuel modification zones, and parks. An additional 23.7 acres would be graded and improved for offsite access, including 4.2 acres for the primary access road and 19.5 acres for

the secondary access road. This totals 216.7 onsite and offsite acres to be graded. The average lot size in Spring Trails is 29,000 square feet (0.67 acres). The largest lots (up to 18.3 acres) are on the northern portion and upper elevations of the site, and the smallest lots (10,801 square feet or 0.25 acre) are on the lower elevations and southern portion of the project. The buildable and nonbuildable areas of each lot are depicted on Figure 3-3, *Development Plan,* and also on Figure 3-4, *Zoning Map,* in Chapter 3, *Project Description*. The buildable and nonbuildable areas of each lot for the alternative plan with overhead electric lines are depicted in Chapter 3 in Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan.*

Access Roads and Circulation

Primary access to Spring Trails would be provided by a new road extending from the southeastern corner of the site and connecting to Little League Drive. Secondary access is planned via a new road extending from the southwestern corner of the site to the frontage road along I-215. Except for emergency access, the intersection of the secondary access road with Meyers Road is designed with barriers to prevent vehicular access onto Meyers Road. Within Spring Trails, circulation is provided by a loop road and a series of cul-de-sacs. All onsite roadways would be two-way travel with one lane in each direction and with varying treatments for parkways, sidewalks, and parking.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project but may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in Section 7, *Alternatives to the Proposed Project*.

- No Project/No Development Alternative
- No Project/Existing County General Plan Alternative
- Alternative Site Plan
- Reduced Daily Grading Alternative

1.5.1 No-Project/No Development Alternative

The No Project/No Development Alternative would preserve the existing physical conditions of the project site. It assumes there would be no development of any type nor would development occur under existing land use designation parameters.

This alternative would preserve the site for open space and would preclude the development of the site under the City or County General Plan land use designations. The low-density residential development and Spring Trails Specific Trails would not be implemented and supporting infrastructure (i.e. roads and utility infrastructure) would not be built.

Environmental impacts relative to the proposed project would not occur under the no-project/no development alternative because there would be no development of any type nor would development occur under existing land use designation parameters. Significant and unavoidable construction-related air quality and noise impacts and operational greenhouse gas emission impacts relative to the proposed project would also not occur under the no-project/no development alternative.

1.5.2 No Project/Existing County General Plan Alternative

Under the No Project/Existing County General Plan Alternative, the project site would not be annexed to the City of San Bernardino and it would be developed in accordance with the land use designations and related overlay constraints included in the County of San Bernardino General Plan and Zoning Ordinance. The general plan (2007) designates the southern portion of the project site (approximately 190.6 acres) as Residential Estate (RL-5), with a minimum lot size of five acres, and the northern portion (approximately 160 acres) as private unincorporated land in the San Bernardino National Forest (see Figure 4-6, *Existing Land Use Designations*). This alternative assumes that primary access would be provided from the existing Meyers Road, and secondary or emergency access could be provided by Martin Ranch Road (see Figure 4-4, *Existing Site View 2*).

This alternative would reduce environmental impacts relative to the proposed project and would reduce significant and unavoidable construction-related air quality and operational greenhouse gas emission impacts of the proposed project to less than significant levels.

1.5.3 Alternative Site Plan

The Alternative Site Plan takes an approach to reduce significant and unavoidable air quality, noise, and greenhouse gas impacts to prepare a concept that would reduce the size of the area graded and the corresponding volume of earthwork. Based on the opportunity to reduce the development footprint, another objective of this alternative was to minimize other environmental impacts to the extent possible. The development concept was prepared to avoid constraint areas to the extent possible. This conceptual site design would have a total onsite development footprint of 137.6 acres (123.8 graded acres and 13.8 acres of ungraded fuel modification area), a reduction of 43 percent from the proposed project's onsite development area of 241.5. Assuming the same development density as the proposed project (1.27 du/ac), this alternative would yield 175 single-family homes. The yield in residential units for this alternative is 175.

The Alternative Site Plan would reduce but not eliminate the short-term air quality and noise impacts. It would have similar greenhouse gas emission impacts since the proposed project would emit a substantial amount of greenhouse gases and would be inconsistent with the transportation strategies of reducing vehicle miles traveled (VMT).

1.5.4 Reduced Daily Grading Alternative

The Reduced Daily Grading Alternative was defined and evaluated for its potential to reduce air quality impacts. The air quality impacts of the proposed project pertain to the emission of NO_X from construction activities at a local and regional level. The primary source of NO_X emissions is vehicle emissions, particularly heavy construction equipment. This alternative assumes that both the number of acres graded per day and the number of construction vehicles onsite per day would be reduced by 75 percent. This would make the grading phase approximately four times as long as for the project as proposed (12 months rather than 3 months).

The Reduced Daily Grading Alternative would substantially reduce construction-related air quality impacts. Daily NO_X emissions would be reduced from 740 to 181 pounds per day, but would still exceed the significance threshold of 100 lbs/day (see Table 7-5). Impacts to noise and traffic during construction would be worsened by this project alternative because of the extended construction period.

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to the following:

1. Whether this DEIR adequately describes the environmental impacts of the project.

2. Whether the benefits of the project override those environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.

3. Whether the proposed land use changes are compatible with the character of the existing area.

4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.

5. Whether there are other mitigation measures that should be applied to the project besides the mitigation measures identified in the DEIR.

6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the DEIR is to identify areas of controversy known to the lead agency, including issues raised by agencies and the public. Based on the public and agency response to previous plans of development for this site, the specific areas of controversy of this project involve the issues about traffic congestion in the surrounding community, the project's impact on the biologically sensitive habitat of the area, and the site's susceptibility to wildland fires because of its proximity to the San Bernardino National Forest.

A public scoping meeting was held to discuss these and other concerns related to the proposed project. This meeting was held on Monday, December 14, 2009, at the Economic Development Agency, 201 North E Street, Third Floor, in San Bernardino. A complete summary of the notes from the scoping meeting can be found on Table 2-1.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-2 summarizes the conclusions of the environmental analysis contained in this EIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. Unless noted the conclusions presented in Table 1-2 are applicable to both the preferred development plan (307 units) and the overhead electric line alternative plan (304 units).The level of significance after imposition of the mitigation measures is also presented.

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
5.1-1: The proposed Spring Trails project would alter the visual appearance of the City of San Bernardino.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.1-2: The proposed project would not alter scenic resources within a state scenic highway.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.1-3: The proposed project would generate additional light and glare.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.2 AIR QUALITY			
5.2-1: The proposed project would conflict with or obstruct Implementation of the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan because construction-related air pollutant emissions would exceed the SCAQMD regional and local emission thresholds.	Potentially Significant	Mitigation measures applied for short-term construction activities of the project would lessen impacts associated with Impact 5.2-1.	Significant and Unavoidable – Project and Cumulative Impact
5.2-2: Construction activities associated with the proposed project would generate short-term emissions that exceed South Coast Air Quality Management District's regional significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ and would significantly contribute to the nonattainment designations of the South Coast Air Basin for ozone and particulate matter (PM_{10} and $PM_{2.5}$).	Potentially Significant	**Fugitive Dust Mitigation Measures** 2-1 Ongoing during grading and construction, the construction contractor shall implement the following measures in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District Rule 403 to further reduce PM_{10} and $PM_{2.5}$ emissions. To assure compliance, the City shall verify that these measures have been implemented during normal construction site inspections: • During all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering as quickly as possible. This would achieve a minimum control efficiency for PM_{10} of 5 percent.	Significant and Unavoidable – Project and Cumulative Impact

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• During all construction activities, the construction contractor shall sweep streets with Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling. • During active debris removal and grading, the construction contractor shall suspend grading operations when wind speeds exceed 25 miles per hour. This would achieve an emissions control efficiency of 98 percent for PM_{10} under worst-case wind conditions. • During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other suitable means. This would achieve a control efficiency for PM_{10} of 91 percent. • During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day. This would achieve an emissions reduction control efficiency for PM_{10} of 61 percent. • During active debris removal, the construction contractor shall apply water to disturbed soils at the end of each day. This would achieve an emissions control efficiency for PM_{10} of 10 percent. • During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour. This would achieve a control efficiency for PM_{10} of 57 percent. • The construction contractor shall apply chemical soil stabilizers to reduce wind erosion. This would achieve a control efficiency of up to 80 percent. 2-2 During all grading activities, the daily area disturbed shall be limited to a maximum of 35 acres.	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Exhaust Emissions Mitigation Measures 2-3 Ongoing during grading, and construction, the construction contractor shall implement the following measures to further reduce construction exhaust emissions of NO_x. To assure compliance, the City shall verify that these measures have been implemented during normal construction site inspections: • The Project Applicant shall specify in the construction bid that construction contractors are required to use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over 50 horsepower. A list of construction equipment, by type and model year, shall be maintained by the construction contractor on-site. • The construction contractor shall ensure that all construction equipment is properly serviced and maintained to the manufacturer's standards to reduce operational emissions. • The construction contractor shall limit nonessential idling of construction equipment to no more than five consecutive minutes.	
5.2-3: Long-term operation of the project would not generate air pollutant emissions that exceed SCAQMD's regional significance thresholds.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.2-4: Construction activities associated with grading operations could expose offsite sensitive receptors to substantial pollutant concentrations of PM_{10} and could expose the existing onsite receptor to substantial pollutant concentrations of both PM_{10} and $PM_{2.5}$.	Potentially Significant	Mitigation Measures 2-1 through 2-3 would reduce air pollutant emissions associated with the project and would therefore also reduce the concentration of air pollutants at nearby sensitive land uses.	Significant and Unavoidable (Project) / Less Than Significant (Cumulative)

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.2-5: Long-term operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.3 BIOLOGICAL RESOURCES				
5.3-1: Development of the proposed project would involve the loss or modification of approximately 265.2 acres of natural habitat and the wildlife species. These activities could potentially impact special status plants and animal species. Impacts could occur to critical habitat designated by the US Fish and Wildlife Service. Indirect impacts to sensitive plant and animal habitats could also occur.	Potentially Significant	3-1	Prior to the issuance of grading permits, preconstruction surveys within the proposed impact areas for Plummer's mariposa lily shall be conducted in the appropriate blooming period by a qualified biologist. The appropriate blooming period is defined as occurring within the months of April, May, and June, or as indicated by positive verification of blooming at a documented reference location. Surveys must only be conducted during a year of at least average precipitation, as determined by official precipitation records. The surveys should positively identify and quantify all individuals on or in the immediate vicinity of the proposed impact areas. Any individuals confirmed within the project impact area shall be considered for possible salvage and relocation into suitable receptor sites located onsite within preserved areas, if feasible. Any individuals confirmed in the immediate vicinity of a proposed impact area shall be flagged and appropriately fenced off from construction zones to prevent inadvertent impacts. Individuals confirmed within areas proposed for preservation onsite shall be properly recorded and avoided during any revegetation or other efforts anticipated in the long term during project operation. All observations shall be accurately reported to the California Natural Diversity Database, the California Native Plant Survey, the Consortium of California Herbarium, and/or other herbarium or sensitive species databases as determined by the qualified biologist. This measure shall be implemented to the satisfaction of the Community Development Director.	Less Than Significant
		3-2	To mitigate for impacts to unoccupied critical habitat of the federally endangered San Bernardino kangaroo rat, the project applicant shall acquire offsite permanent mitigation lands of like habitat quality as determined by the	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			US Fish and Wildlife Service (USFWS) during the Section 7 consultation process. Mitigation lands must be acquired prior to the issuance of grading permits, and shall incorporate appropriate long-term management provisions such as deed restrictions, endowments, and/or other management mechanisms to provide for the long-term conservation of the habitat. Potential properties include, but are not limited to, those managed by San Bernardino County Special Districts located in the Glen Helen, Rialto, and Rancho Cucamonga areas. Mitigation lands shall be acquired at a replacement ratio of 1:1 (one acre replaced for every one acre impacted). This measure does not preclude the imposition of additional mitigation requirements that may be initiated by the USFWS during the Section 7 consultation process. This measure shall be implemented to the satisfaction of the Community Development Director.	
		3-3	To mitigate for potential impacts to hydrological processes and subsequent degradation of habitat for the federally endangered San Bernardino kangaroo rat and other sensitive species, all roadway crossings or other improvements proposed within critical habitat for the species shall be designed in such a manner as to not substantially alter the natural flow regimes through impacted sensitive habitat areas. These designs shall include, but shall not necessarily be limited to, the installation of appropriate culverts and stream crossings that allow for natural flow and uninhibited downstream hydrological processes. Design of these improvements shall be undertaken in consultation with the US Fish and Wildlife Service and other responsible agencies. This measure shall be implemented to the satisfaction of the Community Development Director prior to the issuance of grading permits.	
		3-4	Any hiking and equestrian trails or other facilities developed within Cable Creek or other riparian areas on the site shall be designed to comply with provisions in the General Plan. These requirements shall include, but not necessarily be limited to: 1) no ground disturbance may take place within 50 feet of the	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		ordinary high-water mark of the associated stream channel; 2) erosion, sedimentation, and runoff from the proposed improvements must be minimized by the implementation of appropriate best management practices, the installation of appropriate runoff diversions, and/or the planting of native vegetation; 3) Vegetation removal will be minimized to the maximum extent possible; and 4) appropriate signage shall be installed in at least five locations alongside these facilities to educate users as to the importance of riparian ecosystems, the species that rely upon them, and the importance of avoiding unnecessary impacts and disturbance. This measure shall be implemented to the satisfaction of the Community Development Director. [This measure also provides mitigation for Impact 5.3-4 as related to impacts to wildlife corridors. See Mitigation Measure 3-9]	
		3-5 The applicant shall prepare a signage and a buyer awareness program to be implemented to inform homeowners of the proximity to sensitive wildlife areas. The purpose of this program shall be to (1) prevent wildlife from being attracted to the housing development and (2) prevent household pets from preying on and harassing the local sensitive species. Materials and literature provided to the residents shall address the implications and dangers of living adjacent to natural open space areas. To prevent wildlife from being attracted to the project site, the materials shall provide information on homeowner's benefits and responsibilities associated with living close to natural wildlife habitats. Specific responsibilities of homeowners shall be described in these materials and be included in the Homeowners Association (HOA) Covenants, Codes, & Restrictions (CC&R). These measures shall include, but not necessarily be limited to, the following: • The storage and disposal of ALL food or refuse that is edible by or attractive to wildlife shall be placed in Wildlife-Resistant Refuse Enclosures and Containers. These containers shall meet applicable standards of testing by the Living With Wildlife Foundation and be bear	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		resistant for 60 minutes so long as they are able to meet the City of San Bernardino's Refuse and Recycling Division's restrictions for pick-up and onsite sizing. Examples of Wildlife-Resistant Refuse Enclosures and Containers are provided by the Living with Wildlife Foundation (http://www.lwwf.org/). o The project applicant shall coordinate with the City of San Bernardino Refuse and Recycling Division to ensure all refuse facilities conform to their sizing and pick-up requirements. All refuse containers shall be designed to be consistent with the City of San Bernardino Refuse and Recycling Division restrictions. • With the exception of birdfeeders, no person shall intentionally feed or knowingly leave or store any refuse, food product, pet food, or other product edible by wildlife on any premises in a manner which would constitute a lure, attraction, or enticement of wildlife on property within the development o Birdfeeders must be suspended on a cable or other device so as to be inaccessible to bears and other wildlife, and the area below the feeders must be kept free from seed debris. If a wild animal gains access to a birdfeeder, the condition allowing access must be corrected or the birdfeeder removed. • To limit the amount of time refuse is on the curb, trash should be set out and brought back inside between specified hours on pick-up day (to be detailed in the proposed or future HOA CC&R's). To prevent the disturbance of wildlife (and sensitive species) by domestic pets, the program shall inform residents of the impacts their pets have on local animals. Cat-owners shall be informed of measures to keep their pets within their property boundaries and dog-owners shall keep their dogs on a leash while outside (except within designated dog parks). These	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		measures would also serve to lessen the likelihood of domestic pets being preyed upon by wild predators. The buyer awareness materials will be included in a sales disclosure statement and in the Homeowners Association (HOA) CC&R's. A copy of the buyer awareness materials shall be approved by the Community Development Director and available to residents upon request.	
5.3-2: Development of the proposed project would result in impacts to six riparian plant communities totaling 26.4 acres. Also, 168.4 acres of Riversidean sage scrub, a sensitive nonriparian plant community, would be impacted. Portions of the site within USFWS-designated critical habitat for San Bernardino Kangaroo Rat would be impacted.	Potentially Significant: Impacts to Riversidean sage scrub (168.4 acres) and sensitive riparian plant communities (26.4 acres) and impacts related to noxious weeds and invasive plant species. Less Than Significant: Impacts to riparian communities.	3-6 To mitigate impacts to 168.4 acres of Riversidean sage scrub (RSS) and 26.4 acres of riparian plant communities, the project applicant shall do one of the following, or a combination thereof, prior to the issuance of grading permits: 1) acquire offsite permanent mitigation lands of like habitat as determined by the California Department of Fish and Game (CDFG); and/or 2) pay appropriate in-lieu fees to an appropriate permanent mitigation land bank as determined by CDFG. Mitigation lands must be acquired prior to the issuance of grading permits, and shall incorporate appropriate long-term management provisions such as deed restrictions, endowments, and/or other management mechanisms to provide for the long term conservation of the habitat. Potential properties include, but are not limited to, those managed by San Bernardino County Special Districts located in the Glen Helen, Rialto, and Rancho Cucamonga areas. Mitigation lands for riparian habitat shall be acquired at a replacement ratio of 1:1 (one acre replaced for every one acre impacted). Mitigation lands for RSS shall be acquired at a replacement ration of 1:3 (one acre replaced for every three acres impacted). This measure shall be implemented to the satisfaction of the Community Development Director. 3-7 All real property sold within the development shall contain within the real estate contract appropriate Covenants, Codes, and Restrictions (CC&Rs) to require only the use of approved plants on any and all parcels within the development. Approved plants are defined as those listed in the Fire Protection Plan (Firesafe Planning Solutions, 2008) and incorporated into the Spring Trails Specific Plan. All plants classified as "invasive" or "noxious" by the U.S. Department of	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			Agriculture Natural Resource Conservation Service (NRCS) shall be specifically prohibited from use in any part of the development, unless specifically authorized within the Fire Protection Plan or the Specific Plan. Enforcement shall be instituted through the project's Homeowner's Association (HOA) and specific enforcement measures shall be provided within the HOA's charter. Enforcement measures may include, but not necessarily be limited to, the imposition of fines, liens, property-owner reimbursed removal of unauthorized plants, and/or other mechanisms. This measure must be implemented prior to the sale of the first residential lot and shall be implemented to the satisfaction of the Community Development Director.	
		3-8	Prior to the issuance of grading permits, the developer or his designee shall submit to the City a noxious weed control plan prepared by a qualified specialist that shall be implemented during construction of the project. The plan shall contain specific measures to be adopted to lessen or eliminate the inadvertent introduction of noxious weeds onto the site or surrounding areas. At a minimum, the plan shall incorporate each of the following requirements: 1) all construction equipment used on the site shall be thoroughly washed prior to transport to the project site; 2) cleaning and washing of equipment includes washing and/or steam cleaning of tires, undercarriages, frames, and other parts of the equipment where mud, dirt, and other debris could be located; 3) offsite cleaning areas shall be clearly identified; and 4) straw bales and other erosion control products shall be certified as "weed free". The plan shall be reviewed by a qualified third party with expertise in the field of noxious weed control. Other control measures may be added by that specialist as deemed appropriate. Following approval of the plan, the plan shall be implemented throughout the construction phase of the project and overseen by a qualified specialist at monthly intervals. During monitoring, the specialist shall have the authority to require corrective measures to assure the success of the plan. This measure shall be implemented to the satisfaction of the Community	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			Development Director.	
5.3-3: The proposed project would impact approximately 10.6 acres of US Army Corps of Engineers and Regional Water Quality Control Board jurisdictional areas, and 13.3 acres of California Department of Fish and Game jurisdictional areas. Approximately 6.2 acres of the identified jurisdictional areas are in a seasonal wetland.	Less Than Significant	Mitigation Measures 3-3, 3-6 and 3-11 would reduce the project's impacts to jurisdictional areas and riparian habitats.		Less Than Significant
5.3-4: The proposed project would affect wildlife movement and wildlife nursery sites. Raptor foraging habitat and nesting birds would not be affected.	Potentially Significant: Impacts related to nesting birds and impacts to wildlife corridors. Less Than Significant: Impacts to raptor foraging.	3-9	Implementation of Mitigation Measure 3-4 to mitigate potential impacts to sensitive species in Cable Creek shall also be applied to Impact 5.3-4.	Less Than Significant
		3-10	With regard to the protection of nesting birds, one of the following must occur: 1) Construction should occur outside of the avian nesting season (approximately February 15 through August 31); or 2) If construction must occur during the nesting season, then a preconstruction nesting bird survey of the site shall be conducted by a qualified biologist no more than 14 days prior to construction activities. If active nests are found onsite, then they must be avoided by an appropriate buffer until any young birds have fledged and the nest has completed its cycle, as determined by a qualified biologist. If construction occurs outside of the avian nesting period, then construction may commence without further impediment, commensurate with other regulatory and mitigation requirements. This measure shall be implemented to the satisfaction of the Community Development Director.	
		3-11	Two known wildlife corridors are present on the project site and may be impacted by the proposed project unless mitigation is incorporated: 1) the unnamed tributary of Cable Creek that flows in an east-to-west direction in the northern third of the project site (referred to here as the Northern Corridor); and	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		2) the outwash of Cable Creek adjacent to the Interstate 215 freeway that is proposed to be crossed by the secondary access road (referred to here as the Southern Corridor). For these corridors, the following must occur: **Northern Corridor:** 1) Native vegetation within this corridor must be restored, enhanced and maintained to the maximum extent allowed by the Fire Protection Plan; 2) riparian vegetation that provides high-quality foraging opportunities, cover, and other habitat values shall be the preferred vegetation type in this area, unless specifically prohibited by the Fire Protection Plan; 3) this area shall be the preferred location for the planting of replacement native trees as outlined in the tree replacement requirements of Mitigation Measure 3-11, unless specifically prohibited by the Fire Protection Plan; 4) the corridor shall be maintained free of fences, walls, or other obstructions; 5) any lighting associated with the project in this area, including street lights and residential lights, shall be of the minimum output required and shall be down-shielded to prevent excessive light bleed into adjacent areas; 6) any road crossings, bridges, culverts, etc., shall be constructed with soft bottoms with an openness ratio of at least 0.9 (openness ratio=height x width/length); and 7) additional recommendations as outlined in the report entitled "A Linkage Design for the San Gabriel-San Bernardino Connection" (South Coast Missing Linkages Project 2004) may be incorporated as feasible and appropriate. **Southern Corridor:** 1) Any bridge, culvert, or other road crossing structure shall be designed in such a manner as to allow for the maintenance of natural flow through the structure and downstream of the structure, as conditioned by the US Fish and Wildlife Service during the Section 7 permitting process; 2) any road crossings, bridges, culverts, etc. shall be constructed with soft bottoms with an openness ratio of at least 0.9 (openness ratio=height x width/length); and 3) additional recommendations as outlined in the report entitled "A Linkage Design for the San Gabriel-San Bernardino Connection" (South Coast Missing Linkages Project, 2004) may be incorporated as feasible	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			and appropriate. These measures shall be incorporated into site development plans and must be reviewed and approved prior to the issuance of grading permits. This measure does not preclude the requirement of additional mitigation that may be initiated by the US Fish and Wildlife Service, the US Army Corps of Engineers, the Regional Water Quality Control Board, or the California Department of Fish and Game during the regulatory permitting process. This measure shall be implemented to the satisfaction of the Community Development Director.	
		3-12	To avoid potential direct impacts to mule deer birthing and initial nursing, initial grubbing and vegetation clearing may not occur during mule deer fawning season. For purposes of this project, the mule deer fawning season is defined as March 15 through August 31. This measure shall be implemented to the satisfaction of the Community Development Director.	
5.3-5: The proposed project would be required to comply with the City of San Bernardino Tree Ordinance and be consistent with applicable policies of the City of San Bernardino General Plan.	Potentially Significant: Impacts related to tree resources. Less Than Significant: Impacts to USFWS designated critical habitat.	3-13	Significant tree resources that are removed from the site during project development shall be replaced at a 1:1 ratio or at the exchange ratios specific below. Significant tree resources are defined as any native or nonnative ornamental tree—excluding species of the *Eucalyptus* genus—that is healthy, structurally sound, and is over 20 feet in height. For California black walnut (*Juglans californica* var. *californica*), all specimens of the species shall be regarded as significant, regardless of size or height. Prior to the issuance of grading permits, a certified arborist shall conduct an inventory of all significant trees within the development footprint. This inventory shall be used to determine the number and types of significant trees that will be impacted and the subsequent replacement quantities. The number of replacement trees shall be, at a minimum, 220 trees. Should the aforementioned inventory determine that a greater number of significant trees will be impacted, then that quantity shall be used in determining replacement quantities. For purposes of	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			replacement ratios, the following exchange ratios shall be used: 1) one 36-inch box tree is equivalent to one replacement tree; 2) five 15-gallon trees are equivalent to one replacement tree; 3) 10 five-gallon trees are equivalent to one replacement tree; and 4) 15 one-gallon trees are equivalent to one replacement tree. During the development of the project, the project applicant shall incorporate the recommendations as set forth in the project arborist report (Integrated Urban Forestry 1998). A certified arborist shall be retained at the developer's expense to oversee the implementation of these requirements and to specify other requirements as deemed appropriate. The measures to be followed include, but are not limited to, specified protocols for the following: 1) the removal of nonnative trees from the site; 2) the removal and transplantation, when feasible, of structurally sound and healthy native trees to other areas of the project site; 3) the installation of tree protection barriers on all trees to be preserved that are within the reach of vehicles and equipment; 4) tree protection training of construction personnel by a certified arborist; 5) irrigation of trees where the natural water supply is interrupted or diminished or where protected trees may require additional water to endure construction-induced stresses; 6) subsequent replacement of any trees that are damaged or have not survived transplantation and relocation; and 7) implementation of the tree replacement plan, as outlined in the first paragraph of this measure. This measure shall be implemented to the satisfaction of the Community Development Director.	
			3-14	Prior to the commencement of ground-disturbing activities, the developer shall retain the services of qualified specialists, approved by the City, to oversee the long-term effectiveness of the biological resources mitigation required in this EIR. When appropriate, the services of these specialists may be combined so long as the person(s) so employed possess the requisite training and skills necessary to effectively carry out their duties to professional standards. Those	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		specialists shall conduct reviews of the project site for a minimum of five years, as measured from the day of beginning of initial ground disturbance. Reviews shall be conducted, as applicable, on a monthly basis for the first year following initiation, on a quarterly basis during the second and third years, and on an annual basis during the fourth and fifth years. The intensity of monitoring may be increased or the monitoring period extended if the City or relevant Responsible Agency (i.e., CDFG, USFWS, RWQCB, etc.) determines that conditions on the ground warrant such action. The qualified specialists to be retained and the nature of their duties are as follows: Biologist: a qualified biologist shall monitor the effectiveness of Mitigation Measures 3-1, 3-2, 3-4, 3-6, 3-10, 3-11, 3-12, and 3-14. Noxious/Invasive Plant Control Specialist: a person who is qualified in the field of noxious plant management and control shall monitor the effectiveness of Mitigation Measures 3-7 and 3-8. Arborist: a certified arborist shall monitor the effectiveness of Mitigation Measure 3-13. Hydrologist/Stormwater Control Specialist: a qualified hydrologist and/or stormwater control specialist shall monitor the effectiveness of Mitigation Measures 3-3, 3-4, and 3-6. Following each monitoring session, these specialists shall file brief reports with the Community Development Director concerning the effectiveness of the prescribed mitigation. The specialist shall identify and call out any corrective actions required to assure that the purposes of the mitigation are being effectively pursued. The developer shall comply with any corrective measures so prescribed. Monitoring may cease if the qualified specialist determines that the terms of the mitigation have been satisfactorily implemented and that further monitoring is no longer required. This measure shall be implemented to	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the satisfaction of the Community Development Director.	
5.4 CULTURAL RESOURCES			
5.4-1: Development of the project would not impact any historic resources.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.4-2: Development of the project would impact archaeological resources	Potentially Significant	4-1 Preconstruction archaeological testing by a qualified archaeologist is required to evaluate the significance of historic Cable Canyon Ranch. A qualified archaeologist must be present for grubbing, de-vegetation, and demolition of the spring, remnant stone structure, and fence to protect resources that may be revealed by these activities. Subsequent to vegetation removal but before construction, the archaeologist will perform controlled mechanical excavation inside and outside the house area to locate features present below the ground surface. Once located, the archaeologist should develop a formal treatment plan (plan of work including research questions to be answered and containing an agreement with an accredited repository). Excavation of subsurface features can include additional mechanical excavation or hand excavation as warranted by the features. Discovery of features and recovery of archaeological materials will require extensive sampling, documentation, laboratory work, identification, analysis, and interpretation. The final report should include formal evaluation and significance assessment of each feature and the project catalog and be filed with the City, the San Bernardino Archaeological Information Center, and the repository (San Bernardino County Museum recommended). The site records should also be updated. 4-2 If testing determines that the Cable Canyon Ranch complex meets significance criteria, then preconstruction archaeological data recovery excavations by a qualified archaeologist is required to mitigate the adverse impacts of construction on historic Cable Canyon Ranch. The archaeologist should develop a formal data recovery plan (plan of work including research questions to be answered and containing an agreement with an accredited repository).	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			Excavation of subsurface features can include additional mechanical excavation or hand excavation as warranted by the features. Discovery of features and recovery of archaeological materials will require extensive sampling, documentation, laboratory work, identification, analysis, and interpretation. The final report should include the project catalog and be filed with the City, the San Bernardino Archaeological Information Center, and the repository (San Bernardino County Museum recommended). The site records should also be updated.	
		4-3	Construction grading in and around the Cable Canyon Ranch complex must be monitored by a qualified archaeologist to ensure that any subsurface features or refuse deposits that were not located during previous phases of archaeological work are found and evaluated. The City should refuse to issue a final occupancy permit until all mitigation is demonstrated to have been performed, including curation of the project documents and artifacts.	
5.4-3: The proposed project could destroy paleontological resources or a unique geologic feature.	Potentially Significant	4-4	Cultural resources sensitivity training is required for all earth-moving personnel. This training will review the types of archaeological and paleontological resources that might be found, along with laws for the protection of resources. In the event of an unanticipated discovery, all work must halt within a 30-foot radius of the find. Work may not continue until the find has been evaluated by a qualified archaeologist or paleontologist, depending on the nature of the discovery. All discoveries require scientific samples and documentation, including a final report.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4-4: Grading activities could potentially disturb human remains.	Potentially Significant	4-5 The applicant shall implement one of the mitigation measures outlined below to address anomalies found at the presumed location of the Meyers Family Cemetery. The applicant shall consult with the Meyers family descendents in the selection of the appropriate mitigation options for the Meyers Family Cemetery in conjunction with the proposed development. It shall be a high priority to implement an option that most closely meets the desires of the family to the extent feasible under the final approved development and grading plans. In the event the final development and grading permits do not require grading or other disturbance of the anomaly sites, one of the following mitigation measures shall be implemented: 1. The burial site anomalies/remains shall remain undisturbed. This can be accomplished either by complete avoidance of the project area or alternatively by "capping" the site. Capping the site would involve scraping existing vegetation and providing up to two feet of compacted fill material over the site. No activity under this option shall excavate lower than one foot below grade to remove existing vegetation or soil. Replacement vegetation may be placed for future open space such as a park. Plans to cap the site shall be prepared and reviewed/approved by a certified archaeologist prior to the disturbance of the cemetery site surface. In addition, a covenant in the deed shall restrict any future excavation within 25 feet of the anomalies. 2. The applicant shall coordinate with the Meyers family to facilitate excavation of the anomalies to determine if they represent coffins and, if so, to coordinate reburial at a private or public cemetery to be determined by the family. Under this option, preconstruction archaeological testing by a qualified archaeologist is required. The archaeological testing must consist of mechanical excavation of overburden and hand excavation near the anomalies to determine if they represent coffins. The excavation shall	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		occur under the supervision of a certified archaeologist and a Meyers family representative. If the anomalies are demonstrated not to contain coffins, no further work will be required. If coffins are present, the family shall determine the desired deposition. This may include transfer of the undisturbed coffins for reburial or option 3 below. The applicant shall be responsible for the transport of relocating the remains for the family. If desired by the family, the applicant shall also be responsible for funding a family memorial plaque near to the original burial site. In the event the site is not avoided as part of the final development and grading permits, and testing demonstrates that coffins are, in fact, present, the applicant shall implement option 2 or option 3 below: A qualified archaeologist shall develop a formal treatment plan (plan of work including research questions to be answered). The excavation team shall include a qualified osteologist. Excavation may include mechanical excavation of overburden and hand excavation of human skeletal materials. The treatment plan should include an agreement with the Meyers family as to the disposition of any human skeletal remains. A final report shall include formal evaluation and the project catalog and be filed with the City and the San Bernardino Archaeological Information Center. The site record should also be updated. 4-6 If human remains are discovered at any time, the applicant shall follow guidelines addressed in California Health and Safety Code Section 7050.5. This requires that work in the vicinity must halt and the county coroner must be notified immediately. If the remains are determined to be Native American, the coroner will contact the Native American Heritage Commission. All discoveries require verification and documentation, including a final report.	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4-5: The project would not be developed in a sensitive archaeological area, as identified in the City's General Plan.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant Impact
5.5 GEOLOGY AND SOILS			
5.5-1: The project would involve grading on about 216.7 acres of land, with roughly 3.1 million cubic yards of cut and 2.8 million cubic yards of fill. Project earth movement would not result in substantial adverse erosion or dust impacts.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.5-2: The project could expose people or structures to potential substantial adverse effects from rupture of a known earthquake fault.	Potentially Significant	5-1 Prior to recordation of final maps, additional fault studies shall be conducted to the satisfaction of the geotechnical consultant of record on the project and the City Engineer. These studies shall include: 1. Trenching across Splay E to locate the splay and gauge its activity in order to determine the required width of setbacks from the splay. 2. A trench across Splay A in the western part of the site to confirm the location of the splay in that part of the site and to aid in determining the width of required setbacks from the splay. 3. A trench between Splays A and B in the central part of the site. If the geotechnical consultant recommends expanded or modified setbacks from faults based on the findings of such additional studies, then the project will be required to comply with such setbacks, and any lots that would not be developable according to the development standards of the Specific Plan will be eliminated prior to recordation of TTM 15576 or the associated phase of TTM 15576.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5-3: The project could expose people or structures to potential substantial adverse effects from strong ground shaking.	Potentially Significant	5-2 Prior to recordation of final maps, a detailed design-level geotechnical investigation report shall be prepared and submitted with engineering grading plans to further evaluate liquefaction, seismic settlement, lateral spreading, subsidence, collapsible soils, corrosive soils, slope stability including earthquake-induced landslides, and other geotechnical constraints and provide site-specific recommendations to address such conditions, if determined necessary. The geotechnical reports shall be prepared and signed/stamped by a Registered Civil Engineer specializing in geotechnical engineering and a Certified Engineering Geologist. The project would be required to comply with any recommendations that are made in the report of such investigation. 5-3 For each phase of the project, at the completion of grading and before project construction begins, final geotechnical testing for corrosive soils and expansive soils shall be conducted. A final geotechnical report for the relevant phase shall be prepared and signed/stamped by a Registered Civil Engineer specializing in geotechnical engineering and a Certified Engineering Geologist. Such report shall contain recommendations to address corrosive soils and expansive soils, as determined necessary. The project would be required to comply with any recommendations that are made in the report of such investigation.	Less Than Significant
5.5-4: Although people or structures could be exposed to potential adverse effects from seismic-related ground failure such as liquefaction and settlement, these hazards are low because the project site is not in a moderate or high liquefaction hazard zone identified in the City of San Bernardino General Plan.	Potentially Significant	Mitigation measures for Impact 5.3-3 would also be applied for this impact.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5-5: The project site is not subject to substantial hazards from landslides, mudslides, or subsidence.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.5-6: The expansion potential of site soils is low to very low, and project development would not create substantial hazards arising from expansive soils.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.5-7: Project development would modify part of the San Andreas fault, a unique geological feature.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.5-8: Project grading and construction would be conducted so as not to result in substantial amounts of unstable soils.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.5-9: Part of the project would be developed within a Hillside Management Overlay Zoning District.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.6 HAZARDS AND HAZARDOUS MATERIALS			
5.6-1: Project construction and operation would involve the transport, use, and/or disposal of hazardous materials.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.6-2: Project development would not interfere with an emergency response or evacuation plan.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.6-3: The project site is in a very high fire hazard zone and could expose structures and/or residents to fire danger. Two lots (Lots 30 and 233) would not have sufficient space for fuel modification.	Potentially Significant	6-1 The Fire Protection Plan shall be approved by the City of San Bernardino Fire Department prior to commencement of grading. The Fire Marshal shall have the authority to modify, increase, or reduce the necessary size and location of any of the recommended Fire Management Zones and setbacks, based on a lot-by-lot inspection at time of grading. A minimum of 170 feet of fuel modification plus enhanced structural treatments listed in the Fire Protection Plan are needed to provide a safe buffer between the wildland and the structures. 6-2 Prior to introduction of combustible materials on any lot, the developer or builder shall clear all flammable vegetation, including weeds to four inches in height or below (leave enough vegetation to allow for erosion control). All cut and dead vegetation shall be removed from the site. The builder shall maintain each site in this condition until the homeowner takes responsibility and installs irrigation and fire-resistive landscaping as approved by the Homeowners Association. All landscaping must be in compliance with the guidelines in the approved Fire Protection Plan. All manufactured slopes, internal common areas, and open spaces shall comply with the criteria set forth in the Fire Protection Plan and shall not have any vegetation of the type prohibited in this plan (undesirable plant list). 6-3 The Homeowners Association shall assure that all fuel modification on private lots is in accordance with the requirements in the plan. 6-4 An annual inspection of the property for compliance with the approved plan shall be done by the Homeowners Association with a written letter of compliance sent to the San Bernardino Fire Department. Every five years, an approved Wildland Fire Protection consultant funded by the HOA shall inspect the site and a report shall be submitted to the San Bernardino Fire Department. *Onsite Roadway Vegetation* 6-5 Vegetation shall be modified and/or cleared, either by the Landscape Maintenance District or the Homeowners Association on each side of any	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		onsite road in accordance with the approved Fire Protection Plan. *Southern California Edison Easement* 6-6 If the project is built with the Southern California Edison 115 kV transmission lines remaining aboveground, all flammable vegetation within the SCE overhead electric line easement shall be removed, on an ongoing basis, except for that needed for erosion control and soil stability. *Lots 30 and 233* 6-7 Development of Lots 30 and 233 shall only occur when the following conditions are met. No development shall occur without the review and approval of the San Bernardino Fire Chief. • The onsite fuel modification shall consist of irrigated "Zone A" and "Zone B" that will remain within the Spring Trails property. An irrigated "Zone A" shall be a non-combustible setback zone within the pad area between the residential structure and the wildland urban interface area, traditionally the furthest portion of the pad. "Zone B" shall be a landscaped irrigated zone beyond "Zone A" and terminating at the project boundary, with non-combustible construction which will act as a "heat-sink" from an impending wild fire. "Zone C" shall extend offsite as fuel modification. "Zone C" will be a temporary off-site fuel modification until the adjoining property is, or will be, developed. If this is the scenario an easement will be required for maintenance of the "Zone C". If the adjoining property is developed prior to the development of the Spring Trails project, then the off-site fuel modification will not be required for Lots 30 and 233. The total fuel modification distance for lots 30 and 233 will be a minimum of 170 feet. • For Lot 30, Zone A shall have a minimum/maximum distance of 20 feet, Zone B shall have a minimum distance of 88 feet and a maximum distance of 113 feet, and Zone C shall have a minimum distance of 37	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		feet and a maximum distance of 62 feet (a total of 15,469 square feet). • For lot 233, Zone A shall have a minimum/maximum distance of 20 feet, Zone B shall have a minimum distance of 68 feet and a maximum distance of 112 feet in width, and Zone C shall have a minimum distance of 43 feet and a maximum distance of 80 feet (a total of approximately 20,706 square feet).	
5.6-4: Expose persons or property to significant risk, injury, or death involving high winds.	Potentially Significant	6-8 The development of Spring Trails shall follow development guidelines outlined in the San Bernardino General Plan for high wind areas (Policies 10.10.1 through 10.10.8). The building plans must be approved by the building official. • Policy 10.10.1: Ensure that buildings are constructed and sited to withstand wind hazards. • Policy 10.10.2: Require that development in the High Wind Hazard Area, as designated in Figure S-8 [of the San Bernardino General Plan], be designed and constructed to withstand extreme wind velocities. • Policy 10.10.3: Periodically review the structural design requirements for wind in the Building Code to reflect wind conditions and property damage experienced as well as advances to current construction technology. • Policy 10.10.4: Require that structures be sited to prevent adverse funneling of wind onsite and on adjacent properties. • Policy 10.10.5: Require that multi-story residential, commercial, and industrial buildings be designed to prevent wind tunnel effects around their base and in passageways. • Policy 10.10.6: Construct public infrastructure (lighting poles, street lights, bridges, etc.) to withstand extreme wind velocities in High Wind Hazard areas. • Policy 10.10.7: Maintain police, fire, medical, and other pertinent programs to respond to wind-caused emergencies. • Policy 10.10.8: Initiate a review of the wind hazard potential as it applies	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			to various parts of the City and, if merited, tailor the design standards accordingly.	
		6-9	Implementation of Mitigation Measure 2-1 (Section 5-2, *Air Quality*) would reduce construction-related wind-blown dust impacts.	
5.6-5: If the project is built with the Southern California Edison 115 kV transmission lines remaining above ground the lines would potentially expose construction workers, and residents to hazards of electric shock and/or electric and magnetic fields.	Potentially Significant	6-10	If the project is built with the Southern California Edison 115 kV transmission lines remaining aboveground, the development plans shall be drawn to accommodate SCE safety measures including: • Operators of construction equipment with overhead lift capability, cranes, backhoes, and similar equipment shall abide by state safety clearances and undergo SCE-approved safety training, as needed, before operating the equipment onsite. • Near residences, a safety strip meeting SCE standards shall be required beside the SCE right-of-way. • Easements shall be employed as needed to prevent damage to the towers, shield residents from harm, and guarantee SCE maintenance access..	Less Than Significant
5.7 HYDROLOGY AND WATER QUALITY				
5.7-1: Development pursuant to the proposed project would increase the amount of impervious surfaces on the site and would therefore increase surface water flows into drainage systems within the watershed.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.7-2: Development pursuant to the proposed project would increase the amount of impervious surfaces on the site. Project development would not substantially	Less Than Significant	No mitigation measures are necessary.		Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
reduce groundwater recharge compared to existing conditions.			
5.7-3: The project site is not within a 100-year flood hazard area.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.7-4: During the construction phase of the proposed project, there is the potential for short-term unquantifiable increases in pollutant concentrations from the site. After project development, the quality of storm runoff (sediment, nutrients, metals, pesticides, pathogens, and hydrocarbons) may be altered.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.7-5: The site would not be subject to inundation by seiche or dam failure. Development of three reservoirs onsite as part of the project would not create substantial flooding hazards due to seiches.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.7-6: Project development would not place habitable structures or roadways in the paths of debris flows expected to occur in a 100-year storm.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.8 LAND USE AND PLANNING			
5.8-1: Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.8-2: The proposed project would conflict with the adopted United States Fish and Wildlife Service San Bernardino Kangaroo Rat Critical Habitat.	Potentially Significant	8-1 The mitigation measure 5.3-2, described in Section 5.3 of this EIR, shall be followed during the Section 7 consultation process prior to the issuance of grading permits.	Less Than Significant
5.8-3: Development would occur in the Hillside Management Overlay District.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.8-4: Development would occur within Foothill Fire Zones A and B or C, as identified in the City's General Plan.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.9 MINERAL RESOURCES			
5.9-1: Substantial mineral resources would not be made unavailable for extraction by implementation of the proposed project.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.10 NOISE			
5.10-1: Project-related traffic would not substantially increase ambient noise levels in the vicinity of noise-sensitive receptors at buildout year 2013.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.10-2: Building facades would not be exposed to exterior noise levels exceeding 65 DBA CNEL and therefore interior noise levels would not exceed 45 dBA CNEL.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.10-3: Project implementation would result in long-term operation-related noise that would not exceed local standards.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.10-4: The project would not create groundborne vibration and groundborne noise.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.10-5: Project-related construction activities would result in temporary noise increases at the existing onsite and surrounding noise-sensitive receptors due to the length of the construction period, approximately three years.	Potentially Significant	10-1	The construction contractor shall properly maintain and tune all construction equipment to minimize noise emissions.	Significant and Unavoidable – Project Impact / Less Than Significant – Cumulative Impact
		10-2	The construction contractor shall fit all equipment with properly operating mufflers, air intake silencers, and engine shrouds no less effective than as originally equipped by the manufacturer.	
		10-3	The construction contractor shall locate all stationary noise sources (e.g., generators, compressors, staging areas) as far from off-site residential receptor locations as is feasible.	
		10-4	Construction activities, including haul trucks and deliveries, shall be limited between 7:00 AM to 7:00 PM Monday through Saturdays, except on federal holidays.	
		10-5	The project applicant shall post a sign, clearly visible on-site, with a contact name and telephone number of the project applicant's authorized representative to respond in the event of a noise complaint.	
		10-6	The construction contractor shall install temporary sound blankets at least six feet in height along the boundaries of the on-site residence.	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.11 POPULATION AND HOUSING			
5.11-1: Based on an average household size of 3.34, 307 units located on the project site would introduce approximately 1,025 new residents to the city of San Bernardino.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.12 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
5.12-1: The proposed project would introduce 307 residences and about 1,025 residents into a very high fire hazard severity zone in the San Bernardino City Fire Department service area, thereby increasing the requirement for fire protection facilities and personnel.	Potentially Significant	12-1 Prior to issuance of building permits, the developer shall participate on a fair-share basis in funding the continued operation and maintenance of the Verdemont Fire Station. A one-time fair-share contribution equivalent to the Community Facilities District Number 1033 "in-lieu fee" established by Resolution Number 2004-107 of the Mayor and Common Council would mitigate the long-term impact of the project on emergency services of the Fire Department. As an alternative, an irrevocable agreement to annex the project site to Community Facilities District Number 1033 would satisfy this obligation.	Less Than Significant
POLICE PROTECTION			
5.12-2: The proposed project would introduce new structures and residents into the San Bernardino Police Department's service boundaries, thereby increasing the requirement for police protection and personnel.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

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Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
SCHOOL SERVICES			
5.12-3: The proposed project would generate roughly 102 new elementary school students, 52 new middle school students, and 60 new high school students in the San Bernardino City Unified School District service area. Students generated by the project would increase enrollment at North Verdemont Elementary School, Cesar Chavez Middle School, and Cajon High School.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
LIBRARY SERVICES			
5.12-4: The proposed project would add roughly 1,025 residents to the project site, increasing the service needs for the Dorothy Inghram Branch Library.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.13 RECREATION			
5.13-1: The proposed project would include up to 307 residential dwelling units to the San Bernardino area, resulting in a subsequent increase in use of existing recreational facilities and a possible demand for additional facility development.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.14 TRANSPORTATION/TRAFFIC				
5.14-1: The proposed project would generate 3,149 average daily trips, 247 morning peak hour, and 333 evening peak hour trips to the project area, thereby contributing to existing and future unacceptable levels of service at the Palm Avenue/I-215 ramps intersections and at the Palm Avenue/Kendall Drive intersection.	Potentially Significant	14-1	If at the time combustible materials are placed on the project site the Palm Avenue/Kendall Drive intersection has not been improved, the project shall be responsible for funding and constructing the dual westbound left turn lane intersection improvements at Palm Avenue/ Kendall Drive. All improvements to this intersection must be completed to the satisfaction of the Director of Public Works/Civil Engineering prior to issuance of occupancy permits.	Less Than Significant
		14-2	The easterly (primary) project access road between Little League Drive and the project site shall be constructed and paved to meet the City of San Bernardino Fire Department's minimum standards prior to placement of combustible materials on the project site. The access road shall be designed and constructed to meet the City of San Bernardino Public Works/Engineering Division's design standards prior to issuance of occupancy permits. Concurrently, the segment of Little League Drive north of Meyers Road shall be improved to Public Works Department design standards.	
		14-3	The westerly (secondary) project access road shall be constructed and paved to meet the City of San Bernardino Fire Department's minimum standards prior to placement of combustible materials on the project site. The access road shall be designed and constructed to meet the City of San Bernardino Public Works/Engineering Division's design standards prior to the issuance of occupancy permits.	
		14-4	Prior to the issuance of grading permits, the project applicant shall prepare a construction traffic plan that shall be approved by the City of San Bernardino Public Works/Engineering Division. The construction traffic plan shall • Prohibit project construction traffic from using the Kendall Drive/Palm Avenue intersection during the morning peak hour (7:00 AM and 9:00 AM) and the evening peak hour (4:00 PM and 6:00 PM)	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Establish truck haul routes on the appropriate transportation facilities. • Provide Traffic Control Plans (for detours and temporary road closures) that meet the minimum Caltrans, City, and County criteria. • Minimize offsite road closures during the peak hours. • Keep all construction-related traffic onsite at all times.	
5.14-2: Project-related trip generation in combination with existing and proposed cumulative development would result in designated road and/or highways exceeding the San Bernardino Association of Governments' Congestion Management Plan service standards.	Potentially Significant	No funding program is currently available for the proposed Caltrans/SANBAG I-215 and I-15 freeway mainline improvements. No additional mitigation measures are available to reduce Impact 5.14-2.	Significant and Unavoidable
5.14-3: Project circulation improvements have been designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.14-4: The proposed project provides access for alternative transportation.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.15 UTILITIES AND SERVICE SYSTEMS				
5.15-1: Spring Trails would use 529 acre-feet per year and is included in the 2010 San Bernardino Regional Urban Water Management Plan projections. The project would require the construction of additional water distribution infrastructure, including reservoirs, pump stations, and water mainlines that are not part of a Capital Improvements Plan.	Potentially Significant	15-1	Occupancy permits may not be issued by the City until Phase II of the Verdemont infrastructure improvements is constructed. The proposed 20-inch transmission line in the 2300 zone shall be constructed in congruency with the extension of Meyers Road. Funding for the 2300-zone reservoir, pump station, and 20-inch transmission line in Meyers Road shall either be funded in full by the project applicant or through the San Bernardino Municipal Water Department's (SBMWD) capital improvements plan. If the Phase II infrastructure is funded by the CIP, the project applicant shall pay the developer impact fee as required by the SBMWD.	Less Than Significant
5.15-2: Development of the project site would require construction of new stormwater drainage systems and facilities that would meet regional water quality control board requirements.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.15-3: The wastewater flow of the proposed project would not exceed the full flow capacities of existing sewer lines or wastewater facilities; however, new onsite pipelines would need to be constructed to serve the project and a potential upgrade would be needed for the existing pipeline at Little League Drive.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant
5.15-4: The proposed project would be adequately served by the Mid-Valley and San Timoteo Sanitary landfills and would comply with AB 939.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.16 GREENHOUSE GAS EMISSIONS			
5.16-1: Project-related greenhouse gas emissions would significantly cumulatively contribute to global climate change impacts in California.	Potentially Significant	**Construction** 16-1 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Community Development Director that the project uses recycled materials for at least 5 percent of construction materials. Recycled materials may include salvaged, reused, and recycled content materials. Recycled and/or salvaged building materials shall be shown on building plans submitted to the City. 16-2 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Community Development Director that the project uses 20 percent locally manufactured and produced building materials, which are defined as materials manufactured or produced within 500 miles of the project. 16-3 Prior to the issuance of building permits, applicants for Spring Trails shall prepare a construction waste management plan to reduce construction debris and material by diverting at least 50 percent of the total of all project-related nonhazardous construction and debris from landfills to recycling or reuse operations (based on the C&D requirements of Section 6-3.602 of the City of Ontario Municipal Code). The construction waste management plan shall identify the amount of construction debris by type that would be generated and the maximum weight of each material type that can feasibly be diverted from landfills. 16-4 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Community Development Director that the project uses insulation with at least 75 percent recycled content, such as cellulose, newspaper, or recycled cotton. 16-5 Applicants for new development proposals in Spring Trails shall require the construction contractor to provide carpooling for workers to and from the work site on days that construction activities require 200 or more workers. These	Significant and Unavoidable (transportation/vehicle related) – Cumulative Impact Less Than Significant (area sources, energy use, and waste)

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		requirements shall be demonstrated to the Community Development Director prior to the issuance of grading permits and shall be noted on the grading plan cover sheet and discussed at all pregrade meetings.	
		Operation	
		Energy Efficiency	
		16-6 Prior to the issuance of a building permit, residential development plans shall be required to demonstrate that the overall project exceeds 2008 Building and Energy Efficiency Standards (Title 24) for energy efficiency by 15 percent. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, and utilizing natural ventilation. Other techniques include installing insulation (high R value) and radiant heat barriers, compact fluorescent and/or light emitting diode bulbs, low-e window glazing or double-paned windows, energy-efficient appliances (e.g., Energy Star appliances), cool roofs, and cool pavement.	
		16-7 Applicants shall provide all homeowners with information regarding energy-efficiency rebate programs offered by utility providers and government agencies.	
		Water Conservation and Efficiency	
		16-8 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Community Development Director that all toilets, urinals, sinks, showers, and other water fixtures installed onsite shall be ultra-low-flow water fixtures that exceed the Uniform Plumbing Code. Examples are: 1.28 average gallons per flush high efficiency toilets, 2 gallon per minute (gpm) efficient bathroom faucets, 2.2 gpm efficient kitchen faucets, and 2.2 gpm efficient shower heads.	
		16-9 Mulch planting beds and apply compost and environmentally friendly fertilizers to promote healthy topsoil, maximize plant growth, and reduce plant	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		replacement in the Spring Trails community parks and landscaping. This also reduces the need for longer or more frequent irrigation run times. *Forest Resources* 3-13 Significant tree resources that are removed from the site during project development shall be replaced at a 1:1 ratio or at the exchange ratios specified below. Significant tree resources are defined as any native or nonnative ornamental tree—excluding species of the *Eucalyptus* genus—that is healthy, structurally sound, and over 20 feet in height. Prior to the issuance of grading permits, a certified arborist shall conduct an inventory of all significant trees within the development footprint. This inventory shall be used to determine the number and types of significant trees that will be impacted and the subsequent replacement quantities. The number of replacement trees shall be, at a minimum, 220 trees. Should the aforementioned inventory determine that a greater number of significant trees will be impacted, then that quantity shall be used in determining replacement quantities. The following exchange ratios shall be used: 1) one 36-inch box tree is equivalent to one replacement tree; 2) five 15-gallon trees are equivalent to one replacement tree; 3) ten 5-gallon trees are equivalent to one replacement tree; and 4) fifteen one-gallon trees are equivalent to one replacement tree. During the development of the project, the project applicant shall incorporate the recommendations as set forth in the project arborist report (Integrated Urban Forestry 1998). A certified arborist shall be retained at the developer's expense to oversee the implementation of these requirements and to specify other requirements as deemed appropriate. The measures to be followed include, but are not limited to, specified protocols for the following: 1) the removal of nonnative trees from the site; 2) the removal and transplantation, when feasible, of structurally sound and healthy native trees to other areas of the project site; 3) the installation of tree protection barriers on all trees to be preserved that are within the reach of vehicles and equipment; 4) tree	

Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		protection training of construction personnel by a certified arborist; 5) irrigation of trees where the natural water supply is interrupted or diminished or where protected trees may require additional water to endure construction-induced stresses; 6) subsequent replacement of any trees that are damaged or have not survived transplantation and relocation; and 7) implementation of the tree replacement plan, as outlined in the first paragraph of this measure. This measure shall be implemented to the satisfaction of the Community Development Director.	
5.16-2: The proposed project would not conflict with the California Air Resources Board's Scoping Plan.	Less Than Significant	No mitigation measures are necessary.	No mitigation measures are necessary.
5.17 FOREST RESOURCES			
5.17-1: The proposed project site is not considered forest land, timberland or zoned as timberland production.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant
5.17-2: The proposed project would remove 220 native trees, requiring replacement of trees per the city's tree ordinance.	Potentially Significant	Mitigation Measure 3-13 from Section 5.3, *Biological Resources*, also applies to impacts to forest resources.	Less Than Significant

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Draft Environmental Impact Report (DEIR) has been prepared to satisfy CEQA, as set forth in the Public Resources Code Section 21000, et seq., and the State CEQA Guidelines, 14 California Code of Regulations, Section 15000, et seq. The Environmental Impact Report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth-inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

Pursuant to CEQA Section 21067, the lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." The City of San Bernardino has the principal responsibility for approval of the Spring Trails Specific Plan project. For this reason, the City of San Bernardino is the CEQA lead agency for this project.

The intent of the DEIR is to provide sufficient information on the potential environmental impacts of the proposed Spring Trails Specific Plan to allow the City of San Bernardino to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the City are described later in Section 4.3.3 (Project Approvals).

This DEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code Section 21000 et seq.)

- State Guidelines for the Implementation of the CEQA of 1970 (herein referenced as CEQA Guidelines), as amended (California Code of Regulations Sections 15000 et seq.)

The overall purpose of this DEIR is to inform the lead agency, responsible agencies, decision makers, and the general public of the environmental effects of the development and operation of the proposed Spring Trails project. This DEIR addresses the potential environmental effects of the project, including effects that may be significant and adverse, evaluates a number of alternatives to the project, and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The City of San Bernardino determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) and Initial Study on November 24, 2009 (see Appendix A). Comments received during the public review period, which extended from November 24, 2009, to December 23, 2009, are contained in Appendix A. The comments from agencies and residents and the notes taken during the scoping meeting, held on December 14, 2009, are summarized on Table 2-1.

The NOP process is used to help determine the scope of the environmental issues to be addressed in the DEIR. Based on this process and the Initial Study for the project, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered potentially significant are addressed in this DEIR. Issues identified as less than significant or no impact are not addressed beyond the discussion contained in the Initial Study. Refer to the Initial Study in Appendix A for discussion of how these initial determinations were made.

Table 2-1
NOP Comment Summary

Comment Type	*Comment Summary*	*Issue Addressed in:*
California Natural Resource Agency, Department of Fish and Game (letter 12/22/2009)		
Biological Resources	• Updated technical reports should be used for environmental analysis. • The EIR should: o Ensure mitigation measures are implemented prior to construction o Discuss project's impacts on San Bernardino National Forest Land o Discuss human-wildlife interface impacts o Discuss the biological impacts of fire management o Assess the project's impacts on jurisdictional waters o Assess the project's impacts on sensitive species • A California Endangered Species Act (CESA) must be obtained if the project will impact any species listed under the CESA. • Consultation with CDFG and the issuance of a Streambed Alteration Agreement must be obtained prior to project approval and construction.	Section 5.3, *Biological Resources*.
Alternatives	• Include a range of alternatives to reduce biological resource impacts	7. *Alternatives*
Center for Biological Diversity (letter 12/17/2009)		
Aesthetics	• Project-generated light and glare must be evaluated in the EIR.	5.1, *Aesthetics*
Air Quality	• The EIR must evaluate the project's potential to impair attainment goals of the air basin, especially the construction-related impacts of hauling soil from site.	5.2, *Air Quality*
Biological Resources	• Independent biological resource surveys should be conducted following established protocols. • Mitigation should prioritize avoidance, followed by onsite habitat replacement, followed by onsite restoration, followed by offsite mitigation. • The EIR must assess: o Impacts to sensitive species and habitats should be clearly identified. o All direct, indirect, and cumulative impacts to biological resources. o Invasive exotic species and the potential for their introduction into surrounding habitats. o The effects of vegetation management and fuel modification. o The effects of the project on wildlife movement and wildlife corridors.	5.3, *Biological Resources*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Greenhouse Gas Emissions	• The EIR should: o Evaluate the project's net contribution of greenhouse gas emissions. o Consider specific mitigation measures to reduce greenhouse gas emissions from mobile sources. o Evaluate the project-generated greenhouse gas emissions related to water and energy use. o A "carbon neutral" alternative should be evaluated in the alternatives analysis.	5.16, *Greenhouse Gas Emissions* Alternatives to reduced carbon emissions are analyzed in Section 7, *Alternatives*.
County of San Bernardino, Department of Public Works (letter 12/7/2009)		
Utilities and Service Systems	• The Department of Public Works would like to receive a copy of the Draft EIR and will comment on the Draft EIR during the public review period.	N/A
Devore Rural Protection Association (letter 1/3/2010)		
Biological Resources	• The commenter is concerned that the project will create serious impacts for wildlife, plants, and sensitive habitat types and that it will disrupt wildlife movement.	5.3, *Biological Resources*
Cultural Resources	• Local tribe representatives should be involved in cultural studies of the site and all cultural, archaeological, and historical sites need to be identified and preserved.	5.4, *Cultural Resources*
Geology and Soils	• The commenter is concerned about earthquake impacts and liability for loss of life and property during an earthquake.	5.5, *Geology and Soils*
Hazards and Hazardous Materials	• The commenter is concerned about the site's susceptibility to fires.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The commenter is concerned that the loss of natural drainage control could cause flooding over the capacity of the control system.	5.7, *Hydrology and Water Quality*
Transportation and Traffic	• The commenter is concerned about traffic congestion and whether the cul-de-sacs would impede direct, quick access for firefighters.	5.14, *Traffic and Transportation,* 5.6, *Hazards and Hazardous Materials*
Utilities and Service Systems	• The City's water infrastructure would have to be expanded to serve the site, and water pressure may be lost during a fire.	5.11, *Utilities and Service Systems*
Department of Toxic Substances Control (letter 12/10/2009)		
Hazardous Materials	• The EIR should: o Identify and assess the current and historical uses of the project site. o Identify needed investigation or remediation. o Summarize findings of any investigations (Phase I and II Environmental Site Assessments). o Conduct site investigation and/or remedial actions when agricultural-related activities may have contaminated the site.	5.6, *Hazards and Hazardous Materials*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
City of San Bernardino Fire Department (letter 11/19/2009)		
Fire Hazards	• The development of the project site must follow the Fire Department's standard requirements, as they are indicated on the checklist. • The Fire Protection Plan has been accepted in concept only. A final plan must be approved by the Fire Department prior to project approval. • All structures shall comply with the building standards of the City's Municipal Code (Chapter 15.10) and California Building Code (Chapter 7A).	5.6, *Hazards and Hazardous Materials*
Local Agency Formation Commission, San Bernardino County (letter 1/5/2010)		
Land Use/Annexation	• Existing and proposed land use designations and jurisdictional boundaries are not clearly identified in the Initial Study and the commenter has suggestions to make these more obvious in the text and in Figure 6. • The potential inclusion of portions of the unincorporated SOI that are not part of the project site must be evaluated as potential future impacts in the EIR or with a subsequent environmental analysis in the future. The EIR should compare the existing county land use designations with the proposed General Plan and/or Specific Plan designations.	3.0, *Project Description*, 5.8, *Land Use and Planning*
Hazards and Hazardous Materials	• The detachment of the area being annexed to the City from the San Bernardino County Fire Protection District and its Valley Service Zone must be identified and discussed in the EIR. • The EIR should describe the removal of the State Responsibility Area designation of the site, which would occur with annexation of the area to the City. Whether the City would maintain a fire protection agreement with the State Department of Forestry should also be described in the EIR.	5.6, *Hazards and Hazardous Materials*
Native American Heritage Commission (letter 12/9/2009)		
Cultural/Archaeological Resources	• The lead agency shall perform a site survey, if required, and provide the findings in a professional report. • The lead agency shall contact the NAHC to obtain a Sacred Lands File Check and an appropriate list of Native American Contacts for consultation.	5.4, *Cultural Resources*
Regional Water Quality Control Board (letter 12/31/2009)		
Biological Resources	• Crossings over drainages should use bridges or arched, open-bottomed culverts to allow for riparian wildlife movement.	5.3, *Biological Resources*
Hydrology and Water Quality	• The hydrological study for the proposed project should include a jurisdictional study and delineation. • The commenter requests that the lead agency evaluate proposed crossings and alternatives to avoid dredge, fill, and other disturbances to the project site drainage. • The use of the retention basins on the project site would concentrate the distribution of recharge instead of allowing natural sheetflow and stream infiltration. o The commenter has provided the Ahwahnee Water Principles for Resource Efficient Land Use, which encourages a community-wide system for protecting water quality standards.	5.7, *Hydrology and Water Quality* and 5.3, *Biological Resources*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
San Bernardino National Forest Front County Ranger District (Forest Service, US Department of Agriculture) (letter 12/23/2009)		
Biological Resources	• To minimize impacts to biological resources, the commenter recommends: o The reduction of net loss of important habitats, clear identification of direct, indirect, and cumulative impacts to biological resources. o Protection of the habitat linkages (Cable Canyon). o The minimization of nighttime lighting. o Project proponent management and funding of long-term management and nonnative invasive species removal plans. o The use of native plants onsite.	5.1, *Aesthetics* and 5.3, *Biological Resources*
Cultural Resources	• The commenter requests copies of past and currently proposed cultural survey reports completed for the proposed project.	An updated Cultural Resources report is included as DEIR Appendix E, summarizing all previous studies conducted for the site.
Hazards and Hazardous Materials	• 100' buffers of fuel modification and green-belting are not available activities on forest land. • The commenter recommends having adequate defensible space between the forest boundary and the proposed project and to incorporate access areas.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• National forest land will not be available for erosion control. • New development must be set back from the national forest boundary by at least 100' to prevent erosion on national forest land.	5.7, *Hydrology and Water Quality*5.8, *Land Use and Planning*, and 3.0, *Project Description*
Transportation and Traffic	• SBNF has concerns about unauthorized public use of the Forest (trespassing, off-road vehicles, formation of unofficial trails) and recommends that the lead agency should work with the commenter to avoid conflicts over access (for new development and existing national forest access points). • SBNF is requesting that national forest boundary should be clearly defined, insurgence of any type of illegal occupation be impeded, and conflicts between humans and wildlife be reduced.	5.8, *Land Use and Planning*, 5.14, *Transportation and Traffic*
Utilities and Service Systems	• No water infrastructure may be developed on national forest land. • Water–efficient techniques are encouraged (such as xeric landscaping and gray water systems)	5.15, *Utilities and Service Systems*
San Bernardino Valley Audubon Society (letter 12/13/2009)		
No comment at this time.	• The commenter has general concerns on aesthetics, air quality, biological resources, geology and soils, hazards and hazardous materials, hydrology, land use and planning, public services, transportation and traffic, and utilities and service systems. The commenter will be providing detailed comments about these concerns on the Draft EIR.	N/A

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
South Coast Air Quality Management District (letter 11/30/2009)		
Air Quality	• The lead agency should identify all potential air quality impacts resulting from construction and operational activities of the proposed project. • SCAQMD's local and regional significance thresholds for air pollutants should be used for EIR analysis.	5.2, *Air Quality*
San Bernardino Municipal Water Department (letter 11/19/2009)		
Water Infrastructure	• The San Bernardino Municipal Water Department has provided the standard requirements that apply to the proposed project.	5.15, *Utilities and Service Systems*
Potter, Arlean C., Resident (letter 1/7/2010)		
Hydrology and Water Quality	• After heavy rains, the bridge on Meyers Road east of the proposed project site requires repairs. Siltation also has to be removed from the road.	5.7, *Hydrology and Water Quality*
Land Use	• The commenter is concerned that the lot size and density of development is inappropriate for the area.	5.8, *Land Use and Planning*
Transportation and Traffic	• The commenter is concerned about traffic conditions/hazards, especially at the intersection of Little League Drive and Meyers Road, and whether the proposed project would have adequate space for emergency access.	5.14, *Traffic and Transportation*
Utilities and Service Systems	• The commenter has concerns about water pressure during wildfires and the adequacy of existing electrical power infrastructure.	5.15, *Utilities and Service Systems,* 5.6, *Hazards and Hazardous Materials*
Mau, Buck, Resident (letter 1/5/2010)		
General	• The commenter is concerned that property taxes will increase.	This issue is outside the realm of the California Environmental Quality Act (CEQA) and this EIR.
Geology and Soils	• The commenter has general concerns about earthquake risks.	5.6, *Geology and Soils*
Hazards and Hazardous Materials	• The commenter has general concerns about the fire impacts.	5.7, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The commenter uses a private well for water supply and is concerned about the impacts the project would have on the well.	5.7, *Hydrology and Water Quality*
Land Use	• The commenter is concerned that the density is inappropriate.	5.8, *Land Use and Planning*
Transportation and Traffic	• The secondary access road would only allow emergency access to Meyers Road. The commenter wants to know how traffic will be kept off Meyers Road, such as with a gate.	5.14, *Transportation and Traffic*
McDaniel, Gayle, Resident (letter 12/26/2009)		
Historical Resources	• The commenter states the importance of locating and preserving the historical gravesite of the Meyer family.	5.4, *Cultural Resources*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Mitchell, Kevin, Resident (email 1/8/2010 and letter 12/18/2009)		
Biological Resources	• The proposed project site is inhabited by a variety of wildlife that may conflict with humans and the proposed development.	5.3, *Biological Resources*
Cultural Resources	• The location of Meyer family gravesite should be verified and preserved.	5.4, *Cultural Resources*
Hydrology and Water Quality	• The commenter and other local residents are concerned about the condition of water quality in adjacent wells after the proposed project is completed. • The commenter is concerned that the existing and proposed engineering will not be capable of handling the flow, especially in areas of the 100-year flood zone.	5.7, *Hydrology and Water Quality*
Land Use	• The commenter is concerned that the proposed zoning is inappropriate for the area and that the lots should maintain a density of one unit per acre. • The proposed project site cannot be prezoned without the City engineering and planning departments creating a master plan. • The commenter proposes breaking the proposed project into three components with separate approval processes. • The Hillside Management Overlay District should be applied to entire site, not just the bottom half. • The proposed project cuts off the access to existing lots (Wendy Ranch Road easement).	5.8, *Land Use and Planning*
Transportation and Traffic	• The primary and secondary access roads must be completed prior to site grading. • The proposed secondary access road should exit to Devore to avoid the creation of a loop effect (residents would use the Frontage Road to loop back to Little League to get on the I-215 freeway). • Access roads should have three to four lanes with a 12-foot shoulder. • Cul-de-sacs should be large enough for adequate emergency access.	5.14, *Traffic and Transportation*
Utilities and Service Systems	• The lead agency should ensure that infrastructure able to support the proposed project is implemented prior to site development and that standard PSIs are maintained.	5.15, *Utilities and Service Systems*
Kelley, Mike and Laurie (email 12/17/2009 and letter 11/28/2009)		
General	• Offsite impacts are not being addressed in the Initial Study.	Offsite infrastructure improvements that would be needed by the proposed project are discussed in Section 5.15, *Utilities and Service Systems* (water infrastructure).
Land Use	• The secondary access road cuts through the property of the commenters and divides an established community. No land acquisition by the City has been finalized.	5.8, *Land Use and Planning* The project development depends on the acquisition of road right-of-way that would be used for the proposed project. Road right-of-ways would be acquired prior to project development.

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Transportation and Traffic	• The commenter is concerned with traffic congestion at North Verdemont Elementary School (Meyers Road and Little League Drive). The potential impacts of vehicular emissions on the students at this school should be addressed in the EIR.	5.14, *Transportation and Traffic* Air quality impacts of traffic at this intersection are addressed in Section 5.2, *Air Quality*
Kaplan, Lynette, Resident (letter 12/28/2009)		
Air Quality	• The project-generated traffic traveling past the intersection of Meyers Road and Little League Drive would impact sensitive receptors at the school and community facilities.	5.2, *Air Quality*
Biological Resources	• The commenter is concerned about impacts to sensitive plant and animal species, human-wildlife interaction, and trespassing into the San Bernardino National Forest.	5.3, *Biological Resources*
Hazards and Hazardous Materials	• The commenter has concerns regarding fire: o High winds cause hazardous fire conditions. o Access is inadequate for efficient evacuation and emergency access during fires. o Vegetation buffers (as part of the Fire Protection Plan) need to be maintained. • Wind would be a problem during fires and construction and it can cause erosion. All wind impacts should be mitigated in the EIR.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The existing shallow wells surrounding the project site may be contaminated by pollutants in the project site runoff. • The stormwater runoff from the site could cause substantial flooding.	5.7, *Hydrology and Water Quality*
Land Use	• The zoning for the project site should not average the density across the entire site. Actual density should be 1 unit per acre.	5.8, *Land Use*
Recreation	• Detention basins should not be treated as parks because this becomes a safety hazard.	5.13, *Recreation*
Transportation and Traffic	• The traffic study needs to account for cumulative project traffic contributions. • The project proponent should repair any roads damaged by construction traffic, and offsite access roads must be constructed prior to the onsite grading. • The commenter is concerned about how public traffic will be kept off of Meyers Road via the secondary access road. • After project completion, onsite parking should not be allowed on the streets/cul-de-sacs because this would impair emergency access.	5.14, *Traffic and Transportation*
Utilities and Service Systems	• The commenter is concerned about water pressure, especially during fires, and the ability of reservoirs and pipelines to withstand an 8.5 earthquake.	5.15, *Utilities and Service Systems*
Lyman, Andy and Laura (letter 12/23/2009)		
Biological Habitat	• The EIR should address and mitigate the potential impacts on biological resources.	5.3, *Biological Resources*
Cultural Resources	• The gravesite of the Meyers family must be identified in the EIR and preserved as part of the proposed project.	5.4, *Cultural Resources*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Hazards and Hazardous Materials	• The area was previously used as a military practice range. The commenters are concerned about encountering underground explosives during site construction.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• Existing private water wells in proximity to the proposed project may be impacted due to the infiltration of onsite polluted water runoff. • The commenters want to be assured that septic tanks would not be used on the project site.	5.7, *Hydrology and Water Quality*
Land Use	• The proposed density is inappropriate for this area. The density should be one unit per lot.	5.8, *Land Use and Planning*
Transportation and Traffic	• The commenters are concerned about the emergency access during fires or earthquakes.	5.14, *Transportation and Traffic*
Utilities and Service Systems	• The commenters are concerned that the water infrastructure is inadequate for fire protection.	5.15, *Utilities and Service Systems,* 5.6, *Hazards and Hazardous Materials*
Evans, Marlene, Resident (12/21/2009)		
General	• The commenter is concerned about where the exported soil will be taken and how the lead agency will control the dust from these trucks. • The commenter is concerned about construction site maintenance and where the construction water trucks will get water to control the construction debris without lowering local water pressure.	3.0, *Project Description* (project phasing, including construction hauling) Dust control is discussed in 5.2, *Air Quality*. Improvements to offsite water infrastructure would be developed prior to project construction, as discussed in 5.15, *Utilities and Service Systems*.
Biological Resources	• The commenter is concerned about the impacts the proposed project would have on the existing wildlife in the area and about how invasive species would be controlled at the detention basins.	5.3, *Biological Resources*
Hazards and Hazardous Materials	• The commenter has concerns about having adequate emergency access to the project area during wildfires, how wind would be controlled during wildfires, how the electrical power would be maintained during a fire, and how the greenbelt/fire buffers will be maintained.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The commenter is concerned about water well contamination from infiltration of onsite runoff into the groundwater supply of adjacent shallow wells.	5.7, *Hydrology and Water Quality*
Land Use and Planning	• The commenter has concerns about the proposed density of the project site and believes the lots should be one unit per acre. • The National Forest land cannot be used for buffering of fires.	5.8, *Land Use and Planning*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Recreation	• The commenter is concerned about the use of detention basins as parks (safety issues).	5.13, *Recreation*
Transportation and Traffic	• The commenter is concerned about cumulative traffic impacts, how the site will be accessed during construction, and how project residents would be kept off Martin Ranch Road via the secondary access road by a gate. • The commenter is also concerned about how on-street parking would impair emergency access.	5.14, *Traffic and Transportation*
Utilities and Service Systems	• The commenter is concerned about breakages and seepage from onsite sewer lines.	5.15, *Utilities and Service Systems*
O'Neill, Stephen, Judy, and Jennifer, Residents (letter – no date)		
General	• The commenters are concerned about the need for updated technical studies and information and not letting the EIR rely on old research for the project site.	5.6, *Geology and Soils*
Hazards and Hazardous Materials	• The fire buffers/greenbelt zones must be maintained. The commenter is concerned about how this will be managed.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The commenter is concerned about the water quality of local shallow wells surrounding the project site.	5.7, *Hydrology and Water Quality*
Land Use	• The proposed project should maintain the density of one unit per acre.	5.8, *Land Use and Planning*
Transportation and Traffic	• The commenters are concerned about traffic impacts due to congestion. • The emergency access may be impaired by on-street parking in the cul-de-sacs.	5.14, *Transportation and Traffic*
Utilities and Service Systems	• Additional water structure will be needed to serve the site. The commenters are concerned about how the additional infrastructure will be paid for.	5.15, *Utilities and Service Systems*
Kirtley, Patricia and Troy, Residents (letter 12/22/2009)		
General	• The commenter is concerned about where the exported soil will be taken and how the lead agency will control the dust from these trucks. • The commenter is concerned about construction site maintenance and where the construction water trucks will get water to control the construction debris without lowering local water pressure.	3.0, *Project Description* (project phasing, including construction hauling) Dust control is discussed in 5.2, *Air Quality*. Improvements to offsite water infrastructure would be developed prior to project construction, as discussed in 5.15, *Utilities and Service Systems*.
Biological Resources	• The commenter is concerned about the impacts the proposed project would have on the existing wildlife in the area and about how invasive species would be controlled at the detention basins.	5.3, *Biological Resources*

Table 2-1
NOP Comment Summary

Comment Type	Comment Summary	Issue Addressed in:
Hazards and Hazardous Materials	• The commenter has concerns about having adequate emergency access to the project area during wildfires, how wind would be controlled during wildfires, how the electrical power would be maintained during a fire, and how the greenbelt/fire buffers will be maintained.	5.6, *Hazards and Hazardous Materials*
Hydrology and Water Quality	• The commenter is concerned about water well contamination from infiltration of onsite runoff into the groundwater supply of adjacent shallow wells.	5.7, *Hydrology and Water Quality*
Land Use and Planning	• The commenter has concerns about the proposed density of the project site and believes the lots should be one unit per acre. • The national forest land cannot be used for buffering of fires.	5.8, *Land Use and Planning*
Recreation	• The commenter is concerned about the use of detention basins as parks (safety issues).	5.13, *Recreation*
Transportation and Traffic	• The commenter is concerned about cumulative traffic impacts, how the site will be accessed during construction, and how project residents would be kept off Martin Ranch Road via the secondary access road by a gate. • The commenter is also concerned about how on-street parking would impair emergency access.	5.14, *Traffic and Transportation*
Utilities and Service Systems	• The commenter is concerned about breakages and seepage from onsite sewer lines.	5.15, *Utilities and Service Systems*
Meyer, Vicki, Resident (letter 12/22/2009)		
Cultural and Historical Resources	• The commenter is concerned about the impacts the proposed project would have on the gravesite of the Meyers family and requests for the location of this gravesite to be identified in the EIR and protected as part of the proposed project.	5.4, *Cultural Resources*

2.3 SCOPE OF THIS DEIR

Based upon the Initial Study and Environmental Checklist Form, the City of San Bernardino staff determined that a DEIR should be prepared for the proposed project. The scope of the DEIR was determined based upon the City of San Bernardino's Initial Study, comments received in response to the NOP, and comments received at the scoping meeting conducted by the City of San Bernardino. Pursuant to Sections 15126.2 and 15126.4 of the State CEQA Guidelines, the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information contained in the Project Description establishes the basis for analyzing future project-related environmental impacts. However, further environmental review by the City may be required as more detailed information and plans are submitted on a project-by-project basis.

2.3.1 Impacts Considered Less Than Significant

As determined by the City of San Bernardino in the Initial Study, one issue was determined to be less than significant:

- Agriculture Resources

2.3.2 Potentially Significant Adverse Impacts

Sixteen environmental factors have been identified as potentially significant impacts if the proposed project is implemented. These factors are:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Forest Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Services Systems

2.3.3 Unavoidable Significant Adverse Impacts

This DEIR identifies three significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. If the City of San Bernardino, as the lead agency, determines that unavoidable significant adverse impacts would result from the project, the City must prepare a "Statement of Overriding Considerations" before it can approve the project. A Statement of Overriding Considerations states that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits of the project outweigh the adverse effects and, therefore, the adverse effects are considered to be acceptable. The impacts that were found in the DEIR to be significant and unavoidable are:

- Air Quality
- Noise
- Greenhouse Gas Emissions (vehicle emissions)
- Transportation and Traffic (freeway segments identified in the congestion Management Plan)

2.4 INCORPORATION BY REFERENCE

The following documents are incorporated by reference in this DEIR, consistent with Section 15150 of the State CEQA Guidelines, and are available for review at the City of San Bernardino, 300 North "D" Street, San Bernardino.

- *City of San Bernardino General Plan* (adopted November 2005)

- *County of San Bernardino General Plan* (adopted March 2007; available at San Bernardino County libraries and San Bernardino County Land Use Services Department offices)

- *City of San Bernardino Municipal Code* (adopted 1998, last revised October 7, 2009)

- *City of San Bernardino Development Code* (adopted May 1991, last revised February 2007)

2.5 FINAL EIR CERTIFICATION

This DEIR is being circulated for public review for a period of 45 days. Interested agencies and members of the public are invited to provide written comments on the DEIR to the City of San Bernardino address shown on the title page of this document. Upon completion of the 45-day review period, the City will review all written comments received and prepare written responses for each comment. A Final EIR (FEIR) will then be prepared incorporating all of the comments received, responses to the comments, and any changes to the DEIR that result from the comments received. This FEIR will then be presented to the City for potential certification as the environmental document for the project. All persons who commented on the DEIR will be notified of the availability of the FEIR and the date of the public hearing before the City.

The DEIR is available to the general public for review at:

- City Hall, 300 North "D" Street, San Bernardino
- San Bernardino Public Library, 555 West 6th Street, San Bernardino

An electronic version of the DEIR is also available on the City's website (http://www.ci.san-bernardino.ca.us/).

2.6 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that agencies adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring Program for the Spring Trails Specific Plan will be completed as part of the Final EIR and will be completed prior to consideration of the project by the San Bernardino Mayor and Common Council.

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3. Project Description

As described in detail in this section, the Spring Trails Specific Plan proposes development of 307 single-family lots within a 352.8-acre site situated within an unincorporated area of the foothills of the San Bernardino Mountains. The proposed development footprint would encompass approximately 68 percent of the project site, including 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) would remain in natural open space.

3.1 PROJECT LOCATION

As shown in Figure 3-1, *Regional Location*, Spring Trails is within unincorporated San Bernardino County on the northern edge of the City of San Bernardino and in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and the junction of Interstate 215 (I-215) and I-15. Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side.

As shown in Figure 3-2, *Local Vicinity*, Spring Trails is approximately one-third mile northwest of the intersection of Meyers Road and Little League Drive. Primary access is from a new roadway extending from Little League Drive and secondary access via a new road extending south and connecting to the frontage road along I-215. Freeway access is from the Palm Avenue interchange and the Glen Helen Parkway/Devore Road interchange.

3.2 PROJECT BACKGROUND

The project site has previously been proposed and evaluated for residential development. A Draft EIR was prepared for this previous development application (known as Martin Ranch) and was publicly circulated December 2002. Comments received on the Draft EIR related specifically to traffic impacts and access to the project site, which required the applicant to identify new access roads to serve the site. As a result, the project and the Draft EIR were revised and recirculated for public review in July 2006. Numerous public comments were received on the revised plan, particularly regarding the primary and secondary road alignments and their traffic impacts on Meyers Road and on the community of Devore. The project as proposed was abandoned, and the EIR was not certified.

Several access alternatives were studied by the project applicant, culminating in the currently proposed access roads, which avoid the concerns of the previous project. As currently proposed, primary access to the project would be provided via a new roadway extended from the existing terminus of Little League Drive to the southeast of the project site. A secondary access road would be extended directly south of the project site and connect to the frontage road along I-215. In comparison to the previous project, the currently proposed design also reduces the number of proposed residential lots from 329 to 307 single-family lots, in addition to natural and controlled open space areas and hiking trails.

The project site has historically been exposed to wildfire. In November 1980, the Panorama Fire burned the site, leaving only the mature eucalyptus trees and vegetation in the canyon areas. In the fall of 2003, the Verdemont/Devore area, including the project site, was burned by the Old Fire that started in Old Waterman Canyon in north San Bernardino and traveled west to the I-15/I-215 interchange, immediately west of the

project vicinity. The entire Spring Trails site was burned, with the exception of the extreme northern portion of Cable Canyon, altering the conditions on the site. In 2007, wildfires affected these same areas.

Due to the project redesign and changes in environmental conditions since the original EIR, the City determined that a revised EIR be prepared and recirculated for the proposed project.

Because of the substantial project changes, the City has decided to treat Spring Trails Specific Plan as a new project. Although comments on the previous two Martin Ranch Specific Plan EIRs were taken into consideration when developing the Spring Ranch Specific Plan and this EIR, these comments are not considered applicable for this EIR. Reviewers of the 2002 and 2006 Martin Ranch EIRs must submit new comments on this EIR, even in cases where the information has not changed from the 2002 or 2006 Martin Ranch Specific Plan EIRs.

3.3 STATEMENT OF OBJECTIVES

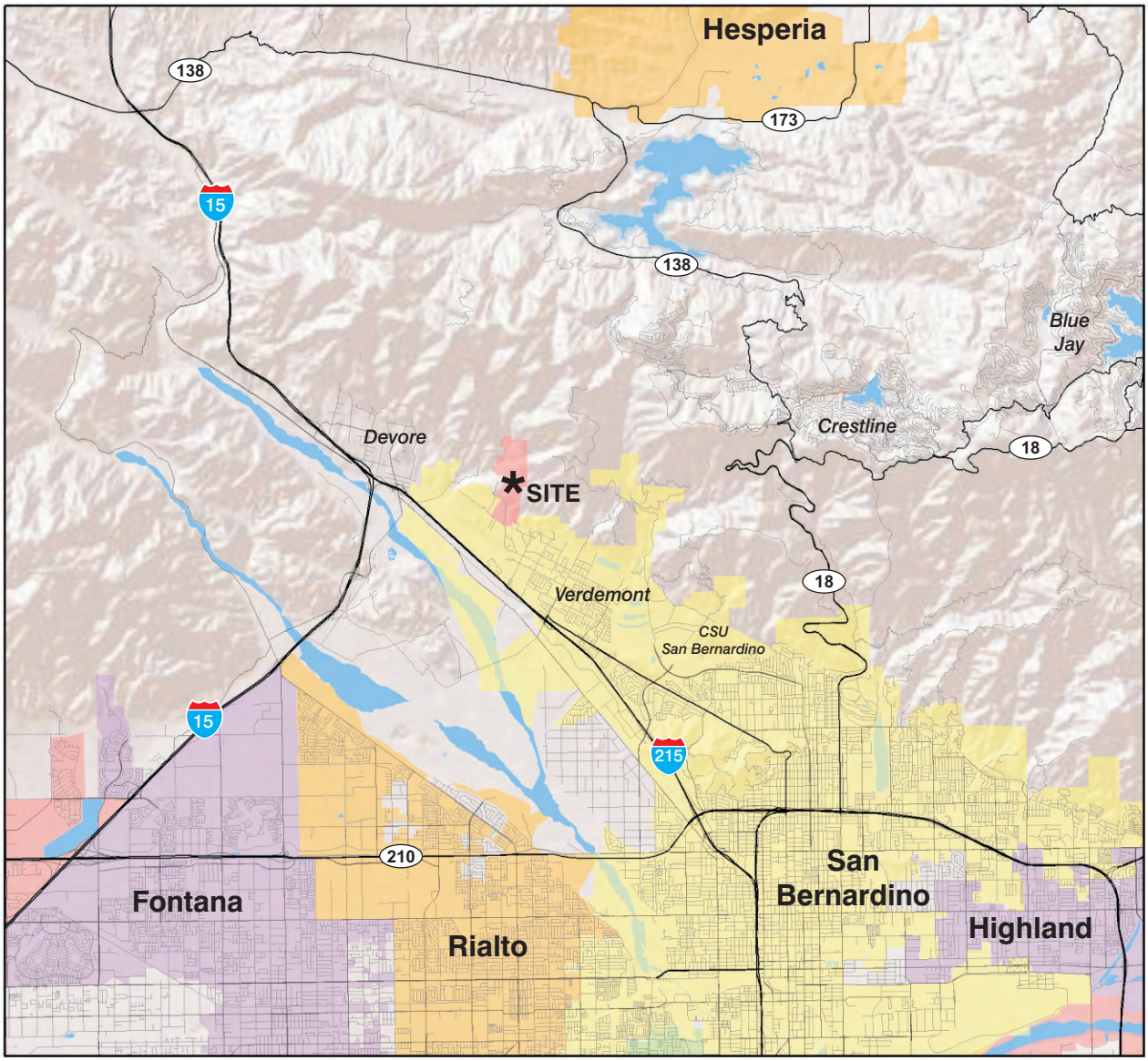
The following objectives have been established for the Spring Trails project and will aid decision makers in their review of the project and associated environmental impacts:

- Provide for the development of the site consistent with the City's General Plan for this area within its Sphere of Influence.
- Develop a high-quality, low density residential community that optimizes the unique characteristics of the project site, including maximizing view opportunities.
- Assure adequate roadway access to the development while preserving the integrity of surrounding communities.
- Enhance City trail facilities by expanding the system and integrating project-site trails with existing and proposed hiking, equestrian, and bicycle trails within the surrounding community.
- Comply with policies for land use development within and adjacent to the San Bernardino National Forest.
- Minimize the development footprint and maximize available open space areas.
- Design a safe community cognizant of natural conditions, including wildland fires, flooding, and seismic hazards.
- Minimize environmental impacts associated with construction of improvements and long-term operation of the new community.
- Create an attractive, viable project, and realize a reasonable return on investment.

3.4 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700" (14 Cal. Code of Reg. 15378[a]).

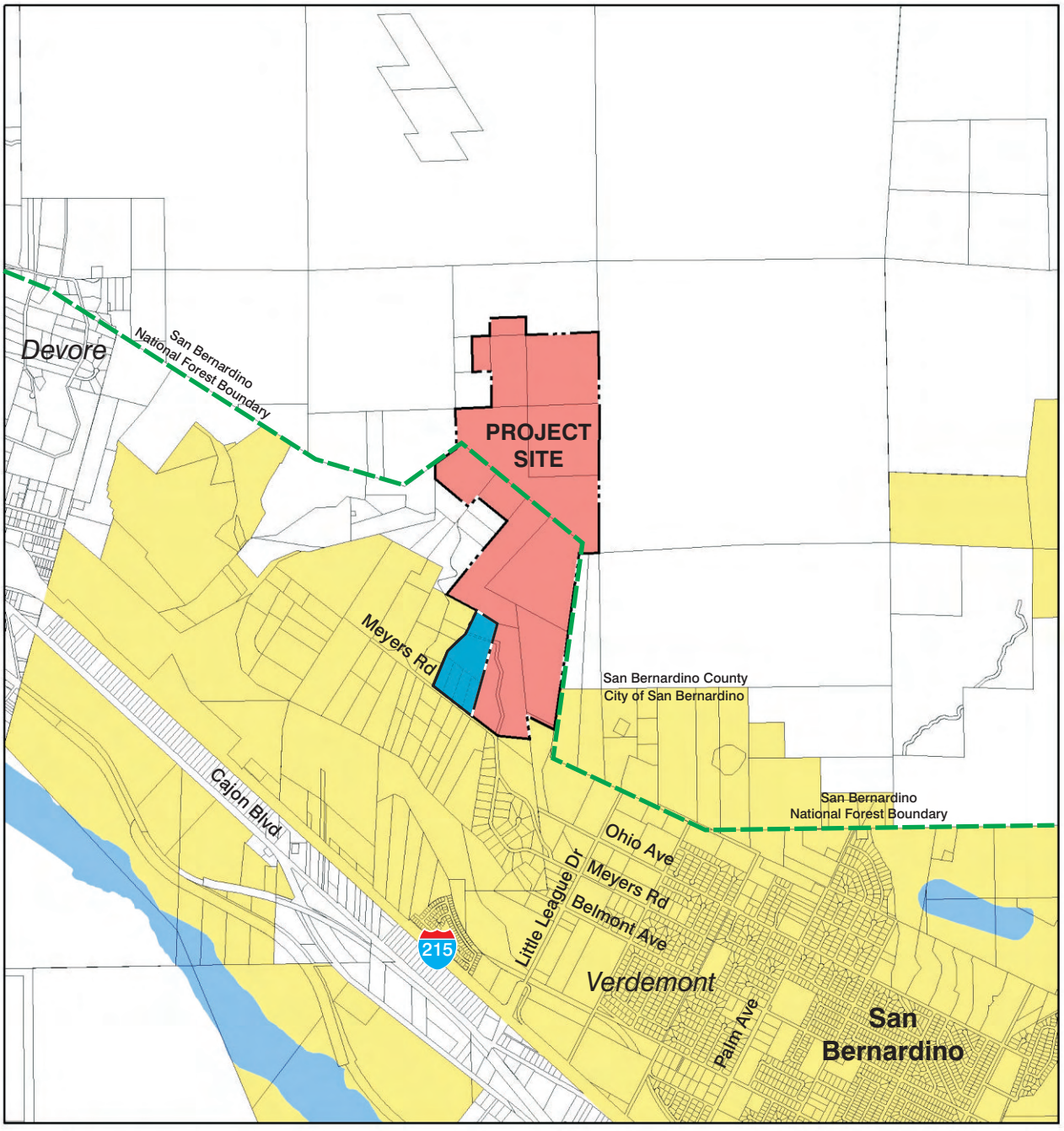
Regional Location



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Local Vicinity



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3.4.1 Development Plan

Figure 3-3, *Development Plan,* depicts the proposed development for the project site. This is the preferred development plan and it assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site would be relocated underground. Figure 3-3A, *Alternative (Overhead Electric Lines) Development Plan,* depicts an alternative plan with the electric lines accommodated above ground, in the event that they are not placed underground, Both plans are described in more detail below.

Preferred Development Plan

The development footprint focuses on the gently sloping alluvial benches between canyons, steep hillsides, and the major drainages (Cable Canyon and Meyer Canyon) that characterize the property.

The project site (352.8 acres) is within the City of San Bernardino's unincorporated sphere of influence (SOI) and will be annexed into the City. The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners (outlined on Figure 3-2). The area is adjacent to the west of the project site along Meyers Road and currently has four occupied, multiple-acre lots. It is being included in the annexation element of the proposed project to prevent the creation of a county island within the City of San Bernardino. The creation of an island is not allowed under regulations governing the Local Agency Formation Commission of San Bernardino County. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development would occur on these parcels as part of this project.

The Spring Trails plan accommodates 307 single-family detached units (306 new units and 1 existing residence), which are set among neighborhoods separated by open space corridors, drainage ways, roadways, and sloped areas. A system of pathways connects the residences with neighborhood parks and natural open spaces. Development is focused onto approximately 241.5 acres, or about 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space. A statistical analysis of the site plan is provided in Table 3-1, *Land Use Summary.*

Table 3-1
Land Use Summary

Land Use	Acres [1, 2]	Maximum Density	Units[3]
Developed Area			
Residential	70.9	1 unit per lot	306
Private Lot (existing)	2.2	1 unit	1
Parks (public and private)	9.0		
Open Space – Controlled	125.1		
Utilities	1.2		
Roads (onsite)	33.1		
Subtotal	**241.5**		**307**
Undeveloped Area			
Open Space – Natural	111.3		
Subtotal Onsite	**352.8**		**307**
Offsite Acres			
Roads/Grading (offsite)	23.7		
Total	**376.5**		**307**

Source: Spring Trails Specific Plan.
[1] Variations to account for final roadway alignments and grading may result in a minor shifting of acres.
[2] Statistics are based upon buildable area depicted on Figure 2.2 of the Specific Plan instead of the legal lot area to give a true picture of the use of the land. See Figure 3-4, *Zoning Map*, for the zoning designations.
[3] Lots 30 and 233, as numbered on Tract Map 15576, are undevelopable unless the building pads are reconfigured in a manner that is acceptable to the Fire Chief. If they are not reconfigured accordingly, the total units developed would be 305.

The average lot size in Spring Trails is 29,000 square feet. The largest lots are on the northern portion and upper elevations of the site, and the largest lot measures 18.3 acres. The smallest lots are on the lower elevations and southern portion of the project, and the smallest lot measures 10,801 square feet. As noted in the Land Use Summary, in many instances the legal lots extend beyond the buildable area and include graded slopes, fuel modification zones, steep slopes, and open spaces. The buildable and nonbuildable areas of each lot are depicted on Figure 3-3 and also on the project's *Zoning Map,* Figure 3-4.

Approximately 241.5 acres of the total site would be improved for the onsite development of residential lots, roadways, trails, detention basins, fuel modification zones, and parks. An additional 23.7 acres would be graded and improved for offsite access, including 4.2 acres for the primary access road and 19.5 acres for the secondary access road (as described below). Figure 3-5, *Conceptual Grading Plan*, shows how the existing and final contours would be changed to support the proposed project.

Alternative (Overhead Electric Lines) Development Plan

As shown in Figure 3-3A, the alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above ground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units (303 new units and 1 existing residence). Underneath the central portion of the electric line easement, the land use is designated as Open Space-Controlled. The northern portion of the electric line easement is designated as residential in Figure 3.3A; however, development is not permitted within the electric line easement. A statistical analysis of the alternative plan is provided in Table 3-1A, Alternative *Land Use Summary.*

Table 3-1A
Alternative Land Use Summary

Land Use	Acres [1, 2]	Maximum Density	Units[3]
Developed Area			
Residential	70.0	1 unit per lot	303
Private Lot (existing)	2.2	1 unit	1
Parks (public and private)	9.0		
Open Space – Controlled	126.0		
Utilities	1.2		
Roads (onsite)	33.1		
Subtotal	**241.5**		**304**
Undeveloped Area			
Open Space – Natural	111.3		
Subtotal Onsite	**352.8**		**304**
Offsite Acres			
Roads/Grading (offsite)	23.7		
Total	**376.5**		**304**

Source: Spring Trails Specific Plan.
[1] Variations to account for final roadway alignments and grading may result in a minor shifting of acres.
[2] Statistics are based upon buildable area depicted on Figure 2.2 of the Specific Plan instead of the legal lot area to give a true picture of the use of the land. See Figure 3-4, *Zoning Map*, for the zoning designations.
[3] Lots 30 and 233, as numbered on Tract Map 15576, are undevelopable unless the building pads are reconfigured in a manner that is acceptable to the Fire Chief. If they are not reconfigured accordingly, the total units developed would be 302.

The buildable and nonbuildable areas of each lot for the alternative plan with overhead electric lines are depicted in Figure 3-3A and also in Figure 3-4A*, Alternative (Overhead Electric Lines) Zoning Map*.

3.4.2 Access Roads and Circulation

Primary access to Spring Trails would be provided by a new road extending from the southeastern corner of the site and connecting to Little League Drive. Secondary access is planned via a new road extending from the southwestern corner of the site to the frontage road along I-215. Except for emergency access, the intersection of the secondary access road with Meyers Road is designed with barriers to prevent vehicular access onto Meyers Road. Within Spring Trails, circulation is provided by a loop road and a series of cul-de-sacs.

Figure 3-6, *Circulation Plan,* depicts the planned roadway system, and details of the roadway cross-sections are shown in Figure 3-7, *Roadway Cross-Sections.* Necessary public streets, both on- and offsite, would be improved by the developer and dedicated to the City. All roadways would be two-way travel—one lane in each direction—with varying treatments for parkways, sidewalks, and parking, as depicted in Figure 3-7. The roadway types are:

- **Primary Access Road (50 ft. Right-of-Way (ROW))** would provide the main access for residents and guests to enter and leave Spring Trails

- **Secondary Access Roadway (50 ft. ROW)** is intended as an alternative street for local traffic to access arterial streets outside the project site. General public would not be able to access Meyers

Road from the Secondary Access Road through the use of a barrier. Emergency vehicles would only be allowed to access Meyers Road from the Secondary Access Road.

- **Secondary Access Roadway – Special Segment (50 ft. ROW)** identifies the segment of the Secondary Access Road that contains curves and grading, where the use of design treatments will be used to reduce vehicular speeds to safe levels. The design treatments shall be approved by the City Engineer prior to construction of the access road.

- **Primary Local Street (50 ft. ROW)** would provide primary internal access within Spring Trails.

- **Secondary Local Road (40 ft. ROW)** would provide resident access in the northern portion of the project and include parallel parking on one side of the street.

- **Cul-de-Sac I (46 ft. ROW)** would connect to the local streets and provide access to homes on both sides of the street.

- **Cul-de-Sac II (40 ft. ROW)** would connect to the local streets and provide access to homes on only one side of the street.

3.4.3 Trails and Open Space

Figure 3-8, *Trails, Parks, and Open Space Plan,* illustrates the recreational improvements proposed for Spring Trails. As detailed in Table 3-1, 245.4 acres of the 352.8-acre site are planned as open space, including natural open space, controlled open space, and parks. Two neighborhood parks would be public, serve the dual function as detention basins, and include shade structures and tot lots. One private park is proposed to include a thematic garden, observation point, a tot lot, and other amenities such as an outdoor fireplace, water feature, picnic benches, and gazebo. A private, enclosed dog park is also proposed.

In the alternative plan with overhead electric lines, the area planned as open space in Spring Trails totals 126 acres. The additional 0.9 acres of open space above what is shown in the preferred development plan accommodates an SCE easement for the overhead electric lines. As shown in Figure 3-8A, *Alternative (Overhead Electric Lines) Trails, Parks, and Open Space Plan,* the land underneath the central portion of the SCE easement is designated as Open Space-Controlled. If permitted by SCE, a park and/or trail may be located under this portion of the electric lines as a permitted use; however, they are not assumed in the buildout of the alternative plan.

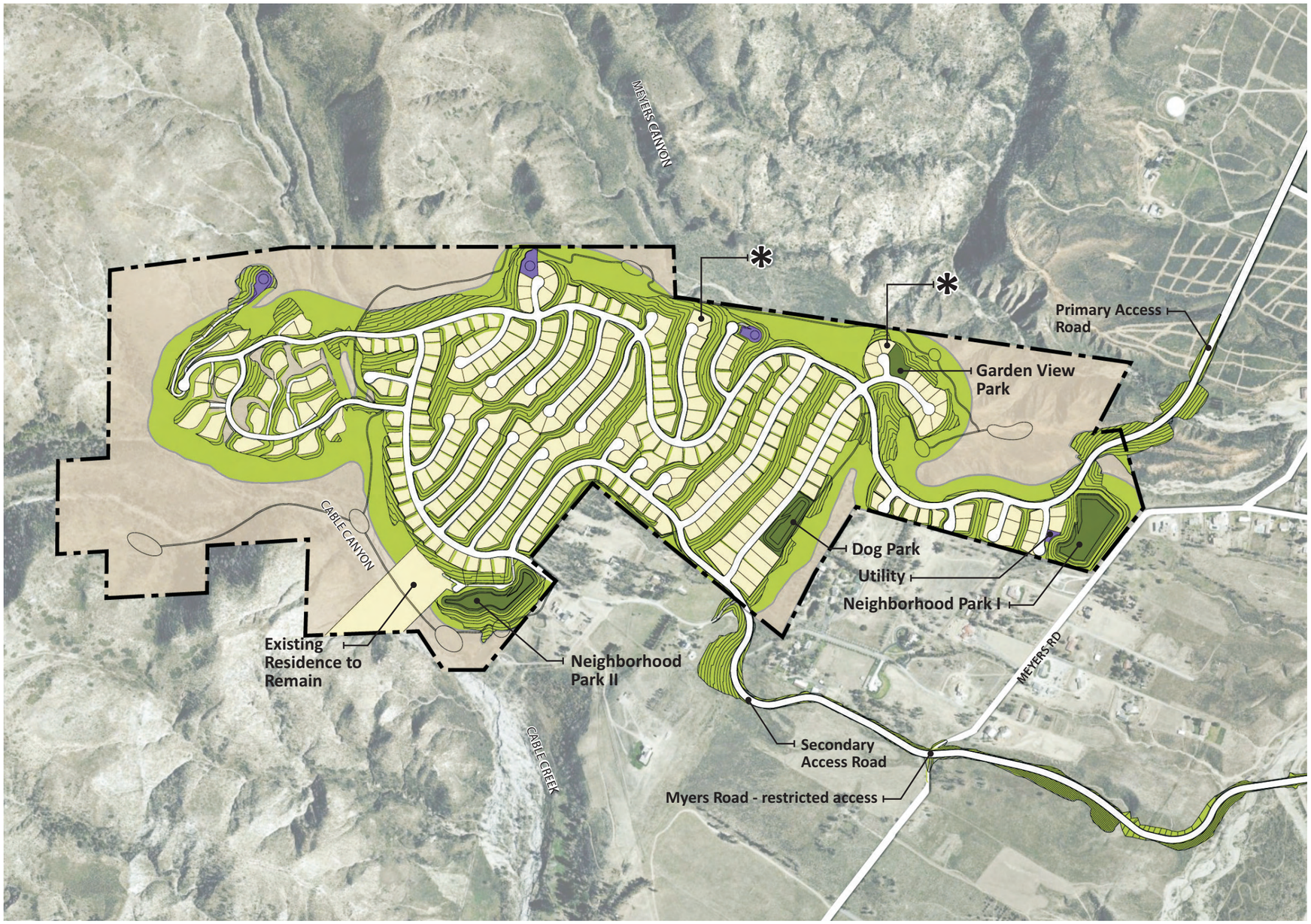
A diverse system of interconnected trails would include a community trail (8-foot-wide trail within street ROW) for pedestrian and bicycle use; equestrian/pedestrian trail (12-foot-wide trail surfaced with decomposed granite or similar surface and connecting with existing offsite trail); and 4-foot-wide hiking trails. Please also see Section 5.13 for additional descriptions of proposed recreational improvements.

3.4.4 Project Infrastructure

Storm Drainage

There are four major drainage areas within the Spring Trails project site. As shown in Figure 3-9, *Conceptual Drainage Plan,* upon development, some natural drainage courses onsite would be maintained, and some on- and offsite flows would be captured and routed through a series of catch basin inlets and storm drain systems. Captured stormwater would be conveyed to three onsite detention basins where it would be treated and discharged at a controlled rate into Cable Canyon.

Development Plan



Legend

- Residential
- Open Space - Natural
- Open Space - Controlled
- Parks
- Utility
- Road
- Site Boundary

Notes:

1. The Development Plan is a true representation of the use of land irrespective of legal lot lines and shows the areas where buildings may be located, graded slope areas, parks, roadways, and open space areas. The development potential shown in Table 2.1 is keyed to this figure.

2. When determining the use, development standards, and buildable area of each lot within Spring Trails, this Figure and its associated land use categories shall govern.

3. This Figure represents the intended development pattern of Spring Trails and minor adjustments to roadway alignments and widths, grading areas, buildable pad configurations, and land use boundaries may be made per the provisions of Chapter 6, Administration and Implementation.

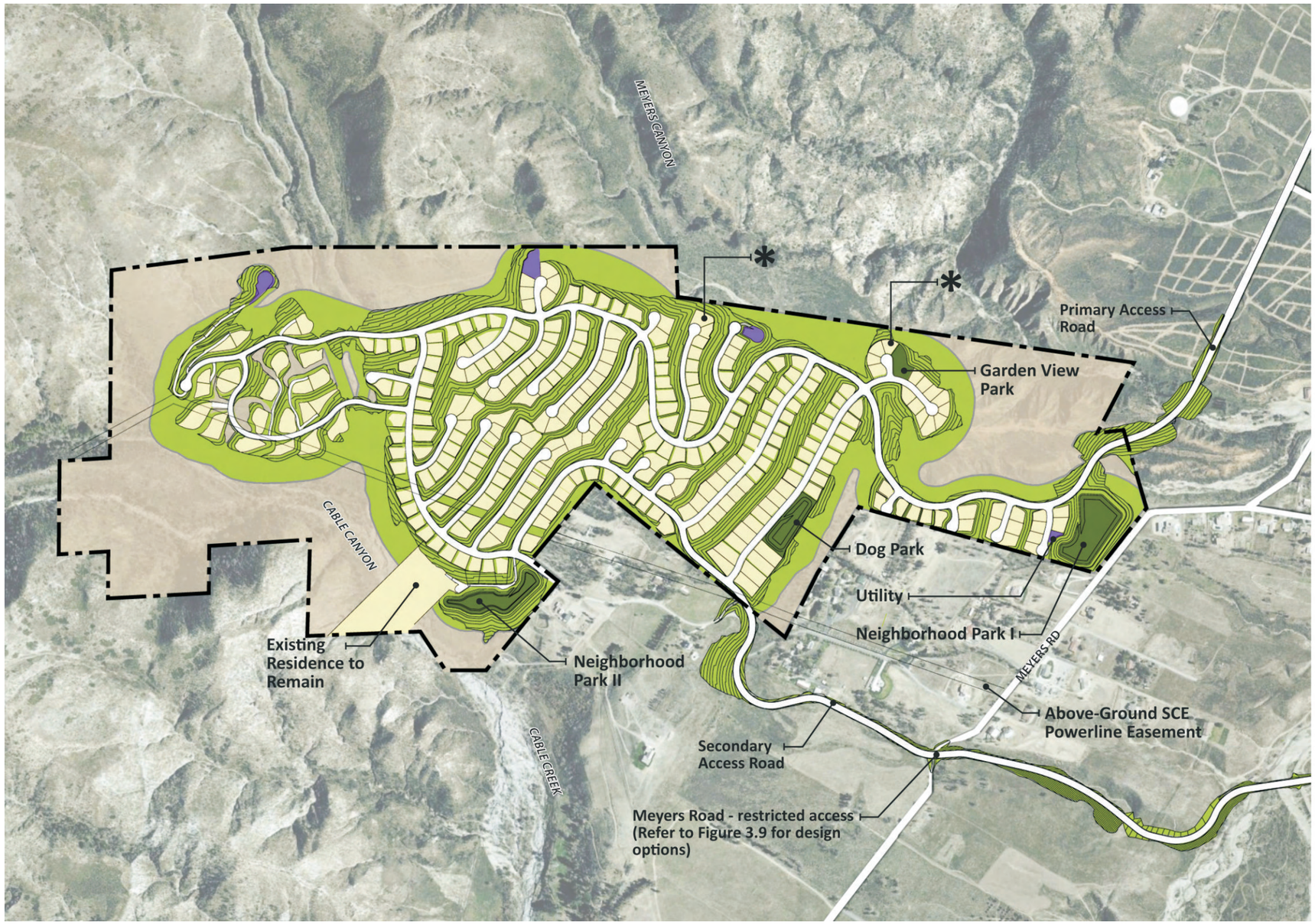
4. The preferred development plan assumes that the SCE powerlines will be located underground. The plan contained in Appendix F and Figure 2.2A shall be used if the powerlines remain above ground.

✱ Lots 30 and 233 are unbuildable unless the building pads are reconfigured in a manner acceptable to the fire chief.

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Alternative (Overhead Electric Lines) Development Plan



Legend

- Residential
- Open Space - Natural
- Open Space - Controlled
- Parks
- Utility
- Road

Notes:

1. This Alternative Development Plan will be utilized if the SCE powerlines cannot be located underground as assumed in the preferred plan.

2. The Alternative Development Plan is a true representation of the use of land irrespective of legal lot lines and shows the areas where buildings may be located, graded slope areas, parks, roadways, and open space areas. The development potential shown in Table 2.1A is keyed to this figure.

3. When determining the use, development standards, and buildable area of each lot within Spring Trails, this Figure and its associated land use categories shall govern.

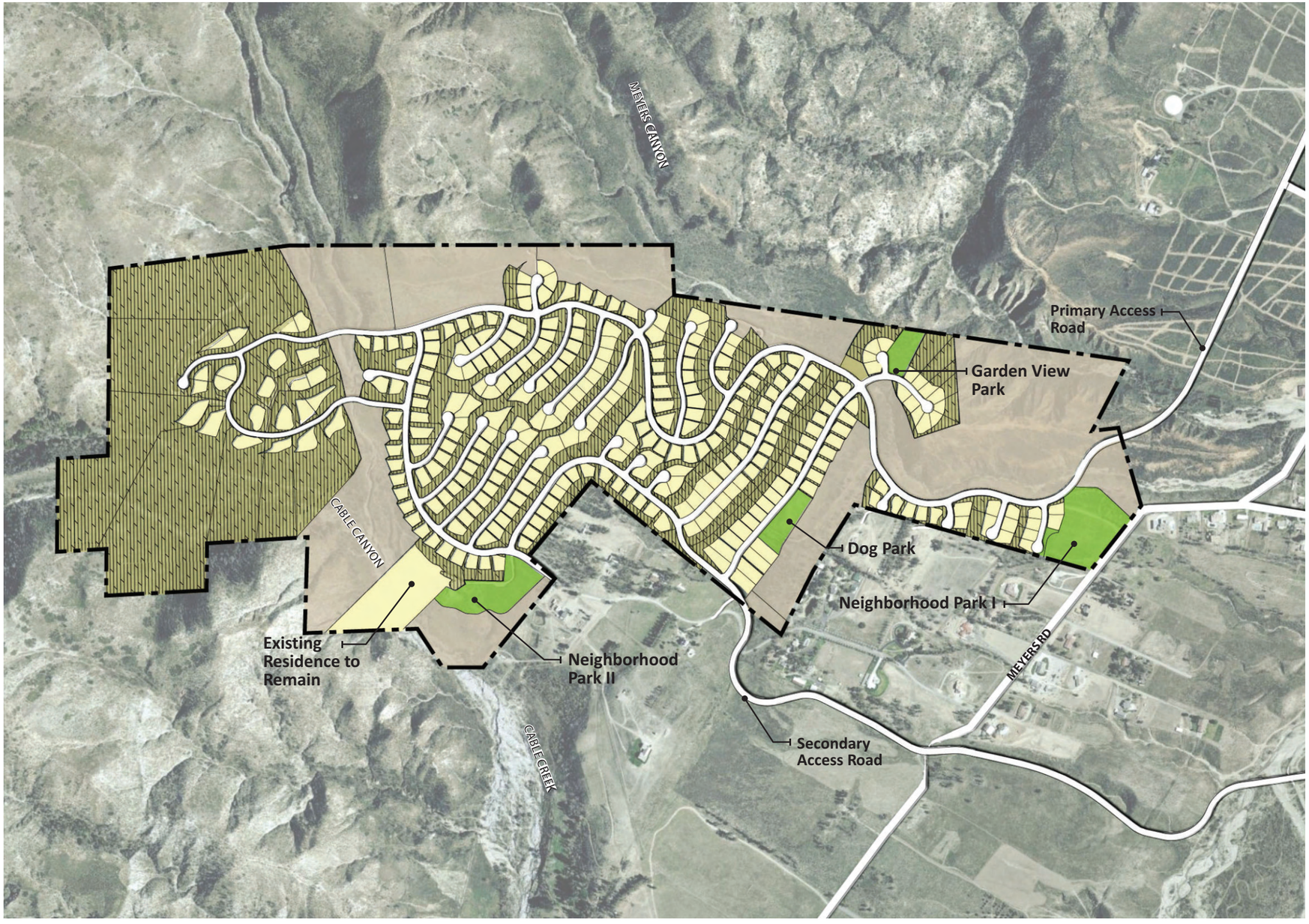
4. This Figure represents the intended alternative development pattern of Spring Trails and minor adjustments to roadway alignments and widths, grading areas, buildable pad configurations, and land use boundaries may be made per the provisions of Chapter 6, Administration and Implementation.

✱ *Lots 30 and 231 are unbuildable unless the building pads are reconfigured in a manner acceptable to the fire chief.*

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Zoning Map



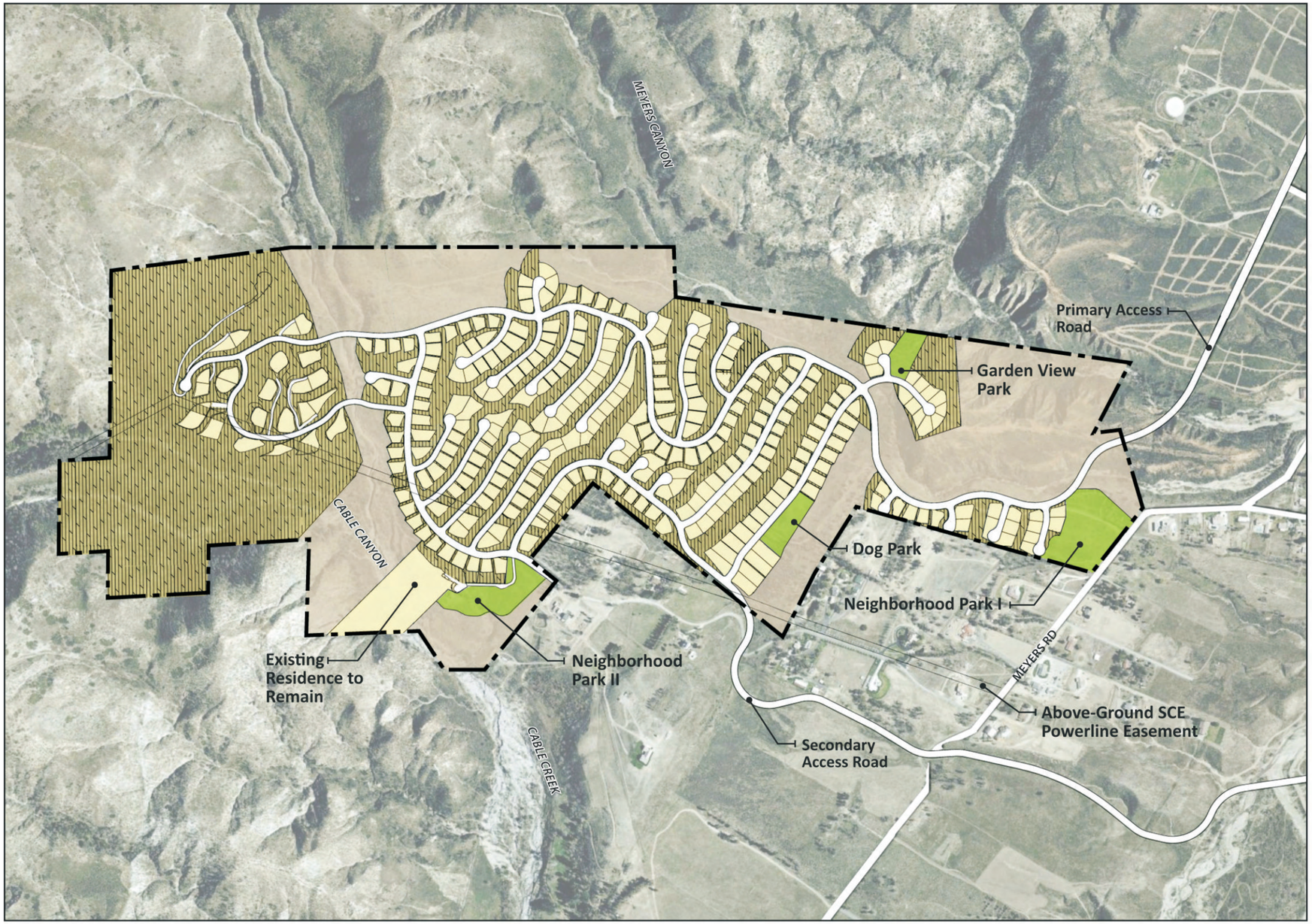
Legend

- Residential
- Open Space - Natural
- Parks
- Nonbuildable Area Overlay
- Site Boundary
- Parcel Lines

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Alternative (Overhead Electric Lines) Zoning Map



Legend

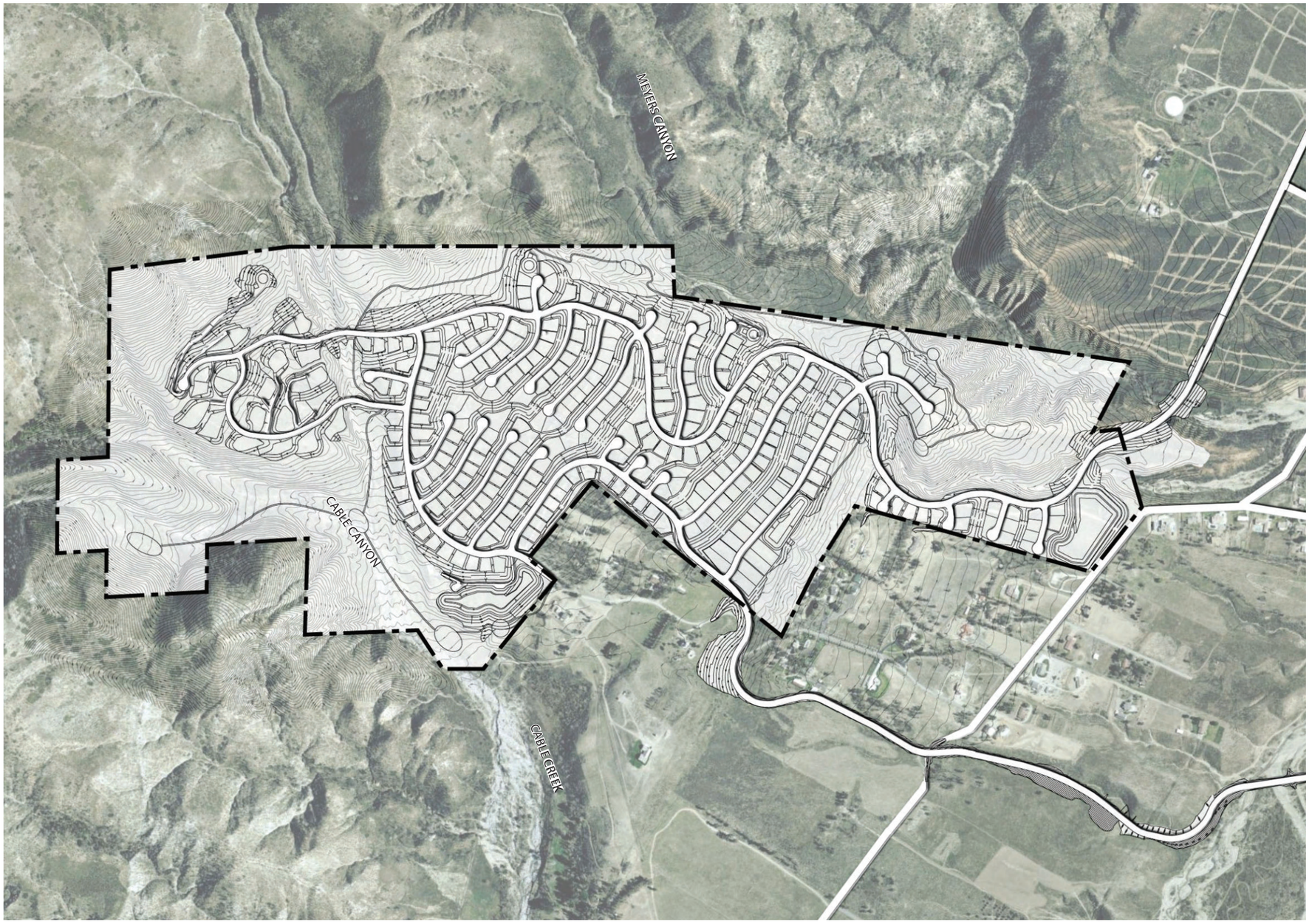
- Residential
- Open Space - Natural
- Parks
- Non-Buildable Area Overlay
- Site Boundary
- Parcel Lines

The Alternative Zoning Map is a depiction of the zoning designation of each lot. However, due to constraints such as fault zones and slope areas, the zoning does not provide a true picture of the use and buildable area of each lot. Therefore, when determining the use, standards, and buildable area for a lot, Figure 2.2A, Alternative Development Plan, shall govern.

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Conceptual Grading Plan



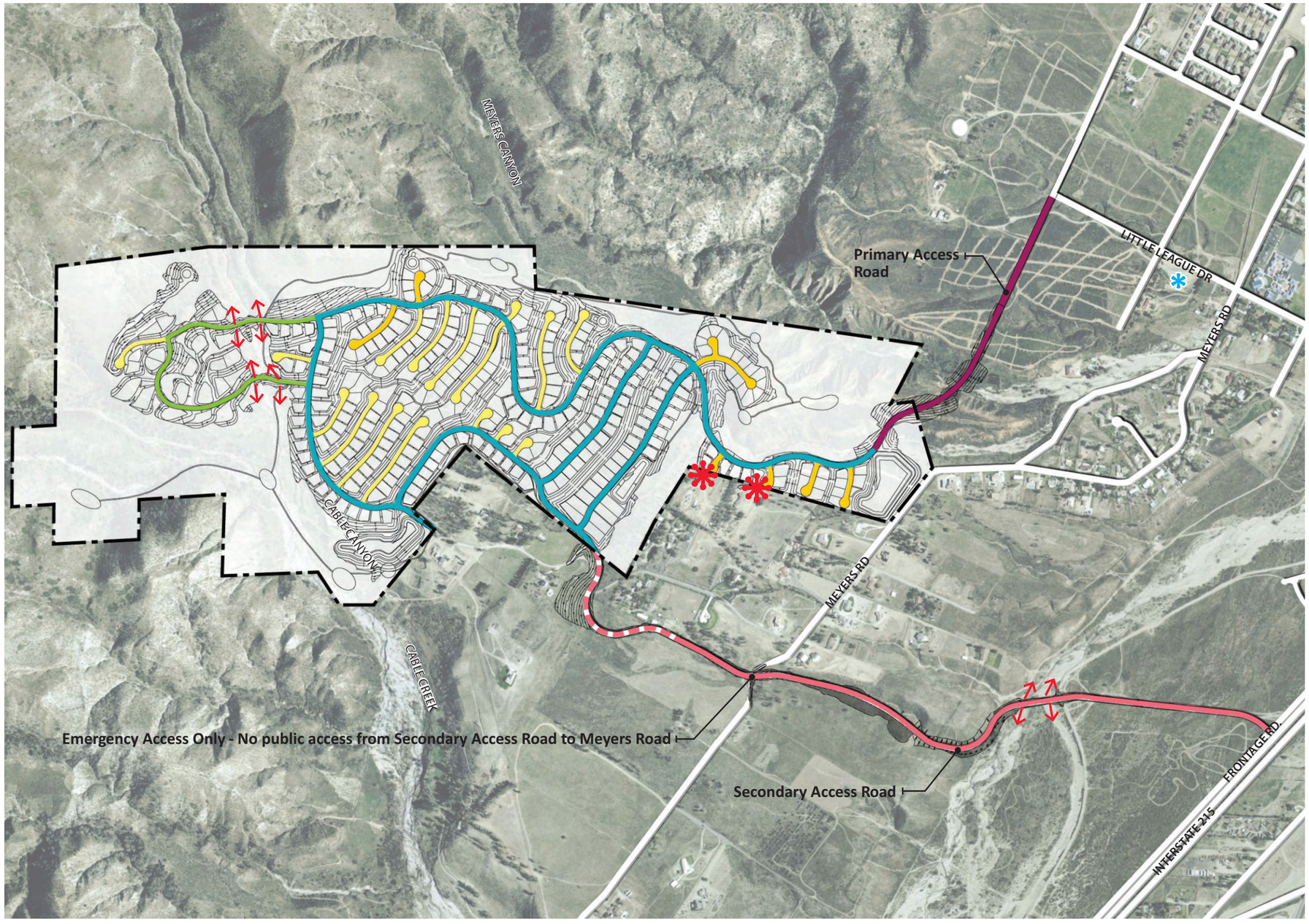
Legend

- Proposed Contour
- Existing Contour
- 2:1 Slope

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Circulation Plan



Legend

- Primary Access Road (50' ROW)
- Secondary Access Road (50' ROW)
- Secondary Access Road - Special Segment (50' ROW)
- Primary Local Road I (50' ROW)
- Secondary Local Road (40' ROW)
- Cul-de-sac I (46' ROW)
- Cul-de-sac II (40' ROW)
- Off-Site Access Points
- Wildlife Crossing Location
- Site Boundary

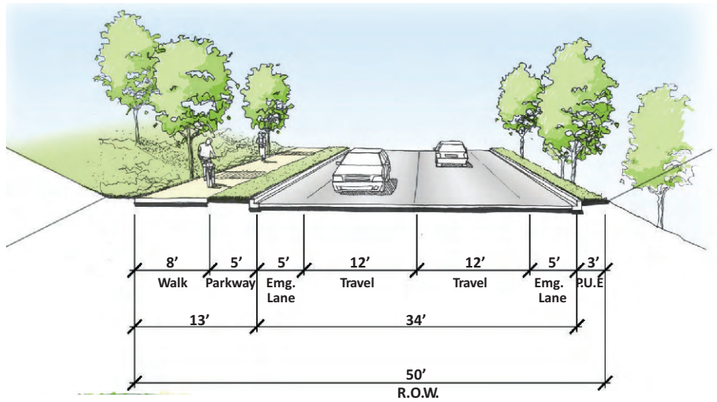
* The segment of Little League Drive north of Meyers Road to the Primary Access Road, to be improved prior to project site construction.

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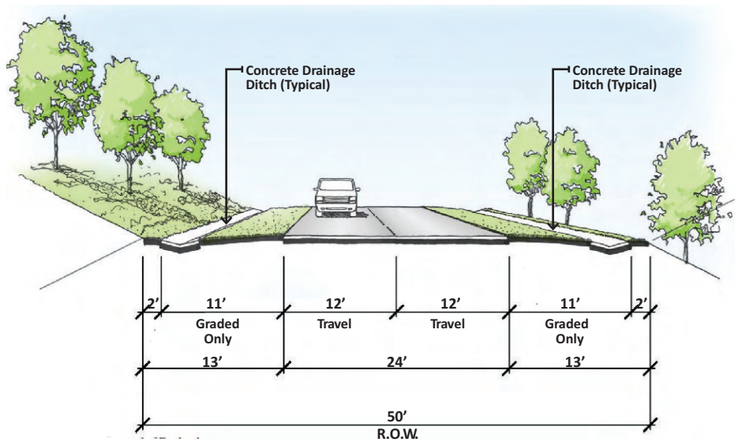
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Roadway Cross-Sections

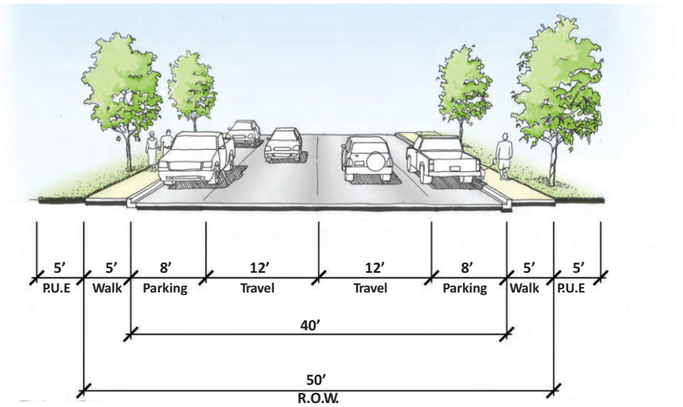
Primary Access Road



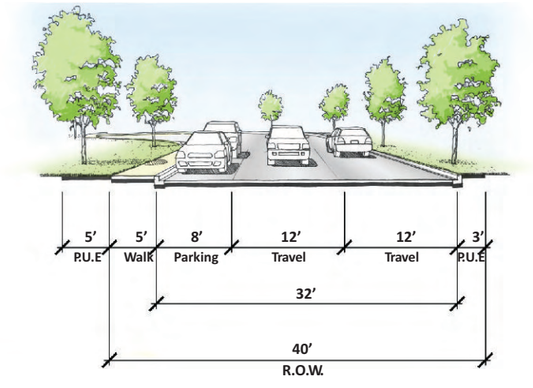
Secondary Access Road



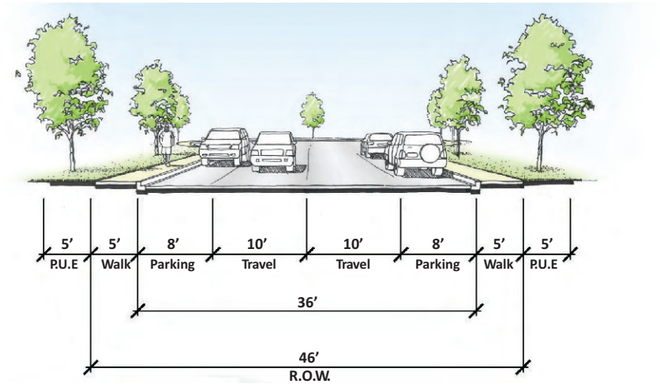
Primary Local Street



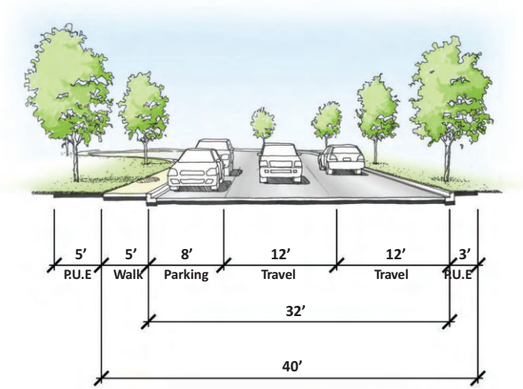
Secondary Local Street



Cul-de-sac I



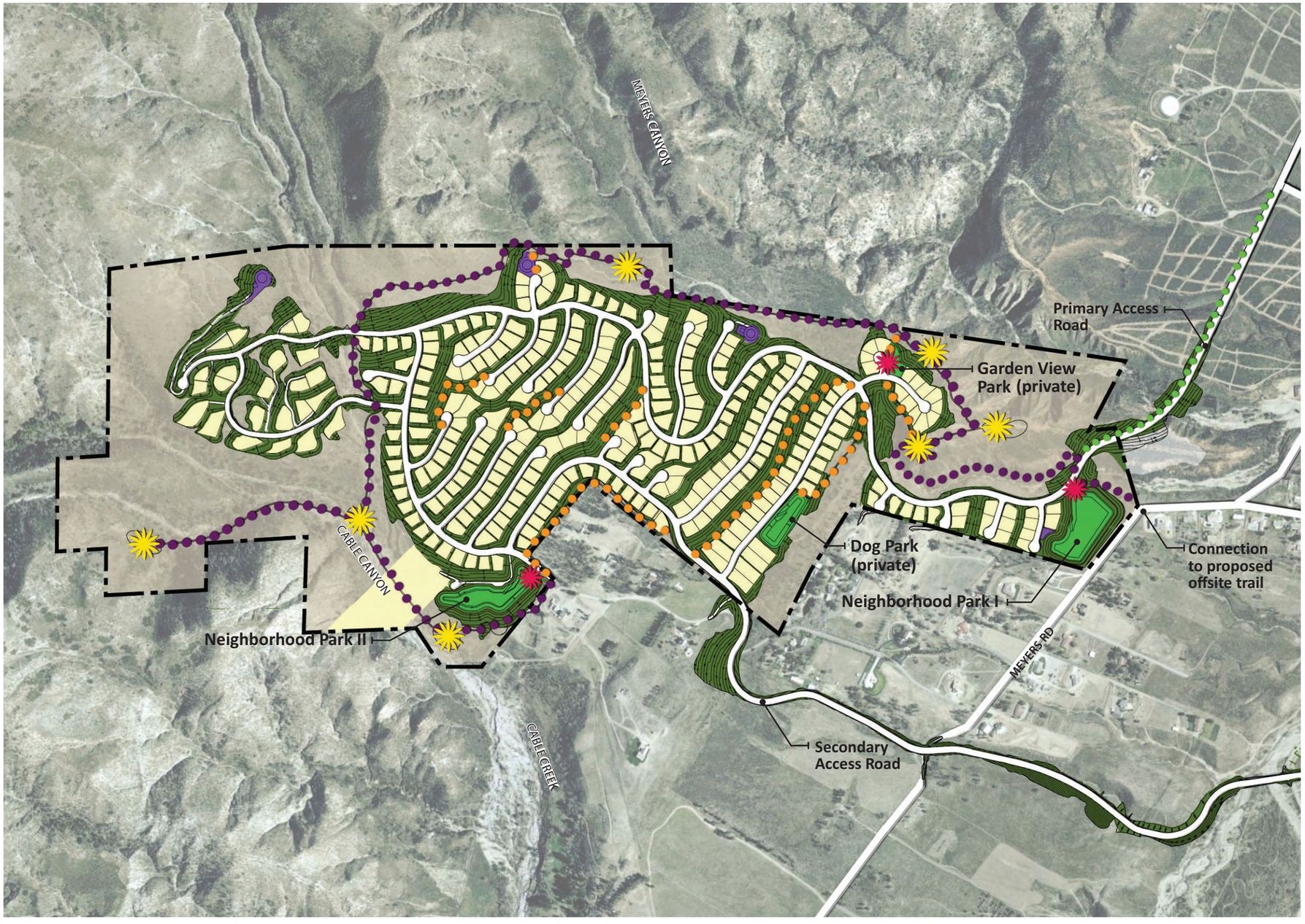
Cul-de-sac II



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Trails, Parks, and Open Space Plan



Legend

- Residential
- Open Space
- Parks
- Graded Slopes
- Utility
- 12-foot Equestrian/Pedestrian Trail
- 8-foot Community Trail (On-Street)
- 4-foot Hiking Trail
- Planned Trail (offsite)
- Observation Point
- Trailhead
- Site Boundary

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Alternative (Overhead Electric Lines) Trails, Parks, and Open Space Plan



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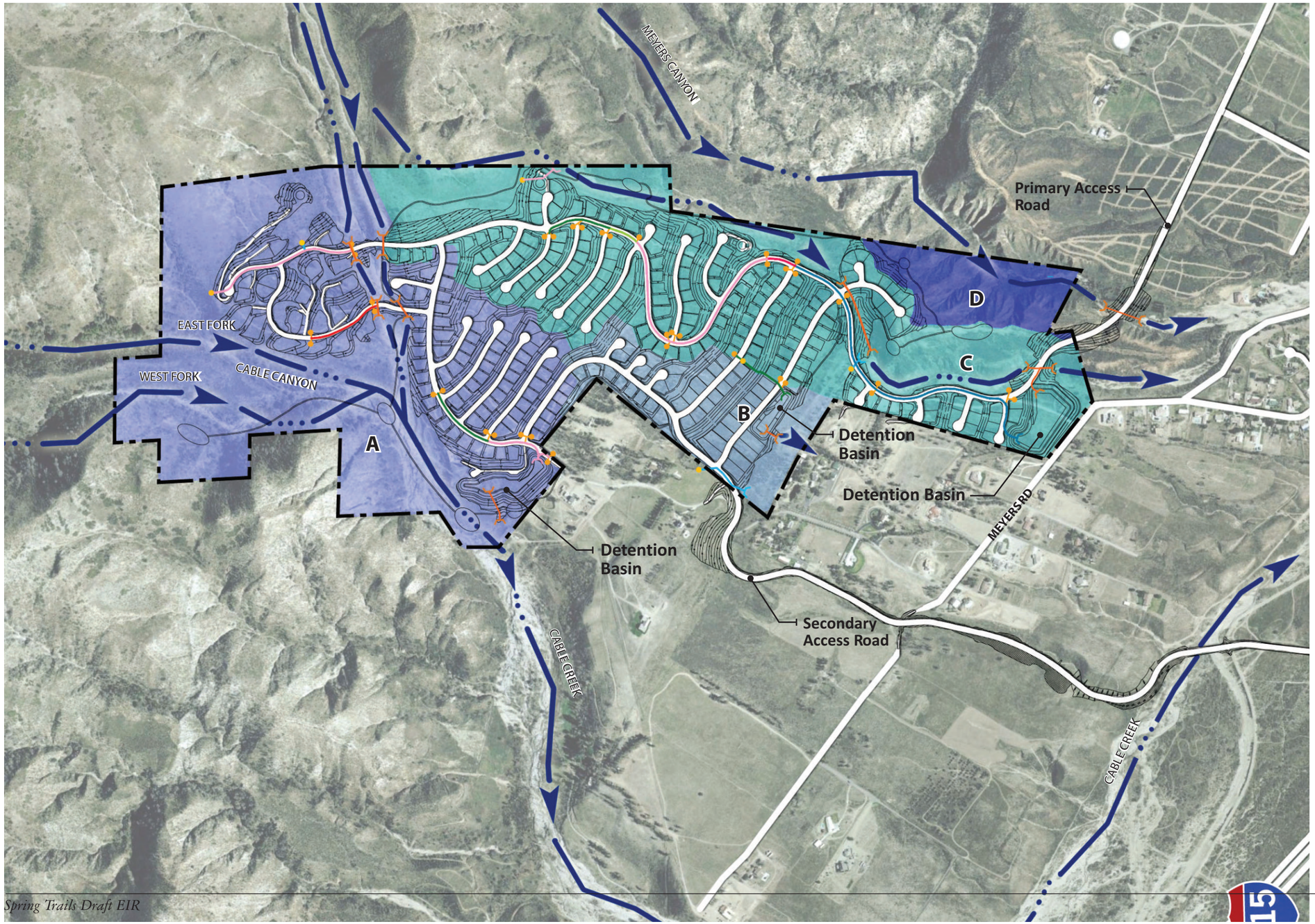
- Residential
- Open Space
- Parks
- Graded Slopes
- Utility
- 12-foot Equestrian/Pedestrian Trail
- 8-foot Community Trail (On-Street)
- 4-foot Hiking Trail
- Planned Trail (offsite)
- Observation Point
- Trailhead

If permitted by SCE, a park and/or equestrian/pedestrian trail may be located under the power lines.

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Conceptual Drainage Plan



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The drainage plan has been designed to ensure conveyance of the 100-year storm. Best management practices for water quality treatment would include the extended detention basins and media filtrations devices (see Section 5.7, *Hydrology and Water Quality*). The improvement would be designed and constructed in accordance with the City of San Bernardino and the San Bernardino County Flood Control District standards.

Water and Sewer

Water Supply System

Existing and proposed water storage and distribution facilities for the Spring Trails project and Verdemont community are shown in Figure 3.10, *Conceptual Water Plan, Area,* and Figure 3.11, *Conceptual Water Plan, Onsite Water Mains*. The City of San Bernardino Municipal Water Department would provide water services to Spring Trails and currently provides service to pressure zones ranging from 1,249 feet to 2,100 feet. The nearest existing reservoir is the Meyers Canyon Reservoir, which is within the 2,100-foot pressure zone but is not adequate for buildout of Spring Trails or Verdemont. Therefore, water would be supplied to Spring Trails from lower elevations by a combination of expanding and improving the offsite water system and the provision of onsite reservoirs and transmission lines.

Offsite improvements would include the creation/improvement of a series of pump stations and transmission lines within the Verdemont community. In addition, three onsite reservoirs are proposed to meet the need for 2,300-, 2,500-, 2,700-, and 3,000-foot elevation pressure zones.

Based upon the projected buildout of Spring Trails, total projected water demands are:

- Average Daily Demand – 328 gallons per minute (gpm)
- Maximum Daily Demand – 568 gpm
- Maximum Peak Hour Demand – 1,136 gpm

The water facilities for Spring Trails have been sized to meet maximum demand in addition to fire flow requirements. Fire flow capacity is designed to provide 1,500 gpm for four hours. Pumping stations would be designed with 100 percent redundancy in the event that one or more of the pumping units fails, and would be equipped with onsite generators that can operate in a blackout or emergency condition. Onsite storage capacity is shown in Table 3-2, *Onsite Water Storage Facilities.*

Table 3-2
Onsite Water Storage Facilities

Pressure Zone	*2,300*	*2,500*	*2,700*	*3,000*
Units	**11**	**24**	**138**	**136**
Maximum Daily Demand (1.61 gpm/ac)	20 gpm	44 gpm	254 gpm	250 gpm
Emergency Storage[1]	28,800 glns	63,360 glns	365,760 glns	360,000 glns
Operational Storage[2]	7,200 glns	15,840 glns	91,440 glns	90,000 glns
Fire Flow Storage[3]	360,000 glns	360,000 glns	360,000 glns	360,000 glns
Total Storage Required	**396,000 glns**	**439,200 glns**	**817,200 glns**	**810,000 glns**

glns = gallons; gpm = gallons per minute
[1] Equivalent to one full day of maximum demand.
[2] Equivalent to 25% of one full day of maximum demand.
[3] Fire flow required of 1,500 gpm for four-hour duration.

The proposed onsite water distribution pipelines are shown in Figure 3-11, *Conceptual Water Plan, Onsite Water Mains.* The pipelines that connect pump stations to the reservoirs would be a maximum of 20 inches in diameter. All looping lines would be 12 inches in diameter and other distribution pipelines would be 8 inches in diameter.

Sewer Collection

The Spring Trails project lies within the City of San Bernardino sanitary sewer service area. Spring Trails would connect to the City's existing 10-inch sewer line, which ends at Little League Drive and Meyers Road, then connects to the south to a major interceptor system, and is eventually treated in the San Bernardino Water Reclamation Plant. Existing capacity is available in the sewer system to serve the buildout population within the City. A general layout of the sewer system is shown on Figure 3.12, *Conceptual Sewer Plan*.

The sewer facilities would be designed and constructed in accordance with the City of San Bernardino standards and specifications and in accordance with the *Standard Specifications for Public Works Construction* (latest edition). The sewer mains would be located in public street rights-of-way where possible. If not, they would be constructed within dedicated public utility easements. The sewer system would be dedicated to and maintained by the City of San Bernardino.

3.4.5 Fuel Modification and Fire Protection

The entire project site is within a Very High Hazard Severity Zone as designated by the California Department of Forestry and Fire Protection (CAL FIRE). Once annexed to the City of San Bernardino, the project site would also be subject to the City's Development Code and established Foothill Fire Zones Overlay District (Development Code Chapter 19.15). The overlay district designates three zones within the wildland interface:

- Fire Zone A (Extreme hazard), characterized by slopes over 30 percent
- Fire Zone B (High Hazard), characterized by slopes 15–30 percent
- Fire Zone C (Moderate Hazard), characterized by slopes less than 15 percent

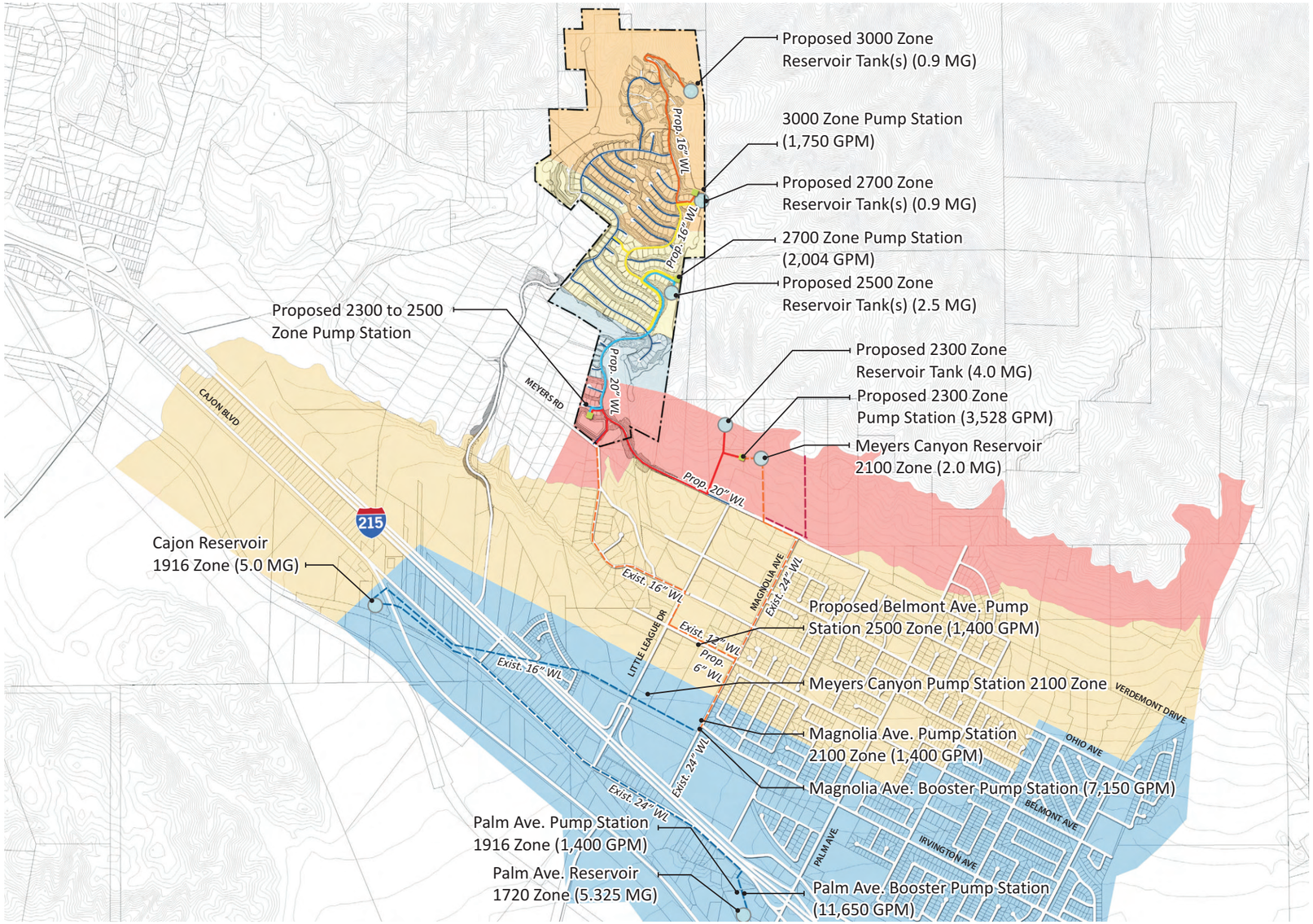
The project site has approximately 121 acres in Fire Zone A, 112 acres in Fire Zone B, and 119 acres in Fire Zone C. The Overlay District specifies development standards relating to access and circulation, site and street identification, roadside vegetation, water supply, erosion control, construction and development design, and miscellaneous items.

Upon annexation of the project site (352.8 acres) and the adjacent 26.4-acre parcel of land into the City, the annexed areas will be detached from the San Bernardino County Fire Protection District and its Valley Service Zone.

One of the components of the wildland fire defense systems for Spring Trails would be the implementation of fuel modification zones. The proposed plan is depicted in Figures 5.6-1 and 5.6-2 (*Fire Protection Plan (North Side)* and *(South Side),* respectively) and includes the following defined fuel modification zones:

- *Fuel Modification Zone A (flat) - Noncombustible Construction:* 20- to 35-foot setback zone for noncombustible construction only. Fuel Modification Zone A shall be maintained by the homeowner or the HOA. At no time would the Fuel Modification Zone A be less than 20 feet.

Conceptual Water Plan, Area



Legend

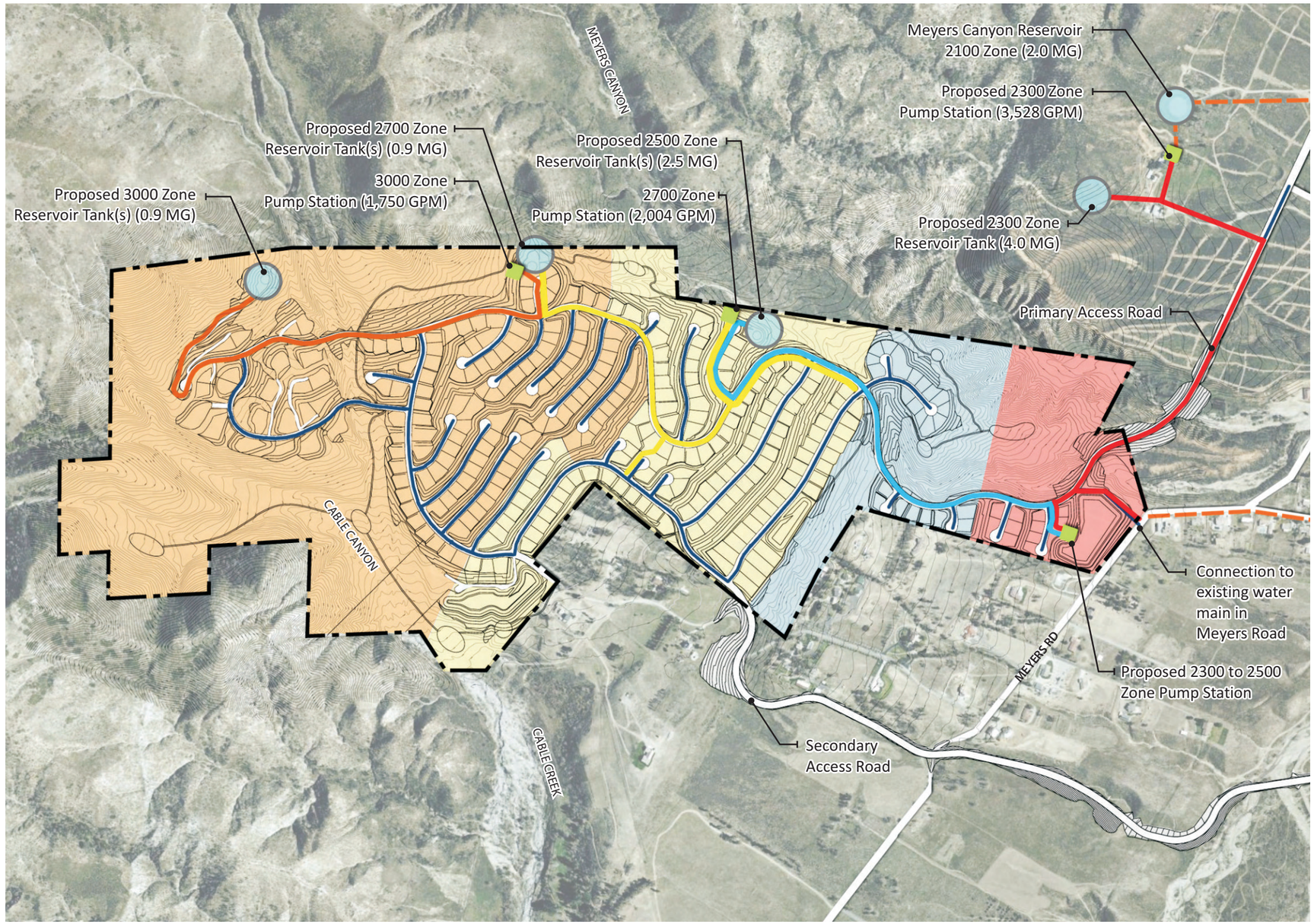
- Future 3000 Zone WL
- Proposed 2700 Zone WL
- Proposed 2400 Zone WL
- Proposed 2100 Zone WL
- Proposed 1916 Zone WL
- Existng and Proposed 2300 Zone WL
- Existng 2100 Zone WL
- Existng 1916 Zone WL
- 3000 Pressure Zone (135 units)
- 2700 Pressure Zone (137 units)
- 2500 Pressure Zone (24 units)
- 2300 Pressure Zone (11 units)
- 2100 Pressure Zone
- 1916 Pressure Zone

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Source: PBS&J 2005; Litchfield 2009

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Conceptual Water Plan, Onsite Water Mains



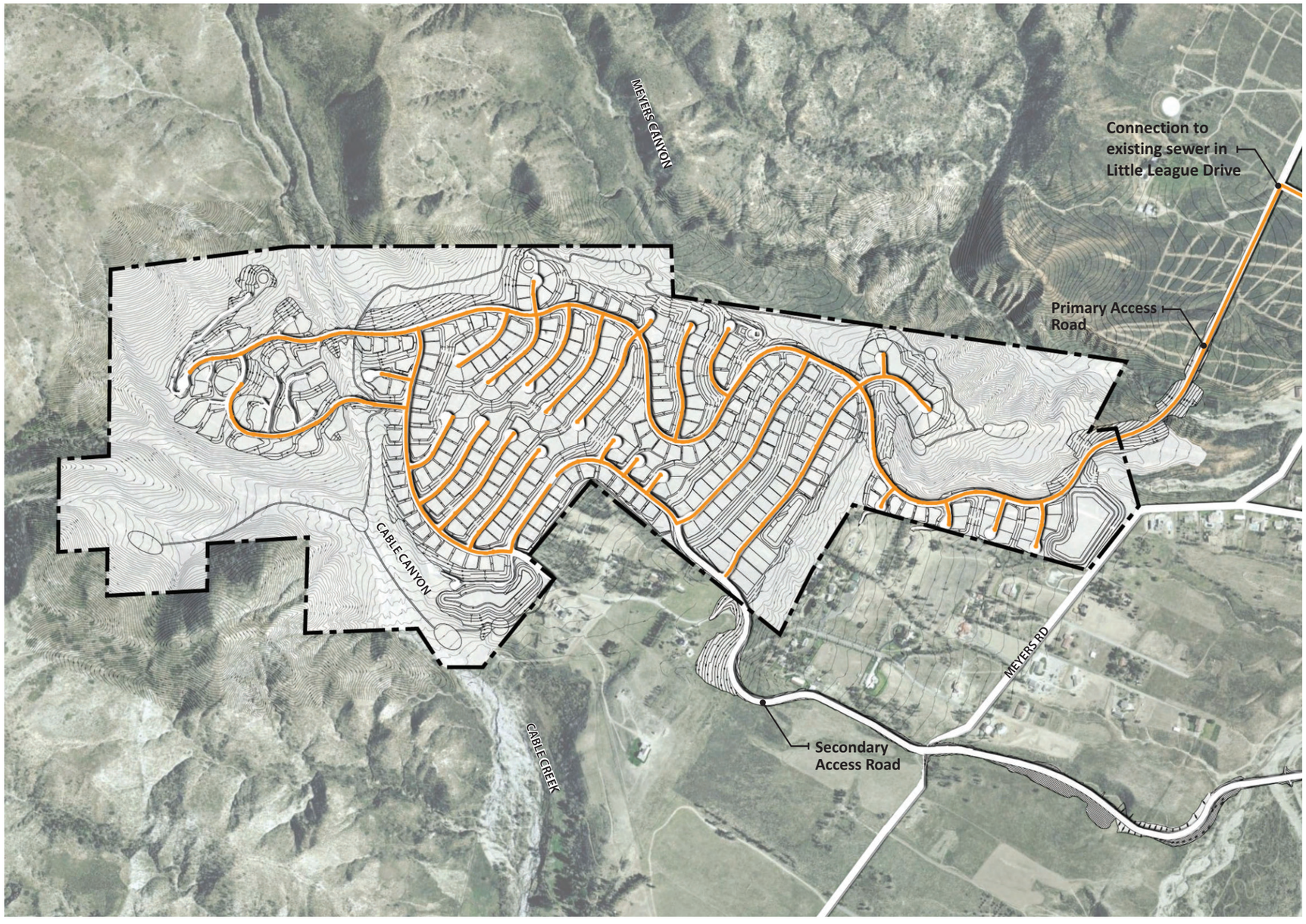
Legend

- Proposed Internal Water Main
- Future 3000 Zone WL
- Proposed 2700 Zone WL
- Proposed 2500 Zone WL
- Proposed 2300 Zone WL
- Existing 2100 Zone WL
- 3200 Pressure Zone (136 units)
- 2700 Pressure Zone (138 units)
- 2500 Pressure Zone (24 units)
- 2300 Pressure Zone (11 units)
- Pump Staton
- Reservoir Tank

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Conceptual Sewer Plan



Legend

- Proposed Sewer Main
- Site Boundary

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- *Fuel Modification Zone B - Wet Zone (100 percent removal of undesirable plant species):* First 50 to 200 feet from Fuel Modification Zone A. Fuel Modification Zone B shall be permanently irrigated, fully landscaped with approved drought-tolerant, deep-rooted, moisture-retentive material as container shrub material, or hydroseeded per SBFD Approved Plant List. Fuel Modification Zone B area shall be maintained by the homeowner, HOA, or landscape maintenance district (LMD) as appropriate.

- *Fuel Modification Zone C - Dry Zone (50 percent thinning of the acceptable existing plant material):* 40 to 185 feet. Fuel Modification Zone C shall be a nonirrigated area. Removal of all flammable undesirable species. Specimen and trees shall be retained as directed by the owner's representative but must be thinned a minimum of 50 percent, including removal of all low hanging foliage within three times the height of the understory shrubs or 10 feet, whichever is greater, along with dead or broken branches. All accumulated plant debris on the ground shall be removed. Fuel Modification Zone C area shall be maintained by the LMD.

This project does not contain any 30 percent thinning "D" fuel modification zones.

3.4.6 Grading and Construction

General Project Phasing and Schedule

At the time of preparation of this DEIR, it is anticipated that construction would begin in late 2011 and buildout of the proposed project is anticipated to occur within approximately three years. This phasing, however, is based on a judgment of future planning and market factors, and therefore is subject to change. The project, however, would be developed in the following sequence:

Phase 1 (approximately one year)

- Offsite grading and improvement of the primary and secondary access roads.

- Offsite backbone utilities (water, sewer, drainage, etc.).

- Onsite backbone utilities.

- Rough grading of Spring Trails project site (approximately 200 acres) for development of residential lots, roadways, trails, detention basins, and parks

- Detention basins improved

Phase 2 (approximately 2.5 years)

- Residential development would sequence from the south and continue northward. Infrastructure, roadways, fuel modification zones, parks, and landscaping necessary to serve residential development would be phased accordingly.

- Improvements in this phase would generally follow the sequence of water improvements, which are divided into three pressure zones (see Figure 3-9, *Conceptual Water Plan*)

- Sewer, storm drain, dry utilities, and roadway paving would be sequenced with improvements in each water pressure zone.

- Trails, parks, and common area landscaping in each pressure zone would occur prior to or concurrent with issuance of residential building permits for that pressure zone.

- Fuel modification zones necessary to support the development in each zone would occur as noted in the Fire Protection Plan.

In accordance with Section 8.54.070 of the City of San Bernardino's Municipal Code, construction would be limited to the hours between 7:00 AM and 8:00 PM.

Estimated Earthwork

As shown in Table 3-3, based on preliminary estimates, the earthwork for the project site itself is anticipated to balance. The primary and secondary access roads, however, would require substantial cut, and the net export requirement for the project is 251,000 cubic yards (cy). Based on an estimated 14 cy capacity per haul truck, an estimated 17,929 truck trips would be required to export soil to complete the access roads. This is estimated to occur over an approximately three-month period, and therefore, based on a six-day week, require approximately 249 truck trips per day.

Table 3-3
Proposed Site Grading

Location	*Cut Grading, Cubic Yards*	*Fill Grading, Cubic Yards*[1]	*Total Area Graded, Acres*	*Net Earthwork, Cubic Yards Deficit (–) or Surplus (+)*
Project Site	2,700,000	2,700,000	193.0	---
Primary Access Road	171,000	55,000	4.2	+ 116,000
Secondary Access Road	244,000	109,000	19.5	+ 135,000
Total	**3,115,000**	**2,864,000**	**216.7**	**+ 251,000**

[1] Does not include shrinkage due to compaction of fill soils.

Construction Equipment

The construction equipment in Table 3-4 is anticipated to develop the proposed project:

Table 3-4
Construction Equipment Mix

Construction Equipment	Number
Grading Phase	
Scrapers	8
Rubber-Tired Dozers	8
Crawl Tractors	8
Graders	8
Building Construction	
Air Compressors	2
Cement and Mortar Mixers	2
Generator Sets	2
Rough Terrain Forklifts	2
Other Construction Equipment	2
Asphalt Paving	
Grader	1
Paver	1
Paving Equipment	1
Rollers	2

Source: Based on preliminary construction information from Rick Engineering Company.

3.4.7 Development Agreement

A Development Agreement is proposed as part of the project approvals. The Development Agreement includes certain project conditions that benefit the Project, as well as local and regional benefits. These conditions include:

- Dedication to the City of San Bernardino right-of-way for water main lines and related facilities, easements for the construction and operation of water tank sites, and right-of-way for sewer main lines and related facilities.

- Construction of water lines and related facilities including water tanks within the easement shown in the Tract Map for the Project site and dedication of those facilities to the City;

- Construction of sewer main lines and related facilities within the easements shown in the Tract Map and dedication of those facilities to the City.

In exchange, the Development Agreement provides for vested development rights for the project and reimbursement of those costs that exceed the fair share of the project for the improvements.

3.5 INTENDED USES OF THE EIR

This DEIR is a project DEIR, which examines the environmental impacts of the proposed residential project. This DEIR is also being prepared to address various actions by the City and others to adopt and implement the proposed residential project. It is the intent of this DEIR to enable the City of San Bernardino, other responsible agencies, and interested parties to evaluate the environmental impacts of the proposed project, thereby enabling them to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are:

Lead Agency	Action
City of San Bernardino	• Approve General Plan Amendment (GPA-02-09), including preannexation of the project site and adjacent 26.4 acre area • Zone the annexed project site Specific Plan • Adopt Spring Trails Specific Plan • Approve Tentative Tract Map (TTM 15576) • Approve Development Agreement • Approve project-specific Water Quality Management Plan • Issue Grading Permits and Building Permits
Responsible Agencies	**Action**
Local Agency Formation Commission (LAFCO)	• Approve annexation of the 352.8-acre project site and adjoining parcels representing 26.4 acres into the City of San Bernardino
U.S. Army Corps of Engineers	• Issuance of a Section 404 permit under the federal Clean Water Act
California Department of Fish and Game (CDFG)	• Issuance of a Section 1602 permit
US Fish and Wildlife Service	• Consultation under Section 7 of the Federal Endangered Species Act
Regional Water Control Board	• Water Quality Certification under Section 401 of the Clean Water Act • National Pollution Discharge Eliminations System permit under Section 402 of the Clean Water Act
California Public Utilities Commission/Southern California Edison	• Review of the project with regard to the SCE transmission line easement and maintenance right-of-way through the site

4. Environmental Setting

4.1 INTRODUCTION

The purpose of this section is to provide, pursuant to provisions of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and a regional perspective." The environmental setting will provide a set of baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project. This section provides an overview of the environmental setting; more detailed descriptions of existing conditions for each resource are provided in Section 5, *Environmental Analysis*.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

Spring Trails is in unincorporated San Bernardino County on the northern edge of the City of San Bernardino and in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and the junction of Interstate 215 (I-215) and I-15. Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side. Refer to Figure 3-1, *Regional Location*, in Chapter 3, *Project Description*.

4.2.2 Regional Climate

Temperature and Precipitation

The annual average temperature varies little throughout the 6,645-square-mile South Coast Air Basin (SoCAB), ranging from the low 60s to the high 80s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The Western Regional Climate Center (WRCC) maintains historical climate information for the western United States. Its closest meteorological monitoring station to the project site is the Lytle Creek PH Monitoring Station (ID No. 045215), approximately 4.5 miles west of the site. According to the WRCC, the average maximum temperature in the local vicinity is 93.0°F in July. The average minimum temperature is reported at 42.8°F in January and February (WRCC 2009).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 33.14 inches per year in the project area (WRCC 2009). Annual average humidity is 70 percent along the coast and 57 percent in the eastern portions of the SoCAB.

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

4.2.3 Regional Planning Considerations

An air basin generally has similar meteorological and geographic conditions throughout. California is geographically divided into 15 air basins, and the City of San Bernardino is in the SoCAB. This air basin contains the largest urban area in the western United States. It is a 6,600-square-mile coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SoCAB includes all of the nondesert portions of San Bernardino, Los Angeles (non–Antelope Valley portion), and Riverside Counties and all of Orange County.

The South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the air quality management plan (AQMP) for the SoCAB, a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. Every three years since 1979, SCAQMD has prepared a new AQMP with updates to the previous plan and a 20-year horizon. The most recent comprehensive plan was adopted on June 1, 2007, and builds upon the approaches for attainment in the 2003 AQMP. The 2007 AQMP incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. It proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of SO_X, directly emitted $PM_{2.5}$, NO_X, and volatile organic compounds (VOC) by 2015. The eight-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional NO_X and VOC reductions to meet the standard by 2024, assuming a bump-up (extended attainment date) is obtained.

The AQMP provides local guidance for the State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas; areas that do not meet these standards are in nonattainment. Severity classifications for nonattainment are marginal, moderate, serious, severe, and extreme. The proposed project's consistency with the applicable policies and standards of the AQMP is analyzed in detail in Section 5.2, *Air Quality*.

Southern California Association of Governments

The City of San Bernardino is in a six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. SCAG is the federally recognized metropolitan planning organization (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs.

As the southern California region's MPO, SCAG cooperates with the SCAQMD, the California Department of Transportation (Caltrans), and other agencies in preparing regional planning documents. San Bernardino and its jurisdictions constitute the San Bernardino County Subregion of the SCAG region, governed by the San Bernardino Associated Governments (SANBAG). SCAG has developed plans to achieve specific regional objectives. The plans most applicable to the proposed project are discussed below.

Regional Comprehensive Plan

The 2008 Regional Comprehensive Plan (RCP) is a major advisory plan prepared by SCAG that addresses important regional issues like housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in southern California for their information and voluntary use for preparing local plans and handling local issues of regional significance.

The RCP presents a vision of how southern California can balance resource conservation, economic vitality, and quality of life. The RCP identifies voluntary best practices to approach growth and infrastructure challenges in an integrated and comprehensive way. It also includes goals and outcomes to measure our progress toward a more sustainable region. The proposed project's consistency with the advisory policies of the 2008 RCP is analyzed in detail in Section 5.8, *Land Use and Planning*.

Regional Transportation Plan

SCAG has also adopted the Regional Transportation Plan (RTP) to help coordinate development of the region's transportation improvements. On May 8, 2008, SCAG adopted the 2008 RTP, *Making the Connections*, a $531.5 billion plan that emphasizes the importance of system management, goods movement, and innovative transportation financing. It provides a regional investment framework to address the region's transportation and related challenges, and looks to strategies that preserve and enhance the existing transportation system and integrate land use into transportation planning. The 2008 RTP is based on Compass Blueprint 2% Strategy land use projections, which are not consistent with San Bernardino County and City General Plan Land Use Elements. The proposed project's consistency with the applicable RTP policies is analyzed in detail in Section 5.8, *Land Use and Planning*.

Compass Blueprint 2% Strategy

In 2004, SCAG adopted the 2% Strategy, which is the part of the 2004 regional growth forecast policy that attempts to reduce emissions and increase mobility through strategic land use changes. Through extensive public participation and land use and transportation modeling and analysis, the program has resulted in a plan that identifies strategic growth opportunity areas (2% Strategy Opportunity Areas), which make up roughly 2 percent of the land area in our region. These are the areas where the 2% Strategy will help cities and counties reap the maximum benefits from regional planning implemented in cooperation and partnership with the local community. The 2% Strategy is a guideline for how and where the vision for southern California's future can be implemented toward improving mobility, livability, prosperity, and sustainability for local neighborhoods and their residents. Goals for the 2% Strategy Opportunity Areas include locating new housing near existing jobs and new jobs near existing housing, encouraging infill development, promoting development with a mix of uses, creating walkable communities, providing a mix of housing types, and focusing development in urban areas.

4.3 LOCAL ENVIRONMENTAL SETTING

The proposed project site is located in unincorporated San Bernardino County, in the City of San Bernardino's sphere of influence (SOI), to the northwest of the City.

4.3.1 Location and Land Use

The project site is in the County of San Bernardino, abutting the northern edge of the City of San Bernardino in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and 2 miles from the junction of Interstate 215 (I-215) and I-15. The site is north of Verdemont and approximately one-third mile northwest of the intersection of Meyers Road and Little League Drive. Spring Trails is bounded by the San Bernardino National Forest on three sides and the Verdemont area of the City of San Bernardino on the southern side. The northern portion of the project site is in the San Bernardino National Forest, which is typically undisturbed natural open space. See Figure 4-1, *General Project Location*.

The project site is vacant with the exception of one single-family residence in the western portion, south of Cable Canyon. Vegetation on the site has substantially recovered from several fires and again supports a diversity of habitat types. Access to four of the parcels is from Meyers Road, with the remaining two obtaining access from Martin Ranch Road prior to entering the project site. The project site is within the City of San Bernardino's unincorporated sphere of influence (SOI) and will be annexed into the City. An adjacent 26.4-acre parcel of land, also located within the City's unincorporated sphere of influence, is being annexed from San Bernardino County to the City. The 26.4 acre annexation area borders the Spring Trails project site on the southwest and consists of six rural residential lots, four of which are occupied with residences and related structures. There is no planned development for this adjacent area and it is not part of the project. The annexation of this area would prevent the creation of a county "island" after the Spring Trails project site is annexed to the City. The location of this 26.4-acre area is identified in Figure 4-6.

Three 115-kilovolt Southern California Edison (SCE) transmission lines traverse the western portion of the site from north to south. SCE also has an access easement over the project site to service these transmission lines.

Surrounding Land Uses

The general vicinity of the site is rural in character, and the northerly portion of the site is within the San Bernardino National Forest, which is typically undisturbed natural open space. The area abutting the southwesterly and southerly boundaries is characterized by estate residential development along Martin Ranch Road and Meyers Road. Development near Little League Drive and Belmont Avenue consists of the Belmont Elementary School and tract development in the Low Residential density (up to three dwelling units per acre). Photographs of the site and surrounding land uses are included in Figures 4-2 through 4-5.

4.3.2 Biological Resources

The Spring Trails project site has been the subject of surveys and assessments since 1998 (Appendices D1 through D16). A comparison of current conditions with those reported in earlier assessments demonstrates that vegetation and wildlife on the project site have remained relatively stable over the last decade, despite the occurrence of one major and one minor fire event during that time. Vegetative composition has remained essentially unchanged, though some of the species and communities are less fully developed than before the 2003 and 2007 fires. The project site contains a variety of plant communities and vegetation types. Seventeen different plant communities have been identified on the site, and a brief description of each community, the plant species common to these communities and the current condition of the habitat is provided in Section 5.3.

General Project Location



General view looking north.

Site Boundary

Source: Google Earth March 31, 2007

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Photo Viewpoints



Site Boundary

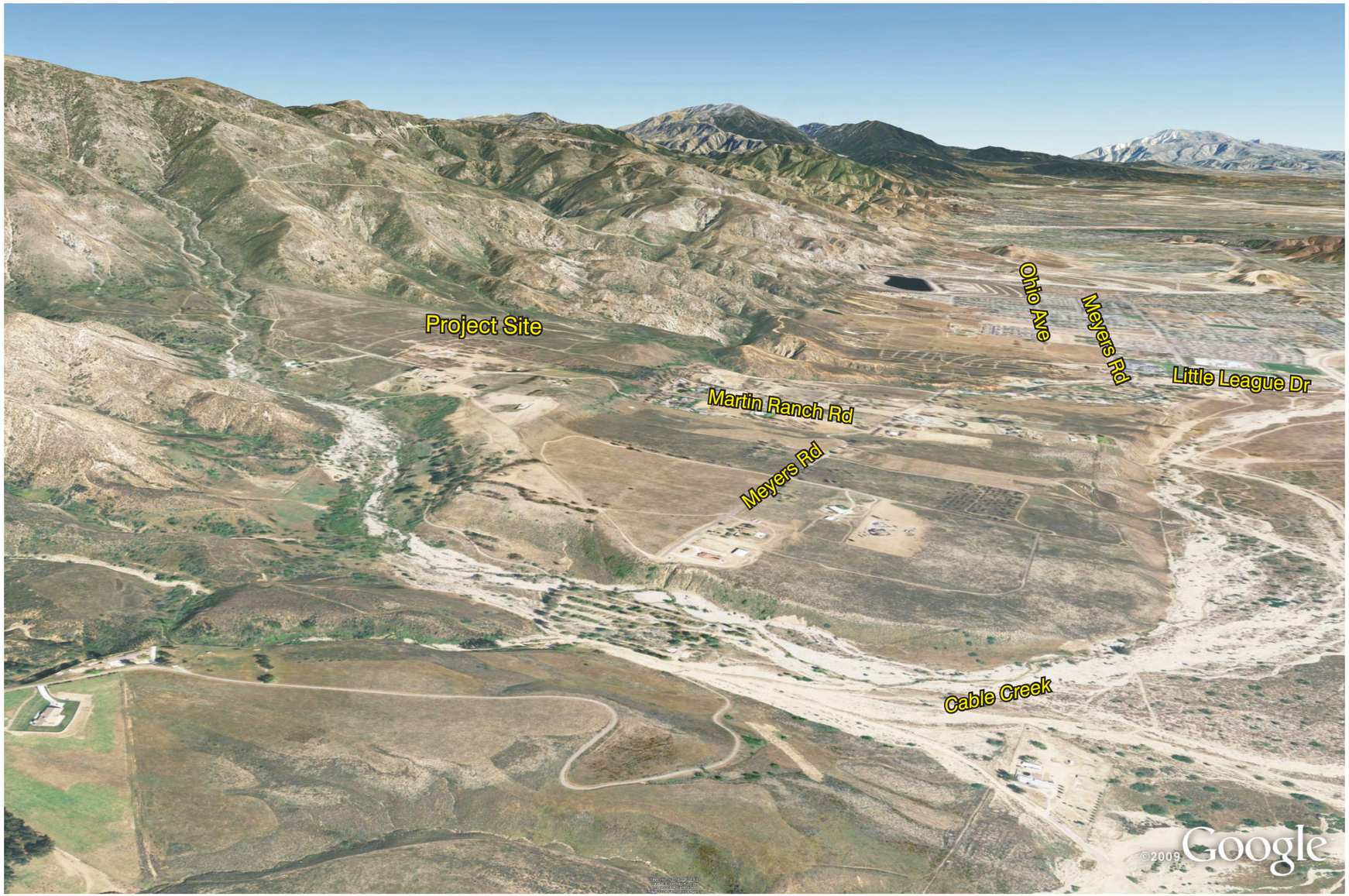
Photo Viewpoins and Viewshed

0 4,600
Scale (Feet)

Source: Google Earth Pro 2009

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Existing Site View 1



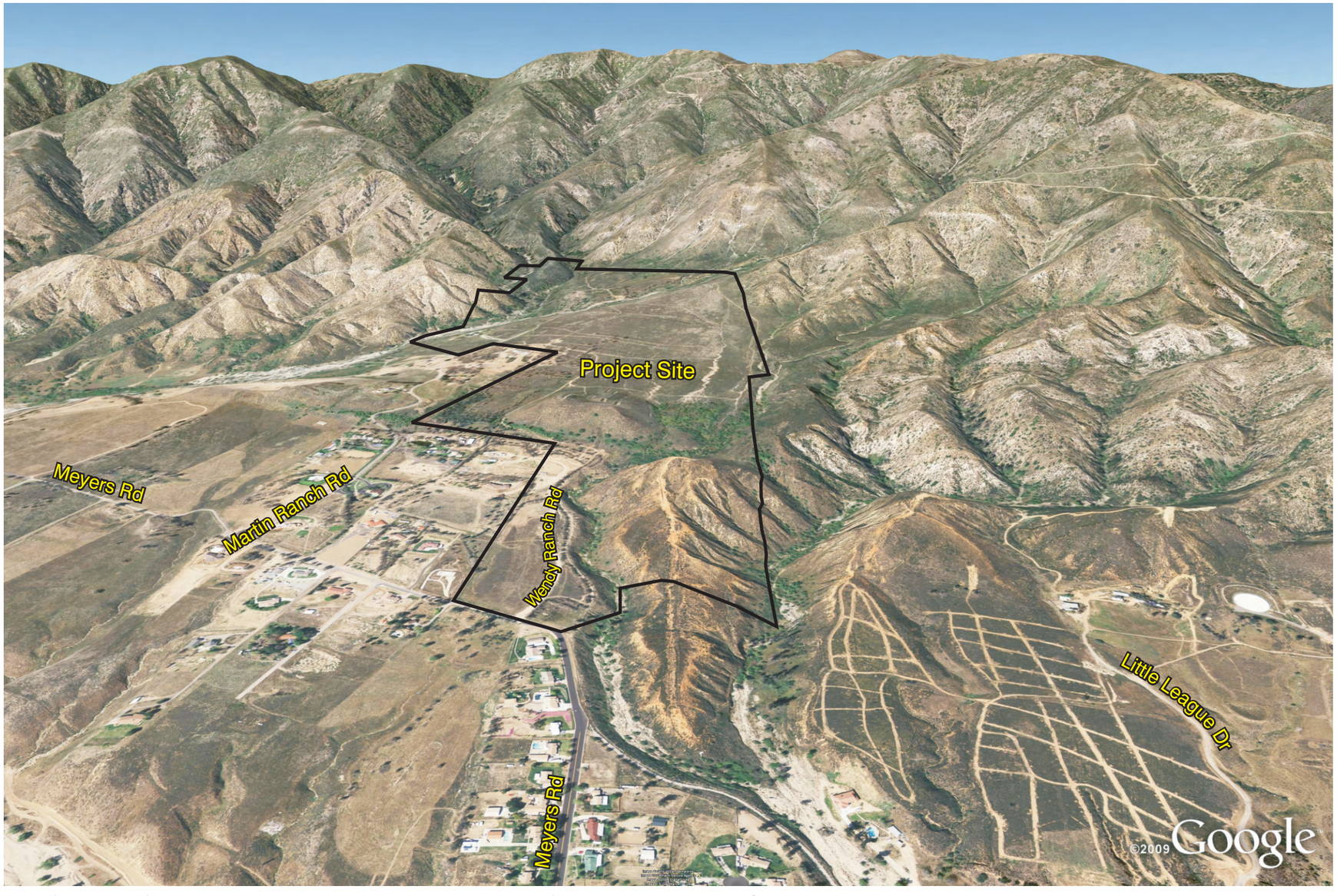
View of project from northwest. Viewpoint is near Deercrest Drive on eastern edge of community of Devore with a east-facing viewshed.

NOT TO SCALE

Source: Google Earth March 31, 2007

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Existing Site View 2



View of project site from south. Approximate viewpoint is near intersection of Meyers Road and Meyers Court, with northerly viewshed.

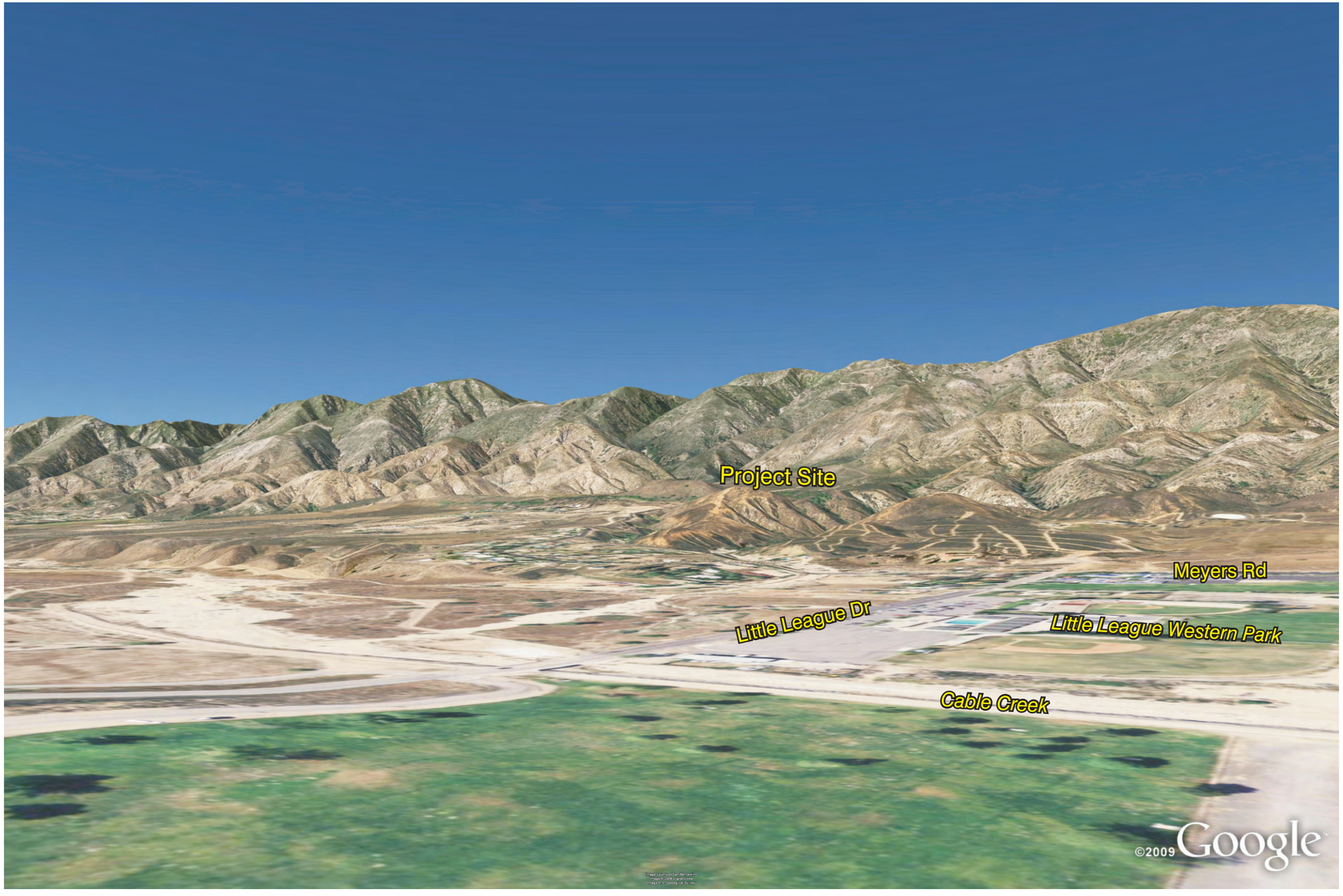
Site Boundary

NOT TO SCALE

Source: Google Earth March 31, 2007

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Existing Site View 3



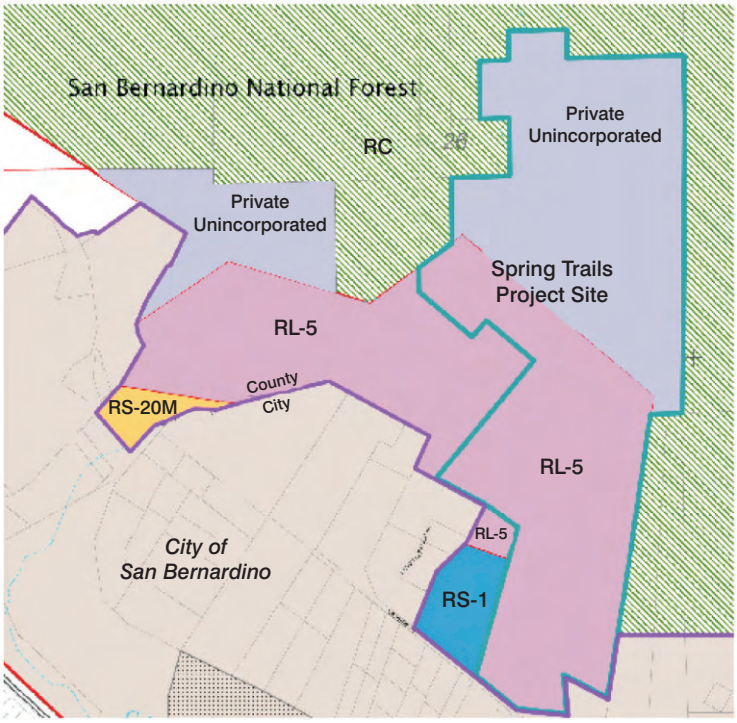
View of project site from south. Viewpoint is at southeast corner of Al Guhin Park with a northerly viewshed.

NOT TO SCALE

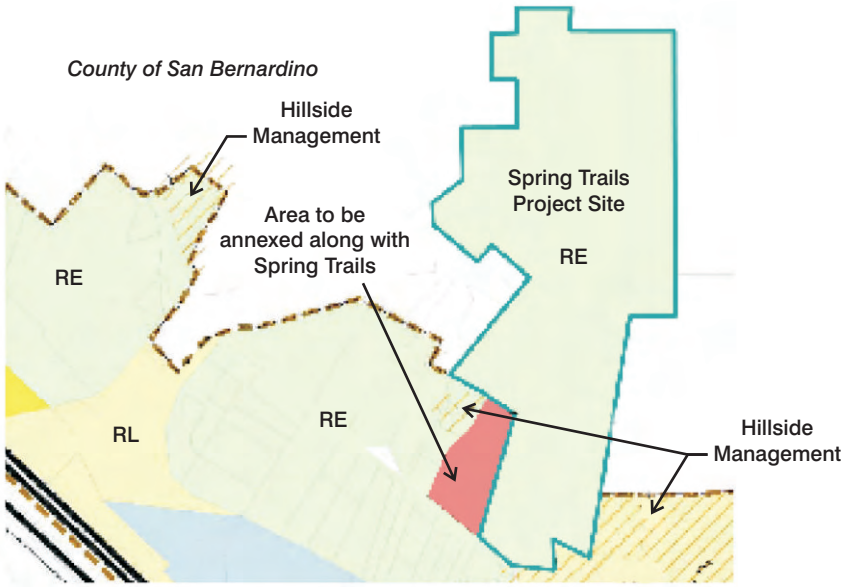
Source: Google Earth March 31, 2007

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Existing Land Use Designations



County of San Bernardino Land Use



City of San Bernardino Land Use

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A number of mammal species have been either directly observed or their presence deduced by diagnostic sign (track, scat, burrows, etc.), and several bird species have been directly observed on the site or have been determined to be present based on vocalizations. Wildlife species either confirmed to be on the site or with a high probability of occurrence on the site have also been highly stable. So far as is known, no sensitive species confirmed to be present on the site during earlier survey work have been extirpated. Conversely, no species confirmed to be absent from the site or with a low probability of occurrence on the site have been found to be present. This level of stability is not particularly surprising due to the vigorous reestablishment of vegetation on the site and the subsequent reestablishment of suitable habitats following the fire events.

4.3.3 Climate and Air Quality

The project site is in the SoCAB. Basinwide conditions are characterized as warm summers, mild winters, infrequent rainfall, moderate onshore daytime breezes, and moderate humidity. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. The average maximum temperature in the local vicinity is 93.0°F in July. The average minimum temperature is reported at 42.8°F in January and February (WRCC 2009).

The topography and climate of southern California combine to produce unhealthful air quality in the SoCAB. The mountain ranges to the east affect the diffusion of pollutants by inhibiting their eastward transport. Additionally, temperature inversions, light winds, shallow vertical mixing, a humid to semiarid climate, and extensive sunlight, in conjunction with a shallow marine layer that hinders horizontal and vertical dispersion of air pollutants, all combine to create degraded quality, especially in the inland valleys. Air quality in the SoCAB generally ranges from fair to poor, similar to air quality in most of coastal southern California. The entire SoCAB experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.



The average maximum temperature within the local vicinity of the project site is 93.0°F in July. The average minimum temperature is reported at 42.8°F in January and February. In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 33.14 inches per year in the project area.

Please refer to Section 5.2, *Air Quality*, and Appendix C of this DEIR for further information concerning existing air quality conditions, an analysis of the project's impacts on local air quality, and an evaluation of consistency with the regional AQMP. Global climate change and the project's impacts on climate change are discussed further in Section 5.16, *Greenhouse Gas Emissions*.

4.3.4 Cultural Resources

Historic and Archeological Resources

The cultural report prepared for the project area reports fourteen resources in the vicinity of the project; however, only eight are within the project boundaries. Only one site, a historical ranch complex, meets CEQA significance criteria. In addition, two other resources have been noted in previous reports but have not been recorded. One site, a spring, is known to be in the project area but vegetation prevented direct observation. A small private cemetery has also been reported by local residents, but two separate surveys failed to locate any remnants of it.

Native American Heritage Commission

The Native American Heritage Commission (NAHC) was consulted to determine if any known sacred lands exist in or near the project area. The NAHC responded that no sacred lands are known in the vicinity of the project site; however, it recommended that seven tribes or individuals be contacted for further information.

Paleontological Resources

On January 23, 2009, and February 19, 2009, Cogstone conducted a paleontology and sediment field assessment for the original areas mapped and for the expanded road areas. Although there are several sedimentary formations that are old enough to contain the remains of extinct Pleistocene animals, all sediments observed onsite were extremely coarse. Materials were primarily sands and gravels up to large cobbles (12.8 cm–25.6 cm) and even boulders (> 25.6 cm). Sediment oxidation in these older deposits ranged from light brown to medium red. Typically in deposits of this type, the fossils deposited are either crushed by the cobbles in the stream channels or are weathered to nothing on the surfaces of the alluvial fans without being buried. Although there are several sedimentary formations that are old enough to contain the remains of extinct Pleistocene animals, these sediments are so coarse that they are not conducive to the preservation of significant fossil resources.

Refer to Section 5.4, *Cultural Resources*, and Appendix E for more information on the historical, archeological, and paleontological setting of the project site and an analysis of the project's environmental impacts on the site.

4.3.5 Geology and Landform

Most of the site consists of a southwest-sloping alluvial terrace into which canyons have been cut on the west and east sides of the site: Cable Canyon and Meyers Canyon, respectively. In the south-central part of the site the San Andreas Fault Zone forms a northwest-trending topographic break. The southeast and northern parts of the site are relatively steep hillsides. Slopes onsite range from about 10 to 15 percent toward the southwest in the central and southwest portions of the site, to 15 to 70 percent with steeply incised drainage areas on the balance of the site. Elevations onsite range from 2,010 feet above mean sea level (amsl) in the southeast portion of the site to 3,540 feet amsl in the northeastern part of the site. The San Andreas Fault is an active fault extending from offshore of Mendocino County southwestward several hundred miles to the Mexican border (Harden 2004). The San Bernardino Segment of the San Andreas Fault passes through the project site.

Geologic units onsite include outcrops of the metamorphic rocks schist and gneiss in the northern part of the site and older (late Pleistocene to early Holocene) alluvial deposits in the central and southwest parts of the site. The alluvial deposits consist of boulders, cobbles, and gravels in a matrix of silty sand, sand, and sandy silt, and are late Pleistocene to Holocene in age.[1] Refer to Section 5.5, *Geology and Soils,* and Appendices G, H1, and H2 for additional information on the site's geology.

4.3.6 Hazards

Wind Hazards

The project site is located in the foothills of the San Bernardino Mountains in an area that periodically experiences high wind velocities. The City of San Bernardino General Plan has designated the project site as

[1] The Pleistocene Epoch extends from roughly 10,000 years before present (ybp) to about 1.8 million ybp, and the Holocene Epoch extends from the present to about 10,000 ybp.

being in a high wind area. Winds in this area are most often driven by the dominant land breeze circulation system. Regional wind patterns are dominated by daytime onshore wind generated by the differences in temperature between the inland deserts and the cold water of the Pacific Ocean. The most significant wind hazards occur at the canyon mouths and valleys extending downslope from the San Bernardino Mountains. The highest velocities are associated with downslope canyon and Santa Ana winds, which have been measured at 90 to 100 miles per hour.

Fire Hazards

The project site is in the Foothill Fire Zones Overlay District, as designated by the City of San Bernardino. The purpose of this district is to mitigate the spread of fire, minimize property damage, and reduce risks to public health and safety. The overlay district consists of three foothill fire zones, which have different degrees of hazard based on slope, type of fuel present, and natural barriers.

- **Fire Zone A (Extreme Hazard):** Fire Zone A is determined based on slope. Fire Zone A includes areas with slopes of 30 percent or greater.

- **Fire Zone B (High Hazard):** Fire Zone B is also determined based on slope. Fire Zone B includes areas with slopes between 15–30 percent.

- **Fire Zone C (Moderate Hazard):** Fire Zone C includes those areas with slopes of 0 to 15 percent.

- **Fire Zone C, Abutting Wildlands:** Fire Zone C, Abutting Wildlands, is defined as those lots on the perimeter of a tract that are adjacent to wildlands.



The project site has approximately 121 acres of Fire Zone A, 112 acres in Fire Zone B, and 119 acres in Fire Zone C.

The project site has been exposed to wildfire due to the steep terrain, highly flammable chaparral vegetation of the foothills of the San Bernardino Mountains, and high winds. The California Department of Forestry and Fire Protection (CAL FIRE) has records of wildland fires dating to the beginning of the 20th century on the proposed project site. Large fires continue to occur at all times of the year in areas that have receptive fuel beds, in some cases burning several times every few years. The occurrence of large fires also corresponds to periods of extremely high wind conditions.

In November 1980, the Panorama Fire burned through the site, leaving only the mature eucalyptus trees and vegetation in the canyon areas. In the fall of 2003, the Verdemont/Devore area, including the proposed project site, was burned by the Old Fire that started in Old Waterman Canyon in north San Bernardino and traveled west to the I-15 /I-215 interchange, immediately west of the project vicinity. The entire Spring Trails site was burned, with the exception of the extreme northern portion of Cable Canyon, altering the conditions of the site. Wildfires affected these same areas again in October 2007 when a fire at Martin Ranch Road and Meyers Road burned 123 acres (CAL FIRE 2007b). Refer to Section 5.6, *Hazards and Hazardous Materials*, and Appendices G, H1, and H2 for additional information on site hazards.

4.3.7 Hydrology

The project site is tributary to Cable Canyon and Cable Creek; Cable Canyon passes through the site. Existing drainage from the site is by surface flow. Cable Canyon and Cable Creek are in the Santa Ana River Watershed; Cable Creek is tributary to Reach 4 of the Santa Ana River via three intermediate watercourses including Lytle Creek Wash. Reach 4 of the Santa Ana River and Lytle Creek Wash are each listed on the

2006 List of Water Quality Limited Segments, prepared pursuant to Section 303(d) of the Water Quality Act, as impaired by pathogens.

The project site lies over the Bunker Hill Groundwater Basin that underlies much of the San Bernardino Valley. Groundwater levels beneath the site are generally greater than 50 feet below ground surface (bgs). Groundwater was found at 20 feet bgs in two borings done in a 2000 geotechnical investigation in an isolated area in the eastern part of the site along the northeast side of the San Andreas Fault. Refer to Section 5.7, *Hydrology and Water Quality*, and Appendix I for additional information on site hydrology.

4.3.8 Noise

Community noise levels are measured in terms of the A-weighted decibel (dBA). A-weighting is a frequency correction that correlates overall sound pressure levels to the frequency response of the human ear. The noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted decibel. The primary source of existing noise generated within the project site is from transportation noise generated by I-215, approximately 0.70 mile to the south, and Meyers Road (Martin Ranch Road). Stationary sources of noise are from the nearby residential uses (heating ventilation and air conditioning systems, landscaping equipment, etc.). Please refer to Section 5.10, *Noise*, in this DEIR for further information concerning existing noise conditions in the project area and an analysis of this project's impacts on the local noise environment.

4.3.9 Scenic Features

Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side. The northern portion of the project site is in the San Bernardino National Forest, which is typically undisturbed natural open space.

The project site is relatively undisturbed with the exception of one single-family residence in the western portion, south of Cable Canyon, and consists of canyons and steep hillsides with gently sloping alluvial benches in between. The elevation of the site ranges from approximately 2,010 feet amsl at its southern boundary to approximately 3,540 feet amsl at the northern boundary, a difference of 1,530 feet.

According to the California Scenic Highway Mapping System of the California Department of Transportation, the project site is not on or near a major state-designated scenic highway (Caltrans 2009). Goal OS 5, Policy OS 5.3 of the County of San Bernardino General Plan designates I-15 from the junction with I-215 northeast to the Nevada state line, except all incorporated areas, as a County Scenic Route. The project site is southeast of this intersection and is not visible from I-15.

4.3.10 Traffic and Transportation

Existing Transportation Networks

Roadway Network

Regional access to the project site is provided by I-215 and I-15. Local access is provided by various roadways in the vicinity of the site. Surrounding east–west roadways include Meyers Road, Belmont Avenue, Irvington Avenue, an unnamed frontage road, and Kendall Drive. North–south roadways near the project site include Glen Helen Parkway, Little League Drive, Magnolia Avenue, and Palm Avenue. Little League Drive, Palm Avenue, and Kendall Drive are designated secondary arterial roads in the San Bernardino General Plan.

Meyers Road, Belmont Avenue, Irvington Avenue, the frontage road, and Magnolia Avenue are designated collector streets in the San Bernardino General Plan. Figure 5.14-1, *City of San Bernardino Circulation Plan*, in Chapter 5.14, *Transportation and Traffic,* shows the street network found in the City of San Bernardino General Plan Circulation Element.

Public Transit and Alternative Transportation Networks

The City of San Bernardino is serviced by the Omnitrans bus network and the Metrolink regional railway. The nearest bus stop serviced by Omnitrans is at Ohio Street and Palm Avenue, a little over two miles walking distance from the project site. A park and ride lot and station for Omnitrans' sbX bus rapid transit service is planned near the intersection of Palm Avenue and Kendall Drive. The Metrolink Station is near the intersection of West Third Street and North K Street and is serviced by the Omnitrans bus service.

Alternative transportation is supported by a series of multipurpose and Class I through Class III bicycle lanes throughout the City. The bicycle and trail network is shown in Figure 5.14-4, *Multipurpose Trails and Bicycle Routes*, in Chapter 5.14, *Traffic and Transportation*. The nearest dedicated alternative transportation route to the project site is the Foothills Trail, which traverses northern San Bernardino and continues down Magnolia Avenue, approximately two miles walking distance from the project site.

Existing Levels of Service

Project area intersections currently operate at levels of service of D or better. An LOS of D or better is considered acceptable by the San Bernardino General Plan. The intersections included in the existing conditions for level of service are:

- Little League Drive at Meyers Road
- Little League Drive at Belmont Avenue
- Little League Drive at Frontage Road
- Little League Drive at Kendall Drive
- Magnolia Avenue at Belmont Avenue
- Palm Avenue at Belmont Avenue
- Palm Avenue at Irvington Avenue
- Palm Avenue at Kendall Drive
- Palm Avenue at I-215 NB Ramps
- Palm Avenue at I-215 SB Ramps

The project would also contribute traffic to both the I-215 and I-15. Acceptable freeway LOS is E or better, as established by the San Bernardino County Congestion Management Plan. The segment of I-215 analyzed for Spring Trails is the segment between Palm Avenue and the I-15. This section of the I-215 currently operates at a level of service of B to C for AM and PM peak hours (SANBAG 2003). The section of I-15 analyzed for Spring Trails is the section between Sierra Avenue and I-215, which also currently operates at an LOS of B to C during AM and PM peak hours (SANBAG 2003).

Please refer to Section 5.14, *Traffic and Transportation*, and Appendix K of this DEIR for more information on the existing traffic setting and an analysis of traffic impacts.

4.3.11 Public Services and Utilities

Water

Potable and recycled water would be supplied to the proposed project area by the City of San Bernardino Municipal Water Department (SBMWD). SBMWD obtains water mainly from the Bunker Hill Groundwater (BHG) Basin and provides service to the City of San Bernardino and surrounding unincorporated areas. It has a service area of 45 square miles, 151,000 customers, 551 miles of pipeline, 4,000 fire hydrants, 4 treatment plants, 32 storage facilities with a combined capacity of 100 million gallons, 27 chlorinated facilities, and 66 booster pumps. The service area covers portions of the City of San Bernardino and outlying undeveloped areas, including parkland and flood protection areas. Population within the service area is expected to increase from 173,359 in 2005 to 186,454 in 2030 (SBMWD 2005).

The main planning document used by SBMWD to guide infrastructure planning and water supply decision-making is the urban water management plan (UWMP). SBMWD is required by the Urban Water Management Planning Act to develop a UWMP that is to be updated every five years. The most recent UWMP was released in 2005 and provides guidance for the planning period between 2000 and 2020.

The SBMWD also coordinates with other water utility agencies in the San Bernardino Valley, as required by the Municipal Water District Act, and enacted through San Bernardino Valley Municipal Water District (SBVMWD), a State Water Project contractor for the San Bernardino Valley, including the BHG Basin. SBMWD must coordinate its plans with SBVMWD with respect to groundwater management issues. SBMWD also has an agreement with SBVMWD for delivering treatment plant discharges to the Santa Ana River to satisfy water rights of downstream users.

Potable Water

Groundwater is pulled from the BHG Basin through 57 wells that range in depth from 50 to 1,300 feet. Water is pumped from these wells at rates from 50 to 3,500 gallons per minute (SBMWD 2005). The water is distributed throughout the service area through a system of pipelines, storage reservoirs, pumping stations, hydroelectric generating stations, manual and automatic control valves, fire hydrants, and water meters throughout 19 individual pressure zones. Pressure zones are at elevations of 1,249 to 2,100 feet amsl. The nearest reservoir to the project site is the Meyers Canyon Reservoir in the 2,100-foot pressure zone, in the northern portion of the community of Verdemont.

Nonpotable Water

SBMWD operates the Margaret H. Chandler Water Reclamation Plant (WRP), which treats wastewater to secondary treatment levels and has a capacity of 33 million gallons per day. This allows it to meet National Pollution Discharge Elimination Standards but it is not used as nonpotable water. After being treated to secondary standards, a portion of the effluent from WRP is sent to the Rapid Infiltration Extraction Tertiary Treatment Facility in the City of Colton. This facility is jointly operated by the City of Colton and SBMWD and is under the sole ownership of the City of San Bernardino. About 16,000 acre-feet a year of the treated effluent from this facility is used to maintain water flows in the Santa Ana River. The remainder has potential for reuse.

Sewer System

The nearest sewer line to the proposed project site is an eight-inch diameter sewer line at the intersection of Meyers Road and Little League Drive to the southeast of the site. From here, wastewater drains east on West

Little League Drive to Kendall Drive, 40th Street, Mountain View Avenue, and then to Waterman Avenue before emptying into the WRP. The WRP is a secondary treatment facility serving a population of over 185,000, including the cities of San Bernardino and Loma Linda, the East Valley Water District customers (some of whom are within the City of San Bernardino), the San Bernardino International Airport, Patton State Hospital, and parts of unincorporated San Bernardino County.

Stormwater Drainage

The existing drainage on the proposed project's site follows generally natural patterns, with most stormwater drainage flowing into Cable Canyon and Meyers Canyon drainageways. In general, stormwater runoff flows from Cable Canyon to Cable Creek, and then into the Devil Creek Diversion Channel, where it is directed to Lytle Creek and eventually into the Santa Ana River. Onsite drainage flows into one of four drainage areas (drainage areas A, B, C, and D), which are described in more detail in Section 5.7, *Hydrology*. These natural drainage patterns would be preserved for the most part with the proposed development of the site.

Solid Waste

Solid waste service would be provided by the City of San Bernardino Refuse and Recycling Division. The Refuse and Recycling Division provides service to residential and commercial customers for solid waste, recyclables, and green waste pick-up. For 2007, the City of San Bernardino disposed of 227,594 tons of solid waste (CIWMB 2009). This amount reflects the total waste disposed after diversion. Mainly two landfills would be receiving solid waste from the proposed project: the Mid-Valley and San Timoteo sanitary landfills. The Mid-Valley landfill has a remaining capacity of 35,270,000 cubic yards, and the permitted maximum daily disposal rate is 7,500 tons. San Timoteo sanitary landfill has a remaining capacity of 9,491,163 cubic yards, and the maximum daily disposal rate is 1,000 tons.

Other Utilities

Electrical service would be supplied at the proposed project site by Southern California Edison. Although SCE has an easement on the site, with 115 kV utility lines traversing the site western portion of the site, there are no existing electrical utilities on the majority of the site. The existing residence onsite and the existing residences in the surrounding areas have electrical service.

The proposed project would be in the service area of the Southern California Gas Company. With the exception of the existing onsite residence and adjacent existing residences, there are no existing SCGC utilities onsite.

Charter Communications would provide cable television service to the proposed project site. With the exception of the services provided to the existing onsite residence and adjacent existing residences, there is no existing cable service on the proposed project site.

Telephone service would be provided by Verizon. With the exception of service to the existing onsite residence and adjacent existing residences, there is no existing telephone or telecommunication service on the proposed project site.

Please refer to Chapter 5.15, *Utilities and Service Systems*, for more information on the existing conditions for utilities and an analysis of the project's impacts on water supply, wastewater conveyance, solid waste generation, and other utility services.

4.3.12 General Plan and Zoning

County of San Bernardino

The project site is in the Verdemont community of unincorporated San Bernardino County and in the City of San Bernardino's SOI. The site is currently subject to the County of San Bernardino's General Plan and Zoning Code. As shown in Figure 4-6, *Existing Land Use Designations*, under the County's General Plan, the northern portion of the site—approximately 160 acres—is private unincorporated land, designated Resource Conservation (RC). The southern portion of the site, approximately 190.6 acres, is designated Rural Living (RL-5), which allows up to one dwelling unit per five acres. The adjacent 26.4-acre area that is part of the proposed annexation is designated by the County as Single-Family Residential (RS-1) on the upper portion and RL-5 on the lower portion. There are currently four homes existing in this area.

City of San Bernardino

As seen in Figure 4-6, the entire project site is currently prezoned in the General Plan by the City of San Bernardino and identified as Residential Estate (RE), allowing one dwelling unit per acre.

City Sphere of Influence

The Spring Trails site was placed in the City of San Bernardino's unincorporated SOI in September 1996, when the local agency formation commission (LAFCO) approved an SOI expansion for the City of San Bernardino. A sphere of influence, as defined by California Government Code, is a "plan for the probable physical boundaries and service area of a local agency as determined by the Commission." The SOI includes 6,829 acres, or 11 square miles, of unincorporated county territory. The County of San Bernardino has jurisdiction over these areas and the County's General Plan Land Use Plan provides land use designations for the SOI.

The proposal includes the annexation of the project site and of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. The area is adjacent to the west of the project site along Meyers Road and currently has four occupied, multiple-acre lots. As shown in Figure 4-6, the parcels are currently designated RS-1 and RL-5 under the county. The 26.4-acre area adjacent to Spring Trails is being included in the annexation element of the proposed project to prevent the creation of a county island within the City of San Bernardino. The creation of an island is not allowed under regulations governing the LAFCO. A land use proposal has not been submitted for this 26.4-acre area, and it is not owned or otherwise under the control of the applicant.

The proposed project includes a request for annexation of the project site and adjoining parcels (a total of approximately 377 acres) into the City of San Bernardino. The annexation process would begin pending approval of the project application by the San Bernardino Mayor and Common Council.

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

A. A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

B. A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impact analyses contained in the various topical sections of Chapter 5, *Environmental Analysis*, use method B, which consists of the buildout projections in the City's General Plan (November 2005). The buildout potential for the City of San Bernardino, in accordance with the adopted General Plan, is shown on Table 4-1. As a result, this DEIR addresses the cumulative impacts of development within the City of San Bernardino and its SOI, which includes the project site.

Table 4-1
City of San Bernardino Buildout Projections

	City Area Projected Growth through Buildout	*Sphere of Influence*	*Total*
Dwelling Units	82,714	12,950	95,664
Population	276,264	42,976	319,241
Employment	338,712	16,918	355,629
Nonresidential sf.	189,934,304	13,670,628	203,604,932

Source: Table LU-3, City of San Bernardino General Plan, 2005.
sf = square feet

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5. Environmental Analysis

5.1 AESTHETICS

5.1.1 Environmental Setting

Regulatory Framework

City of San Bernardino Development Code

Property Development Standards (Chapter 19.20)

This chapter of the Development Code contains specific standards to ensure that development would produce an urban environment of desirable character that is harmonious with the existing and future development, consistent with the General Plan. Specific provisions related to aesthetics include:

- Design Considerations (Section 19.20.030.4): The following standards are in addition to the specific design guidelines for single family residential development projects found in the City's Development Code Section G 19.04.050:

  A. The proposed development shall be of a quality and character which is consistent with the community design goals and policies including but not limited to scale, height, bulk, materials, cohesiveness, colors, roof pitch, roof eaves and the preservation of privacy.

  B. The design shall improve community appearance by avoiding excessive variety and monotonous repetition.

  C. Proposed signage and landscaping shall be an integral architectural feature which does not overwhelm or dominate the structure or property.

  D. Lighting shall be stationary and deflected away form all adjacent properties

  E. Mechanical equipment, storage, trash areas, and utilities shall be architecturally screened from public view.

  F. With the intent of protecting sensitive land uses, the proposed design shall promote a harmonious and compatible transition in terms of scale and character between areas of different land uses.

- Glare (Section 19.20.030.11): No glare incidental to any use shall be visible beyond any boundary line of the parcel.

- Lighting (Section 19.20.030.14): Exterior lighting shall be energy efficient and shielded or recessed so that direct glare and reflections are contained within the boundaries of the parcel, and shall be directed downward and away from adjoining properties and public rights-of-way. No lighting shall blink, flash, or be unusually high intensity or brightness. All lighting fixtures shall be appropriate in scale, intensity, and height to the use it is serving. Security lighting shall be provided at all entrances/exits.

Hillside Management Overlay District (Chapter 19.17)

The purpose of the Hillside Management Overlay District (HMOD) is to provide for low-density residential development in City hillside areas. The intent is to encourage environmentally sensitive residential development that complements the natural and visual character of the hillsides. The HMOD specifies maximum density based on topography and a slope-density formula.

- Development Performance Standards (19.17.070.1.B): Grading shall be designed to:

  1. Conserve natural topographic features and appearances by means of land sculpturing to blend graded slopes and benches with natural topography.

  2. Retain major natural topographic features such as canyons and prominent landmarks

- Development Performance Standards (19.17.070.4.G): Introduction of landscaping within the hillside areas should make maximum use of texture, color, and be capable of blending in with the natural landscape, and help to soften the effects of buildings, walls, pavement, and grading.

- Development Performance Standards (19.17.070.5)

  A. Dwelling units and structures shall be compatible with the natural surroundings of the area and shall not dominate the natural environment.

  B. Exterior finishes of dwelling units and structures should blend in with the natural surroundings by using earth tone colors and avoiding reflective materials or finishes.

  C. Site design should utilize varying setbacks, building heights, innovative building techniques, and building and wall forms which serve to blend buildings into the terrain.

  D. Dwelling units and structures shall be sited in a manner that will:

     1. Retain outward views from each unit;

     2. Preserve or enhance vistas, particularly those seen from public places;

     3. Preserve visually significant rock outcroppings, natural hydrology, native plant materials, and areas of visual or historical significance.

  E. The highest point of any structure shall not be located above the ridgeline. A ridgeline is a long, narrow, conspicuous elevation which is visible north of Highland Avenue, from a freeway, major arterial, secondary arterial, or collector street, which forms part of the skyline or is seen as a distant edge against a backdrop of land at least 300 feet horizontally behind it.

     1. Use the natural ridgeline as a backdrop for structures;

     2. Use landscape plant materials as a backdrop; and

     3. Use the structure to maximize concealment of cut slopes.

Foothill Fire Zone Overlay District (Chapter 19.15)

This chapter contains standards to mitigate the spread of fire, to help minimize property damage, and to reduce risks to public health and safety. The Foothill Fire Zone Overlay District (FF) specifies development standards relating to access and circulation, site and street identification, roadside vegetation, water supply, erosion control, construction, property transfers, and maintenance of firebreak fuel modification zones.

The FF identifies three fire zones with different degrees of hazard based on slope, type of fuel, and natural barriers. The foothill fire zones are:

- Fire Zone A, Extreme Hazard. Areas with slopes of 30 percent or greater.
- Fire Zone B, High Hazard. Areas with slopes of 15–30 percent
- Fire Zone C, Moderate Hazard. Areas with slopes of 0–15 percent

Approximately one-third of the site is in Fire Zone A, one-third of the site is in Fire Zone B, and the remaining third is in Fire Zone C. Areas in the Foothill Fire Zones are required to be developed with proper building separation, landscaping, and building materials; adequate emergency access and evacuation routes; and sufficient water resources.

Visual Character

The project site is on the northern edge of the City of San Bernardino in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and the junction of Interstate 215 (I-215) and I-15. Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side. The northern portion of the project site is in the San Bernardino National Forest, which is typically undisturbed natural open space. See Chapter 4, *Environmental Setting*, Figures 4-1 through 4-5.

The project site is vacant with the exception of one single-family residence in the western portion, south of Cable Canyon. Vegetation on the site has substantially recovered from several fires and again supports a diversity of habitat types. The adjacent 26.4-acre annexation area consists of six rural residential parcels, four of which are occupied with residences and related structures. Access to four of the parcels is from Meyers Road, with the remaining two obtaining access from Martin Ranch Road prior to entering the project site. There is no planned development for this adjacent area.

Three 115-kilovolt Southern California Edison (SCE) overhead electric lines traverse the western portion of the site from north to south. SCE also has an access easement over the project site to service these electric lines.

Visual Resources

Visual resources on the project site include a variety of vegetation communities, trees, and other natural characteristics. The hilly terrain of the proposed project site is covered with 17 different plant communities and up to 4,000 trees (MBA 2007; PBS&J 2009). Rocky washes and outcroppings intermix with the vegetation and tree communities throughout the project site. The vegetation types include chaparral, grasslands, oak woodlands, and wetlands (see Chapter 5.3, *Biological Resources,* for more information on vegetation details). The majority of the onsite trees are nonnative eucalyptus; however, a number of native and nonnative trees, including canyon live oak, California sycamore, and white alder, are also present onsite. The vegetation communities, the variety of trees, and rocky washes visually enhance the landscape and are characteristic of the San Bernardino foothills.

Landform

Spring Trails is on the western flank of the San Bernardino Mountains, which run for approximately 60 miles east from the Cajon Pass to the Coachella Valley. The highest peak in the range is Mount San Gorgonio, which has an elevation of 11,501.6 feet and is the highest peak in southern California. Most of the range is in the San Bernardino National Forest.

The project site is relatively undisturbed and consists of canyons and steep hillsides with gently sloping alluvial benches in between. The topography of the site varies from steep (over 30 percent slopes) in the north and southeast portions to gentle (0–15 percent slopes) in the central portion. The elevation of the site ranges from approximately 2,010 feet above sea level at its southern boundary to approximately 3,540 feet at the northern boundary, a difference of 1,530 feet. The site slopes to the southwest at approximately 10 to 15 percent.

The southern portion of the site is traversed by two faults: the main trace of the San Andreas Fault and, to its north, a secondary extension of the main trace fault. The fault zone of the main trace ranges from approximately 50 feet to 150 feet wide, and the fault zone of the secondary trace is approximately 40 feet wide. The site has been shaped by the San Andreas Fault and the Cable Canyon and Meyers Canyon drainage ways and includes gently sloping alluvial benches, canyons, and steep hillsides.

Scenic Vistas and Corridors

According to the California Scenic Highway Mapping System of the California Department of Transportation, the project site is not on or near a major state-designated scenic highway (Caltrans 2009). Goal OS 5, Policy OS 5.3, of the County of San Bernardino General Plan designates I-15 from the junction with I-215 northeast to the Nevada state line, excepting all incorporated areas, as a County Scenic Route. The project site is not visible when traveling northbound on the I-15.

5.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AE-1 Have a substantial adverse effect on a scenic vista.

AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

AE-3 Substantially degrade the existing visual character or quality of the site and its surroundings.

AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.1.3 Environmental Impacts

A comparison of existing conditions to graphics depicting anticipated physical changes resulting from project development provides the necessary framework for evaluating visual impacts. In addition, the intent, policies, and relationship among the Hillside Management Overlay District, the Foothill Fire Zones Overlay District, relevant landscaping, and design standards in the Spring Trails Specific Plan must be considered in evaluating the significance of aesthetic impacts.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore the annexation would not contribute to impacts related to aesthetics.

Development Plan

The Spring Trails plan accommodates 307 single-family detached units (306 new units and 1 existing residence), which are set among neighborhoods separated by open space corridors, drainage ways, roadways, and sloped areas. A system of pathways connects the residences with neighborhood parks and natural open spaces. Development is focused onto approximately 241.5 acres, or about 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space.

The Spring Trails development plan assumes that the SCE overhead electric lines will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative development plan that accommodates the electric lines aboveground has been prepared for Spring Trails (as shown in Figure 3-3A, *Alternative (Overhead Electric Lines) Development Plan*, in Section 3, *Project Description)*. The alternative plan has the same development footprint as the preferred development plan and is the same as the preferred plan in every respect except for the treatment of the land beneath the electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units (303 new units and 1 existing residence) compared to 307 units proposed in the preferred development plan.

Approximately 193 acres of the total site would be graded and improved for the onsite development of residential lots, roadways, trails, detention basins, fuel modification zones, and parks. An additional 23.7 acres would be graded and improved for offsite access, including 4.2 acres for the primary access road and 19.5 acres for the secondary access road. Primary access to Spring Trails would be provided by a new road extending from the southeastern corner of the site and connecting to Little League Drive. Secondary access is planned via a new road extending from the southwestern corner of the site to the frontage road along I-215. Figure 3-5, *Circulation Plan,* depicts the planned roadway system, and detail for the roadway cross-sections is shown in Figure 3-6, *Roadway Cross-Sections.* Necessary public streets, both on- and offsite, would be improved by the developer and dedicated to the City. All roadways would be two-way travel with one lane in each direction and with varying treatments for parkways, sidewalks, and parking, as depicted in Figure 3-6. The project's development footprint and its relationship to onsite topography are shown in Figure 5.1-1, *Development Footprint*.

Spring Trails Specific Plan Development Standards

Spring Trails Specific Plan development standards are intended to shape the physical form of Spring Trails. The purpose of the Specific Plan is to provide unique development standards and guidelines to allow the creation of a high-quality residential community.

Development Standards

Section 3, Development Standards, of the Specific Plan, includes land use designations, permitted uses, and development standards that are intended to shape the physical form of Spring Trails. Unless expressly stated, the Spring Trails Specific Plan development standards shall supersede the relevant provisions of the City of San Bernardino's Development Code. Any development regulation and guideline not addressed in the Specific Plan would be subject to the City's adopted regulations at the time of the individual request.

Landscape Plan

The Spring Trails Specific Plan includes a Landscape Plan. Project landscape has been designed to reflect the surrounding environment. Plant materials have been chosen based on the area's environmental conditions and fire protection needs, as well as the aesthetics they would bring to the community. The landscape design guidelines for Spring Trails are intended to guide the project developer by describing the design intent for the landscape features and amenities of Spring Trails. There are four landscape zones, whose intent is to seamlessly and naturally blend the community landscape with the surrounding natural environment.

- **Natural Open Space Zone.** The natural open space zone contains a mixture of Riversidean sage scrub, chaparral, nonnative grassland, and several riparian and woodland communities. This area is generally located in the perimeter areas of Spring Trails outside of the fuel modification zones and would be preserved. If any intentional or unintentional grading occurs within this zone, the development contractor would restore this zone to its original state.

- **Transition Open Space Zone.** The transition open space zone is primarily located on the perimeter, ungraded slopes of the development footprint and provides an interface between natural open space areas and the more formal landscape of the residential neighborhoods. The transition open space zone is intended to be planted in such a manner as to blend into the ungraded natural areas. This zone is in fuel modification zone C, and plant materials in the transition open space zone would be on the approved fuel modification plant palette found in Table 3.6 of the Specific Plan.

- **Refined Open Space Zone.** The refined open space zone generally consists of open space areas within Spring Trails and includes natural and manufactured slopes. Portions of the refined open space zone are in fuel modification zones A and B, and plant materials in the refined open space zone would be on the approved Landscape Zones Plant Palette in Table 3.6 of the Specific Plan.

- **Theme Zone.** The theme zone occurs in parks and along streets in Spring Trails. The streetscape plant palette should provide a unifying theme and a sense of permanence. The landscape features within this zone, such as entry monuments, also provide character supportive to the landscape theme of Spring Trails, setting the tone and establishing the uniqueness of the community.

The Specific Plan details other landscape components, including parks, community entry, and street cross-section detail, to demonstrate methods to achieve a community that is sensitively integrated into its physical surroundings. The Spring Trails Specific Plan provides parks and open space that serve multiple functions: recreational opportunities, an interconnecting system of trails, and visual buffers and landmarks.

All setback areas fronting on or visible from a public street and all recreation/common open space areas would be landscaped and permanently maintained in an attractive manner. Such landscaping would primarily consist of turf, lawn, groundcovers, trees, shrubs, and other living plants, and may also include some use of artificial turf. Permanent, 100 percent automatic irrigation facilities would be provided in all landscaped areas as appropriate for the landscape type. Landscaping would comply with the Landscape Zones Plant Palette (Table 3.6 of the Specific Plan) and the Fire Protection Plan.

Fuel Modification Zones

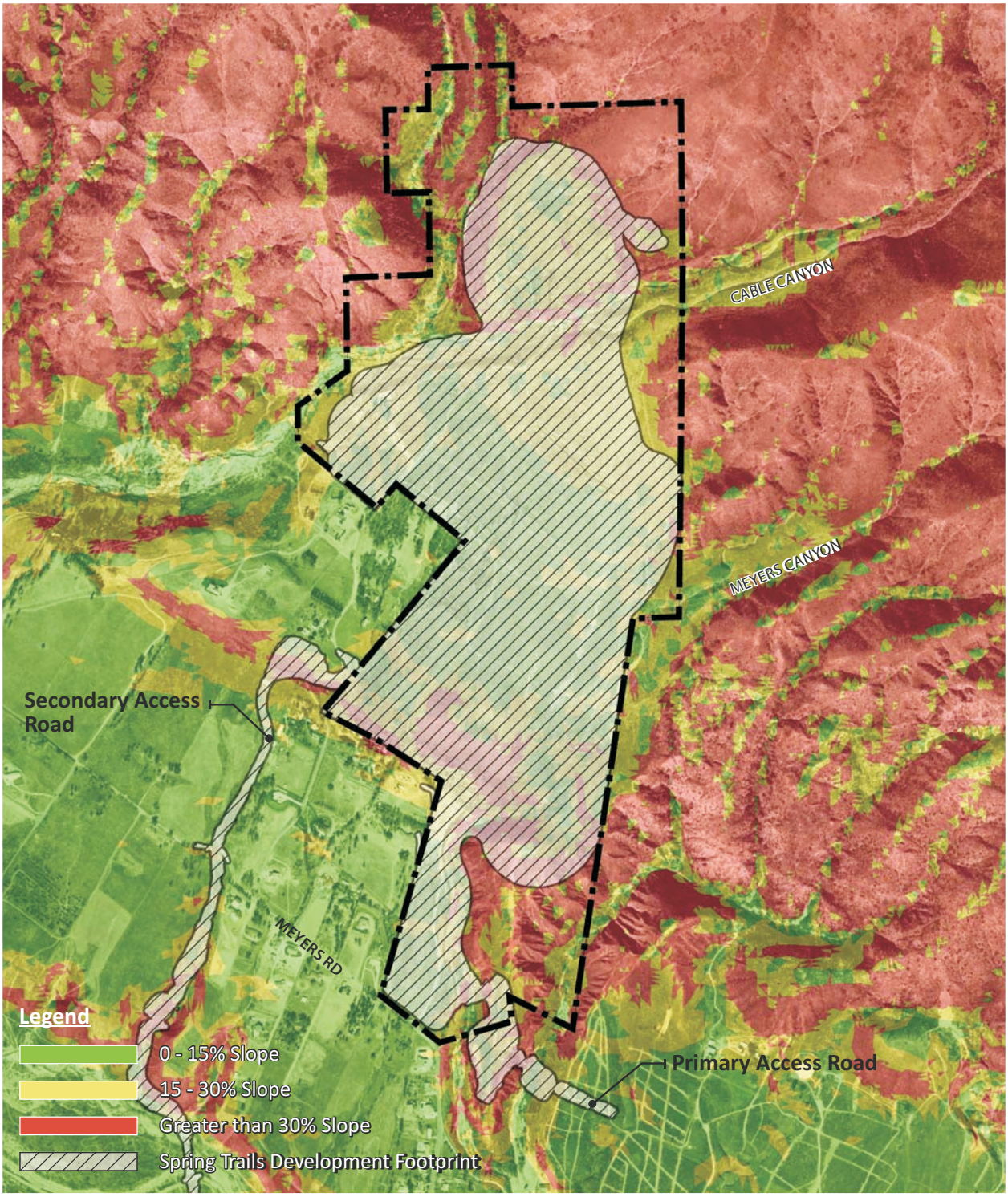
The Spring Trails Specific Plan Design Standards also include a Fire Protection Plan. Spring Trails is in an area that is designated a very high fire hazard area. To protect lives and property, an extensive fire protection plan has been developed as part of the Spring Trails Specific Plan. One of the most basic components of fire protection is to change and reduce fuel. In Spring Trails, there are three fuel modification zones where the type, spacing, irrigation, and maintenance of landscaping are strictly controlled. The zones would keep

flames far enough away from structures that, in combination with other efforts, the buildings would not ignite. The locations of fuel modification zones are shown in Chapter 5.6, *Hazards and Hazardous Materials*. The project's fuel modification zones also serve as a transition from natural landscape to the developed community and provide erosion control. Fuel Modification Zone A provides a 20- to 35-foot defensible space for fire suppression forces and protects structures from radiant and convective heat. Fuel Modification Zone B provides 50 to 200 feet of irrigated landscaped areas to help reduce combustible fuels. Fuel Modification Zone C provides a nonirrigated 50 percent thinning zone with removal of all dead and dying vegetation and undesirable species. Zone C is 40 to 185 feet in width surrounding the developed areas. Thinning zones are utilized to reduce the fuel load of wildland fires. Permitted and prohibited plant palettes are included in the Specific Plan.



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Development Footprint



NOT TO SCALE

Source: Google Earth

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Lighting

The use of lighting within the community would be consistent with the dark sky guidelines suggested by the International Dark Sky Association (www.darksky.org) and with the City of San Bernardino development code. A detailed lighting plan, including specifications and design standards, would be submitted as part of the construction documents. The following policies apply to lighting in Spring Trails.

- Lighting shall be directed on the driveways and walkways and away from adjacent property.
- Walkway lighting shall be low-level fixtures (e.g., bollards), spaced to provide adequate walkway illumination, and shall not intrude into the residential dwelling units.
- Light standards shall be energy-efficient and in scale with the height and use of the structures onsite.
- Light standards shall not exceed 15 feet above finish grade. The 15-foot height limit may be waived as deemed necessary by the City Engineer.
- Lighting shall be decorative, in keeping with the architectural theme of the facility served, and shall be located within landscape planter areas.
- All lighting, including security lighting, shall be directed away from adjoining properties and the public right-of-way.
- The level of lighting shall not exceed 0.5 foot-candle at any residential property line or at the perimeter of the developed areas adjacent to the areas designated as Open Space-Natural.
- A lighting plan shall be prepared for all public areas within Spring Trails. The lighting plan shall establish uniform lighting standards with regard to style, materials, and colors in order to ensure consistent design. The lighting plan shall be submitted to the City for review and approval.
- Game-court lighting is permitted on a case-by-case basis. Prior to installation, all game-court lighting shall be reviewed and approved by the City of San Bernardino and any other responsible governing agency. Court lighting fixtures shall not exceed 30 feet in height.
- Exterior lighting may be used to illuminate significant exterior features and landscaping.

Hillside Management Overlay District

The Spring Trails hillside design and development standards have been prepared to be site-specific for the proposed project and are consistent with the General Plan. The HMOD design guidelines would not be necessary. Since the alternative and preferred development plans would require development of similar magnitude, About 233 acres (66 percent) of the project site would be on slopes of 15 percent or more. Of these, 178 acres, or 76 percent, would be preserved as open space on the project site.

Design Guidelines

Section 4, Design Guidelines, of the Specific Plan lays out guidelines that define the aesthetic character of Spring Trails.

Community-Wide Design Guidelines

Community-wide guidelines apply to Spring Trails as a whole. They are intended to create a strong community identity through the use of consistent streetscape, entry monumentation, landscaping, and lighting elements.

Landscaping

Landscape within Spring Trails would be planted with combinations of evergreen and deciduous canopy trees with flowering evergreen shrubs and groundcovers. It is intended that the landscape provide a theme and continuity throughout Spring Trails, enhance desirable views, screen undesirable views, beautify and control erosion of graded slopes exposed to public views, preserve existing landscape material (whenever possible), and enhance interfaces between graded and natural open space areas. Landscaping for streets within Spring Trails is discussed in the Landscape Plan section of Section 3 of the Specific Plan.

- Streetscape elements, such as landscaping, lighting, street furniture, and signage, should create an attractive, consistent, and cohesive community image.

- Streetscape elements, such as lighting, landscaping, and street furniture, should complement the surrounding architectural styles.

- Special patterned paving should be provided at important intersections and trail crossings within the Specific Plan area.

- All landscaping shall comply with the approved trees, shrubs, and ground covers listed in Table 3.6, Landscape Zones Plant Palette, of the Specific Plan.

- Landscaping along major streets and at project entries should be tasteful and consistent to create an attractive and cohesive community identity. Formal plantings of nonnative species may be used at key entries and intersections to highlight these areas.

Lighting

Lighting within Spring Trails is intended to help define vehicular and pedestrian circulation patterns, provide safe pedestrian movement, distinguish community entries and activity areas, and contribute to the overall landscape theme of the community. The goal is to provide a sense of place by varying fixtures and illumination levels.

- Attractive and consistent lighting elements should be provided along streets within the neighborhood. The height, brightness, and spacing of the lighting elements should be appropriate to the scale and speed of the street.

- Lighting fixtures should be compatible with the architectural styles of surrounding buildings and yet consistent throughout the community.

- Entry areas (both pedestrian and vehicular) and highly used recreation areas shall be creatively lit to develop a sense of place and arrival.

- All exterior lights shall be shielded and focused to minimize spill light into the night sky or adjacent properties.

- The lighting concept of the entry monuments is to illuminate the sign graphics and gently wash the site elements, walls, and pilasters with light.
- Lighting standards should be consistent with City safety and illumination requirements for rural areas.
- Wall-mounted lighting fixtures shall be selected according to the individual style of the building.
- Exterior lighting on homes should be set to automatic timers.
- Provide low-contrast lighting and use low-voltage fixtures and energy-efficient bulbs, such as compact fluorescent and light-emitting diode bulbs.
- Refer to Section 5, Sustainability, of the Specific Plan for additional standards and guidelines pertaining to lighting within Spring Trails.
- Refer to the Residential Design Guidelines for design guidelines pertaining to lighting fixtures placed on homes.

Graded Slopes

- Where feasible, grading shall be minimized by following the natural ground contours.
- Humanmade landforms shall be graded to avoid unnaturally sharp or straight edges and planes. The top and toe of graded slopes shall be rounded to avoid a harsh, machine-made appearance.
- Significant natural vegetation should be retained and incorporated into the project whenever feasible.
- All graded slopes shall be stabilized and planted with the approved trees, shrubs, and groundcovers listed in Table 3.6 of the Specific Plan, Landscape Zones Plant Palette.

Residential Design Guidelines

Creating street scenes that function aesthetically and have visual interest is a primary community objective. The Specific Plan includes basic elements and criteria that are intended to develop variations in appearance and a sense of individuality for each home. Neighborhoods that have nearly identical homes and streets without variation in product placement and form are not allowed. Building level guidelines include some of the following criteria:

Exterior Lighting Fixtures

- Where fixtures are not an important focal point, light sources shall be concealed and concentrated.
- Lighting fixtures used on walls and walkways shall focus light downward and provide appropriate down-casting hardware to minimize glare.
- Ambient light shall be cast downward to reduce the impact on the neighborhood.

Screening

- Storage and maintenance areas and other ancillary uses shall be screened from public view whenever reasonably possible.

- Accessory structures, such as storage areas, refuse receptacles, mechanical equipment, backflow preventers, security fences, and similar uses can seriously detract from the visual quality of an area. Therefore, care must be taken to minimize the visual impact of these uses through site design and visual shielding. When possible, these uses should be located away from roadways and public views, behind buildings, or in enclosed structures.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.1-1: THE PROPOSED SPRING TRAILS PROJECT WOULD ALTER THE VISUAL APPEARANCE OF THE CITY OF SAN BERNARDINO. [THRESHOLDS AE-1 AND AE-3]

Impact Analysis: Implementation of the project would alter existing landform and involve substantial grading. The visual character of the majority of the project site would be changed from undeveloped open space to a low-density residential development. The development footprint encompasses approximately 241.5 acres, or 68 percent of the total site, and includes areas for the onsite development of residential lots, roadways, trails, detention basins, fuel modification zones, and parks. Approximately 193.0 acres of the total site would be graded and improved. An additional 23.7 acres would be graded and improved for offsite access, including 4.2 acres for the primary access road and 19.5 acres for the secondary access road. The development footprint and amount of graded acres is the same for both the preferred development plan and the SCE alternative development plan.

The project is designed to preserve significant watersheds, severely sloped areas, and seismic hazard areas and incorporate them into the land plan as open space. The project's design accounts for the potential impacts of the hazards posed by seismic activity, flooding, and wildland fires. As a result, the project includes 245.4 acres of open space, consisting of 9 acres of parks, 125.1 acres of internal slopes and fuel modification zones, and 111.3 acres of preserved natural open space. The SCE alternative development plan includes 246.3 acres of open space, consisting of 9 acres of parks, 126 acres of internal slopes and fuel modification zones, and 111.3 acres of preserved natural open space.

Photos of the existing site were taken from several vantage points in the City of San Bernardino and simulation software was used to show how the project site may look during two stages of site construction and after project construction. Figure 5.1-2 shows the three viewpoints from which the simulations were constructed.

Changes to the landscape would occur during mass grading, completion of the first phases of home construction, and at full buildout. The project is anticipated to be built out by 2013. Onsite grading and home construction would be most visible from commercial properties and to north- and southbound travelers along I-215 between Palm Avenue and Glen Helen Parkway. Figure 5.1-3 shows a simulation of how the site may look during site grading while traveling north on I-215 at the Palm Avenue off-ramp. Figure 5.1-4 simulates how it may look during the first phase of home construction and Figure 5.1-5 simulates how it may look after project completion. Other prominent views of the site are from the southwest. Figure 5.1-6 depicts how the Spring Trails site may look during the initial grading phase from the southwest, at Glen Helen Parkway and the railroad tracks south of Cajon Boulevard. Figures 5.1-7 and 5.1-8 simulate the project site from this viewpoint during the first phase of housing construction and after project completion, respectively.

Figure 5.1-9 shows how the view toward the site from the east-southeast would be virtually unchanged after project completion. As can be seen from the simulation, the view of the project site from this location is blocked by the hilly terrain.

Mass grading and single-family homes without landscaping would be plainly visible from these vantage points. However, due to the residential units' low scale, especially in comparison to steep hillsides, they would not interfere with the dominant view and backdrop of the San Bernardino Mountains. The project would not be out of scale with the existing viewshed and would not dominate the landscape. Rooflines would not encroach into the skyline or the dominant ridgelines. Due to the project's low density, the Specific Plan's design guidelines and design concepts, the large amount of open space preservation, and proposed landscaping, the homes would not dominate the views.

The Spring Trails hillside design and development standards have been prepared to be site-specific for the proposed project and are consistent with the General Plan. The HMOD design guidelines would not be necessary. Since the alternative and preferred development plans would require development of similar magnitude,The majority (76 percent) of the project site on slopes of 15 percent or greater grade would be preserved as open space, and the remaining acres would follow the Specific Plan's hillside development standards.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan. The main difference between the preferred and alternative development scenarios is that the SCE electric lines would be visible from areas adjacent to the project site, as they currently are.

IMPACT 5.1-2: THE PROPOSED PROJECT WOULD NOT ALTER SCENIC RESOURCES WITHIN A STATE SCENIC HIGHWAY. [THRESHOLD AE-2]

Impact Analysis: The County of San Bernardino General Plan designates I-15 as a County Scenic Route, from the junction with I-215 northeast to the Nevada state line, excepting all incorporated areas. Due to area topography, the freeway interchange elevation, and speed of travel, the project site is not visible to motorists once they pass the I-215 interchange and head northbound on the I-15. The interchange itself is approximately one mile long. Motorists heading northbound at 65 miles per hour would be on the interchange for less than a minute. They might have a view of the project site looking east for a few seconds before the site is behind them. Traveling southbound on the I-15, motorists do not see the northern portion of the site due to prominent ridgelines. They also do not see the southern portion of the site from the I-215 junction because road contours and the northbound lanes of the I-15 and I-215 interchange and associated traffic interfere with views. The site is only visible from the northbound I-15 before the I-215 junction. This portion of I-15 is not designated a scenic highway.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan. In the alternative development scenario the SCE electric lines would be visible from areas adjacent to the project site, as they currently are.

IMPACT 5.1-3: THE PROPOSED PROJECT WOULD GENERATE ADDITIONAL LIGHT AND GLARE. [THRESHOLD AE-4]

Impact Analysis: Additional lighting would be required to provide nighttime street, trail, and building illumination for the proposed project. Other sources of light include security lighting, nighttime traffic, and light associated with the nighttime use of the residences.

In addition to the adjacent residential land uses, other light-sensitive land uses includes the California State University at San Bernardino (CSUSB) observatory, currently being constructed on Little Badger Hill on the CSUSB campus, between three and four miles east of the project site. Nighttime lighting has the potential to create light pollution, which occurs when lighting is directed upward and gets scattered by the atmosphere. Once the light is scattered, it reflects back to Earth. To observatories this light competes with starlight and interferes with the ability to see the night sky clearly. Observatories require atmospheric darkness so that the night sky can be viewed clearly.

Pursuant to the City's Development Code and design criteria in the Spring Trails Specific Plan, lights associated with the project development would be directed toward the interior of the site. Exterior lighting would be designed, arranged, directed, or shielded in such a manner as to contain direct illumination onsite, thereby preventing excess illumination and light spillover onto adjoining land uses and/or roadways and without adversely affecting day or nighttime views in the project area. Lighting would be installed to accommodate safety and security, while minimizing impacts on surrounding residential areas and the CSUSB observatory.

The above analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.1.4 Cumulative Impacts

The adjacent developed communities and undeveloped parcels to the south and southwest are designated Residential Estate (RE) in the City of San Bernardino's General Plan. Continued conversion of rural and undeveloped lands to low-density residential suburban land uses would change the aesthetic character of the area. This project would incrementally contribute to both direct and indirect light and glare affecting the nighttime aesthetic character of the region. The entire project site is currently prezoned by the City of San Bernardino as RE. In the context of the City's General Plan, the Verdemont area is residential in nature. The project's features and detailed design criteria per the Specific Plan meet the City's goal to provide a variety of housing stock, including upscale homes. The project clusters development to maintain undeveloped open space on approximately 30 percent of the site. Eventually, as residential development occurs in the remaining undeveloped areas south and southwest of the project site, the character of the Verdemont area would be changed into a more suburban community, as intended by the General Plan. By maintaining open space and preserving the dominant view and backdrop of the San Bernardino Mountains, the project would protect the natural components that contribute to the scenic value of the area, including existing terrain, vegetation, and major ridgelines. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.1.5 Existing Regulations and Standard Conditions

City of San Bernardino Development Code

- Foothill Fire Zone Overlay District (Chapter 19.15)
- Hillside Management Overlay District (Chapter 19.17)
- Property Development Standards (Chapter 19.20)

5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.1-1, 5.1-2, and 5.1-3.

5.1.7 Mitigation Measures

No significant impacts have been identified and no mitigation is required.

5.1.8 Level of Significance After Mitigation

No significant impacts have been identified.



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Photo Simulation Viewpoints



Site Boundary

Photo Viewpoints

0 4,600
Scale (Feet)

Source: Google Earth Pro 2009, Lilburn Corporation

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Project Simulation from Viewpoint 1: Existing Conditions and Proposed Mass Grading



Existing Conditions: View while traveling north on Interstate 215 at the Palm Avenue off-ramp. Site is approximately five miles from Palm Avenue off-ramp.

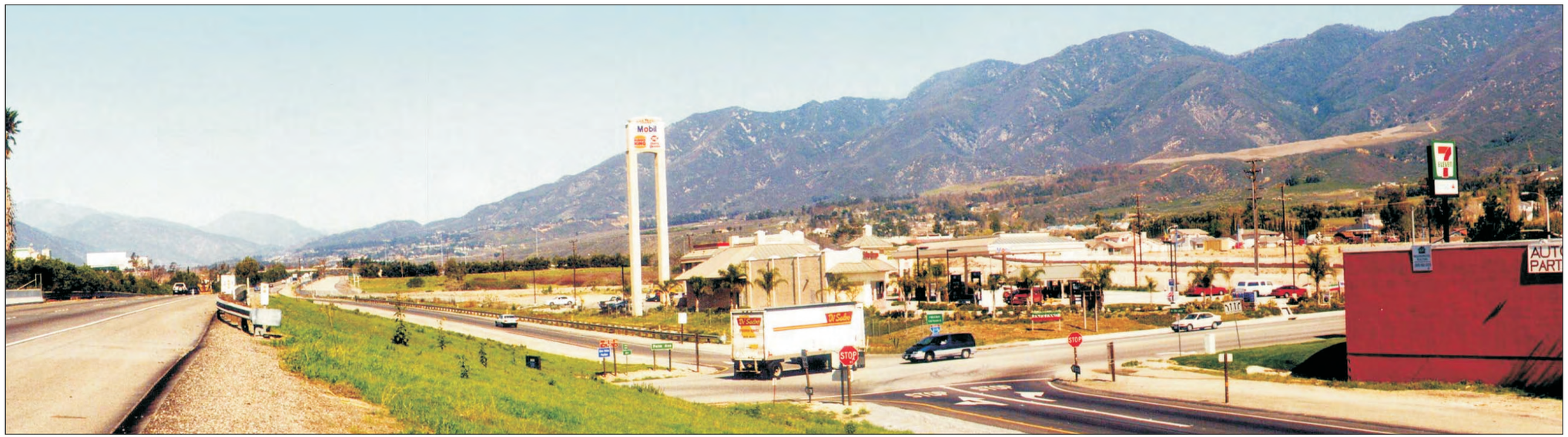


Mass Grading Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

Source: Lilburn Corporation

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Project Simulation from Viewpoint 1: Mass Grading and First Phases of Home Construction



Mass Grading Conditions: View while traveling north on Interstate 215 at the Palm Avenue off-ramp. Site is approximately five miles from Palm Avenue off-ramp.



First Phase of Construction Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

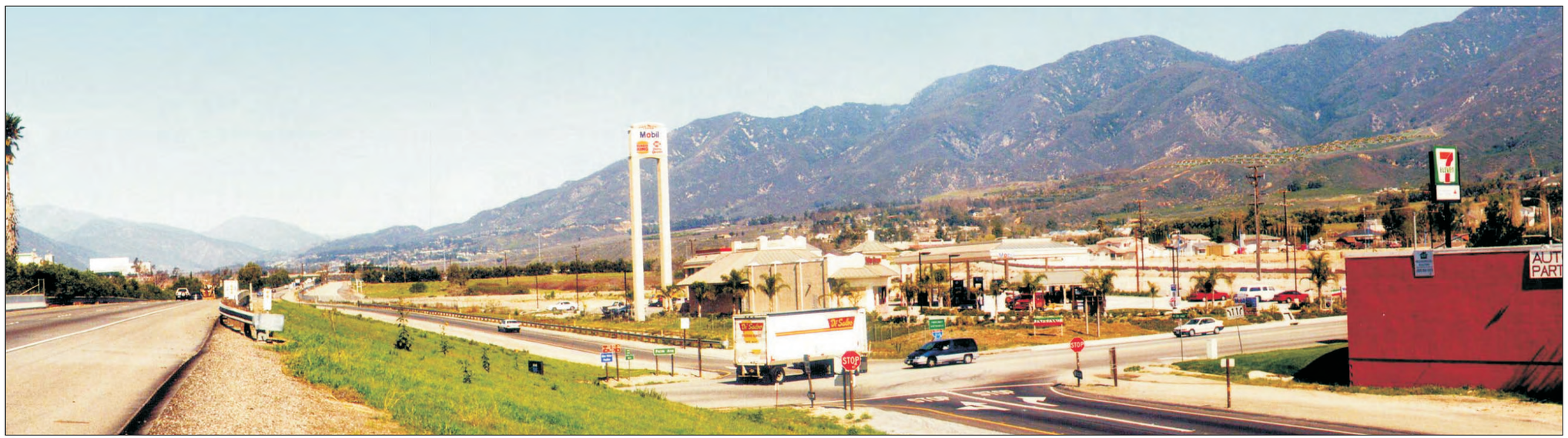
Source: Lilburn Corporation

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Project Simulation from Viewpoint 1: First Phases of Home Construction and Completed Construction



First Phase of Construction Conditions: View while traveling north on Interstate 215 at the Palm Avenue off-ramp. Site is approximately five miles from Palm Avenue off-ramp.

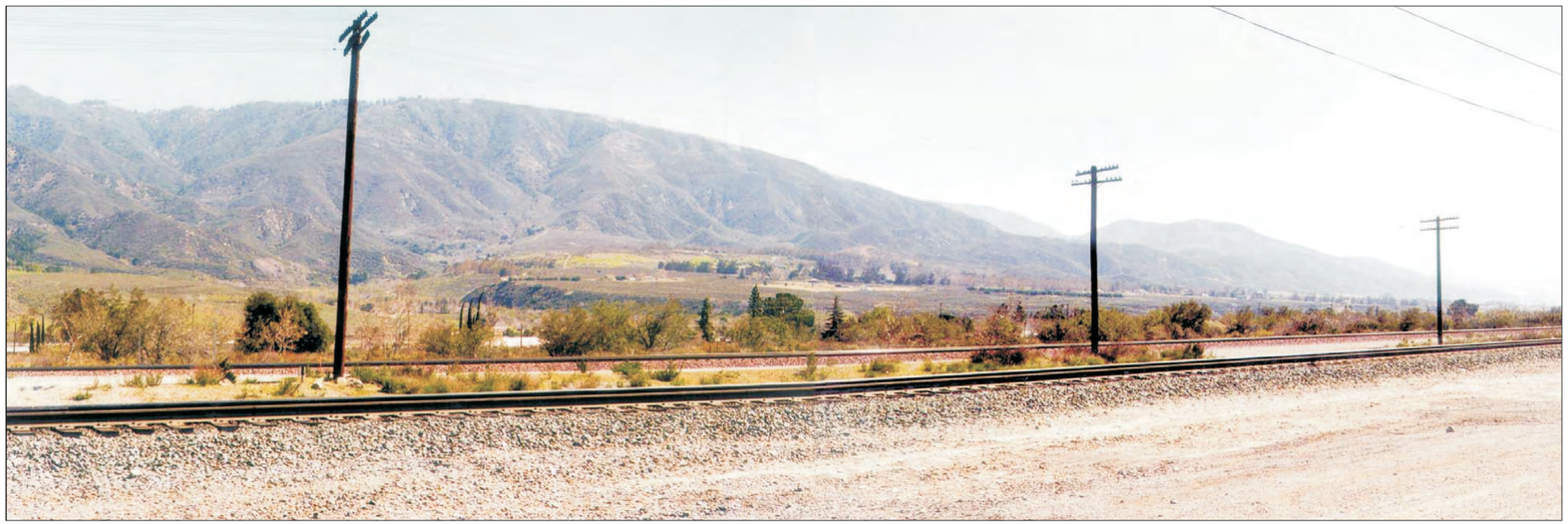


Completed Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

Source: Lilburn Corporation

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Project Simulation from Viewpoint 2: Existing Conditions and Proposed Mass Grading



Existing Conditions: View looking east-northeast from Glen Helen Parkway at railroad tracks. Site is approximately four miles east-northeast.



Mass Grading Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

Source: Lilburn Corporation

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Project Simulation from Viewpoint 2: Mass Grading and First Phases of Home Construction



Mass Grading Conditions: View looking east-northeast from Glen Helen Parkway at railroad tracks. Site is approximately four miles east-northeast.



First Phases of Construction Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

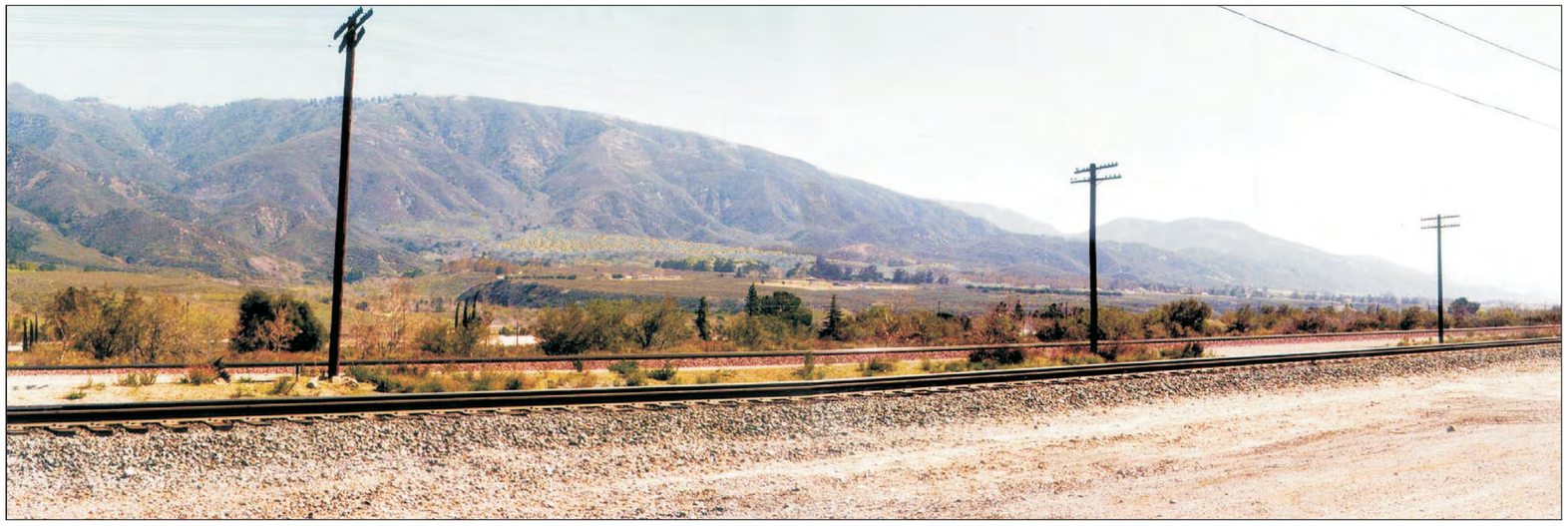
Source: Lilburn Corporation

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Project Simulation from Viewpoint 2: First Phases of Home Construction and Completed Construction



First Phases of Construction Conditions: View looking east-northeast from Glen Helen Parkway at railroad tracks. Site is approximately four miles east-northeast.

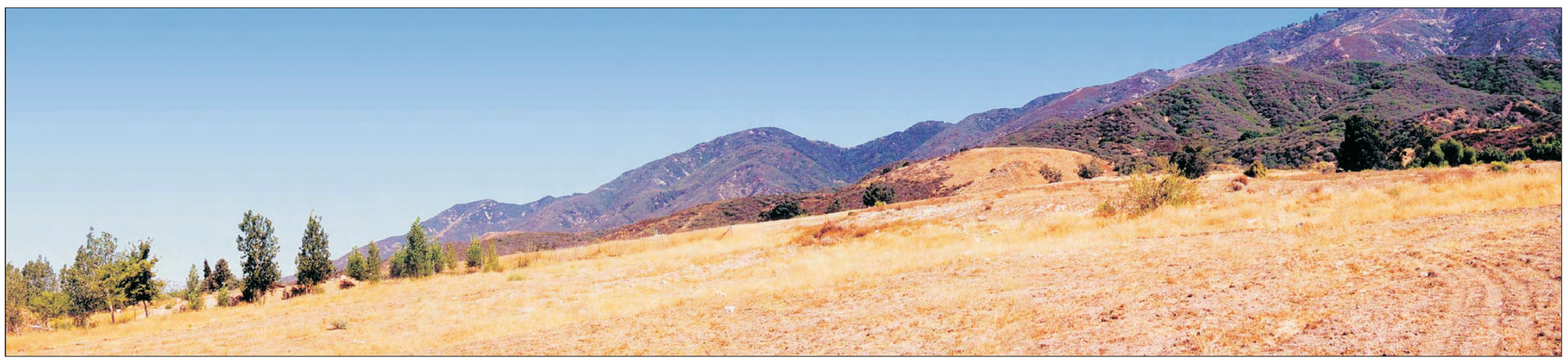


Completed Conditions: Simulation showing proposed Spring Trails (landscaping not shown).

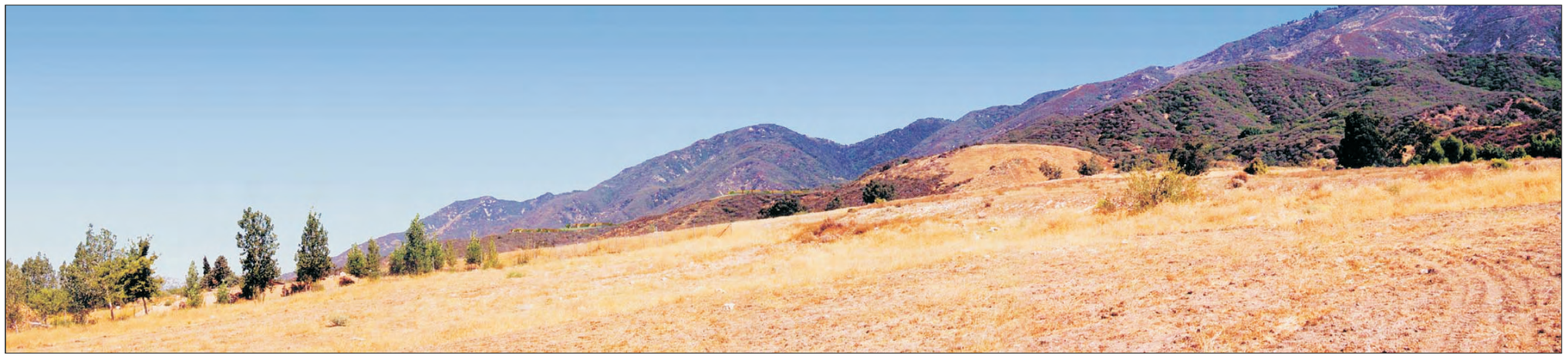
Source: Lilburn Corporation

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Project Simulation from Viewpoint 3



Existing Conditions: View looking northwest from Meecham Canyon. Site is approximately one mile southeast of Spring Trails.



Proposed Conditions: Simulation showing the same sightline after Spring Trails project completion.

Source: Lilburn Corporation

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5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the proposed Spring Trails project to impact air quality in the local and regional context. The analysis in this section is based on an air quality analysis completed by The Planning Center based on land uses associated with buildout of the Spring Trails Specific Plan and trip generation provided by Kunzman Associates (2010). The air quality model output sheets are included as Appendix C.

5.2.1 Environmental Setting

South Coast Air Basin

The project site lies within the South Coast Air Basin (SoCAB), which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The air basin is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds.

Temperature and Precipitation

The annual average temperature varies little throughout the 6,645-square-mile SoCAB, ranging from the low 60s to the high 80s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The Western Regional Climate Center (WRCC) maintains historical climate information for the western United States. Its closest meteorological monitoring station to the project site is the Lytle Creek PH Monitoring Station (ID No. 045215), located approximately 4.5 miles west of the site. According to the WRCC, the average maximum temperature within the local vicinity is 93.0°F in July. The average minimum temperature is reported at 42.8°F in January and February (WRCC 2009).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 33.14 inches per year in the project area (WRCC 2009).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent and low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB.

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area

Air Pollutants of Concern

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_x, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOC and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide (CO_2), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global climate change. These greenhouse gases are discussed in Section 5.16, *Greenhouse Gas Emissions*.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005).

Volatile Organic Compounds (VOC) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. VOCs are synonymous with reactive organic gases. Other sources of VOC include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by VOC, but rather by reactions of VOC to form secondary pollutants such as ozone (SCAQMD 2005).

Nitrogen Oxides (NO_X) serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens (SCAQMD 2005).

NO_2 is a by-product of fuel combustion. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM_{10}, $PM_{2.5}$, and ozone (SCAQMD 2005).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. A primary source of SO_2 emissions is high-sulfur-content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO_2 (SCAQMD 2005).

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of particulates are now recognized. Inhalable particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005). Diesel particulates are classified by the California Air Resources Board (CARB) as a carcinogen.

Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (much like sandblasting activities). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles (SCAQMD 2005).

Ozone (O_3), or smog, is one of a number of substances called photochemical oxidants that are formed when VOC and NO_X (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SoCAB, and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted growth and premature death. O_3 can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005).

Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United States Code Section 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. CARB has, to date, established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in the diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

In 2008, the South Coast Air Quality Management District (SCAQMD) conducted its third update to their study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk (SCAQMD 2008).

Regulatory Framework

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the

SCAQMD. However, the SCAQMD reports to CARB, and all criteria emissions are also governed by the California and national ambient air quality standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Ambient Air Quality Standards

The federal Clean Air Act (FCAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The FCAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the state AAQS by the earliest practical date. The state AAQS tend to be more restrictive than the federal AAQS and are based on even greater health and welfare concerns.

The AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect sensitive receptors, those most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.2-1, these pollutants include O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.2-1
Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.07 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Average	*	0.03 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	*	
	24 hours	0.04 ppm	0.14 ppm	
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$ (PM_{10})	150 $\mu g/m^3$ (PM_{10})	
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	Monthly	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 $\mu g/m^3$	
Sulfates (SO_4)	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Source: CARB 2010
ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.

Air Quality Management Planning

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the air quality management plan (AQMP) for the SoCAB. Since 1979, a number of AQMPs have been prepared.

The most recent adopted comprehensive plan, which was adopted on June 1, 2007, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards by 2015 through a more focused control of SO_X, directly emitted $PM_{2.5}$, NO_X, and VOC by 2015. The eight-hour ozone control strategy builds upon the $PM_{2.5}$

strategy, augmented with additional NO_X and VOC reductions to meet the standard by 2024, assuming an extended attainment date is obtained.

The AQMP provides local guidance for the State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the state and federal AAQS. Areas that meet AAQS are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Severity classifications for ozone nonattainment range in magnitude: marginal, moderate, serious, severe, and extreme. The attainment status for the SoCAB is shown in Table 5.2-2. The SoCAB is currently in attainment of the state AAQS for SO_2, CO, and lead (Pb). According to the 2007 AQMP, the SoCAB will have to meet the new federal $PM_{2.5}$ standards by 2015 and the 8-hour ozone standard by 2024, and will most likely have to achieve the recently revised 24-hour $PM_{2.5}$ standard by 2020. The SCAQMD has recently designated the SoCAB as nonattainment for NO_2 (entire basin) and lead (Los Angeles County only) under the California AAQS and attainment/maintenance for PM_{10} under the national AAQS.

Table 5.2-2
Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	*State*	*Federal*
Ozone – 1-hour	Extreme Nonattainment	No Separate Standard[1]
Ozone – 8-hour	Extreme Nonattainment	Severe-17 Nonattainment[2]
PM_{10}	Serious Nonattainment	Serious Nonattainment[3]
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment[4]
NO_2	Nonattainment[5]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment[6]	Attainment[6]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB, based on 2004 State Area Designations and National Area Designations current as of February 2009.
[1] 1-Hour standard revoked on June 14, 2005.
[2] May petition to Extreme.
[3] Annual standard revoked September 2006. CARB approved SCAQMD's redesignation request from the SoCAB on March 25, 2010.
[4] The USEPA granted the request to redesignate the SoCAB from nonattainment to attainment for the CO NAAQS on May 11, 2007 (Federal Register Volume 71, No. 91), which became effective June 11, 2007.
[5] The state NO_2 standard was strengthened in 2007 from 0.25 ppm to 0.18 ppm. Under the revised standards, the entire SoCAB was designated nonattainment on March 25, 2010. In addition, the EPA adopted a new 1-hour NO_x standard of 0.100 ppm on January 22, 2010.
[6] The Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are proposed as unclassified (March 25, 2010).

Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements made by the SCAQMD. The project site is in Source Receptor Area (SRA) 34 (Central San Bernardino Valley). The SCAQMD air quality monitoring station in SRA 34 that is closest to the proposed project site is the San Bernardino – 4th Street monitoring station approximately 9.9 miles to the southeast. The pollutants measured at the San Bernardino station include CO, NO_X, PM_{10}, and $PM_{2.5}$. Air quality data for SO_2 is supplemented from the Fontana – Arrow Highway Monitoring Station approximately 10.8 miles southwest of the project site. Data from these two stations are summarized in Table 5.2-3. The data show recurring violations of both the state and federal O_3 standards. The data also indicate that the area regularly exceeds the state PM_{10} standards and federal $PM_{2.5}$ standards. The CO, SO_2, NO_2, and, $PM_{2.5}$ standards have not been violated in the last five years at this station.

Table 5.2-3
Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2004	2005	2006	2007	2008
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm	55	54	57	48	62
State 8-Hour > 0.07 ppm	79	72	72	72	87
Federal 8-Hour > 0.075[2] ppm	56	56	56	51	62
Max. 1-Hour Conc. (ppm)	0.157	0.163	0.154	0.153	0.157
Max. 8-Hour Conc. (ppm)	0.129	0.129	0.126	0.121	0.122
Carbon Monoxide (CO)[1]					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	3.24	2.45	2.19	2.27	1.65
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18[3] ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.118	0.098	0.088	0.083	0.091
Sulfur Dioxide (SO_2)[4]					
State 24-Hour ≥ 0.04 ppm	0	0	0	0	0
Federal 24-Hour ≥ 0.14 ppm	0	0	0	0	0
Max 24-Hour Conc. (ppm)	0.003	0.004	0.003	0.004	0.003
Coarse Particulates (PM_{10})[1]					
State 24-Hour > 50 μg/m3	25	20	22	26	3
Federal 24-Hour > 150 μg/m3	0	0	0	1	0
Max. 24-Hour Conc. (μg/m3)	118.0	72.0	92.0	219.0	76.0
Fine Particulates ($PM_{2.5}$)[1]					
Federal 24-Hour > 35[5] $\mu g/m^3$	16	3	9	11	1
Max. 24-Hour Conc. ($\mu g/m^3$)	93.4	106.2	55.0	72.1	43.5

Source: South Coast Air Quality Management District, Ambient Air Quality Monitoring Data, obtained April 2009.
Note: ppm: parts per million; $\mu g/m^3$, or micrograms per cubic meter
[1] Data obtained from San Bernardino – 4th Street Monitoring Station
[2] The USEPA revised the 8-hour O_3 standard from 0.08 ppm to 0.075 ppm, effective May 2008.
[3] The NO_X standard was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm.
[4] Data obtained from the Fontana – Arrow Highway Monitoring Station.
[5] The USEPA revised the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$, effective in December 2006.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors can include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Generally, industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Sensitive uses consisting of residential uses are sited immediately to the south of the project site and to the southeast. Other sensitive receptors include residential uses to the west of the project site along West Meyers Road and North Verdemont School and Chavez Middle School, approximately 3,050 feet and 4,075 feet, respectively, to the southeast.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 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).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

The Initial Study, included as Appendix A1, substantiates that impacts associated with the following threshold would be less than significant: AQ-5

This impact will not be addressed in the following analysis.

South Coast Air Quality Management District Thresholds

Regional Significance Thresholds

CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The SCAQMD has established thresholds of significance for air quality for construction activities and project operation, shown in Table 5.2-4:

Table 5.2-4
SCAQMD Significance Thresholds

Air Pollutant	*Construction Phase*	*Operational Phase*
Volatile Organic Compound (VOC)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Fine particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: SCAQMD 2007

CO Hotspot Analysis

Localized CO impacts are determined based on the presence of congested intersections. The significance of localized project impacts depends on whether the project would cause substantial concentrations of CO. A project is considered to have significant impacts if project-related mobile-source emissions result in an exceedance of the California one-hour and eight-hour CO standards, which are:

- 1 hour = 20 parts per million
- 8 hour = 9 parts per million

Localized Significance Thresholds

The SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant within the project SRA and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required. The construction LSTs for a five-acre project site in SRA 34 for sensitive receptors located within 25 meters (approximately 82 feet) are shown in Table 5.2-5. If emissions exceed the LST for a five-acre site, which serves as the screening level criteria, then dispersion modeling needs to be conducted. Use of a five-acre site model for the project site for construction activities would result in more stringent LSTs because emissions would occur in a more concentrated area and closer to the nearest sensitive receptors than in reality. Projects larger than five acres can determine the localized significance for construction by performing dispersion modeling using the thresholds in Table 5.2-6 for emissions that exceed the LSTs shown in Table 5.2-5.

Table 5.2-5
SCAQMD Localized Significance Threshold, Screening Level Analysis

Air Pollutant	*Threshold (lbs/day)*	
	Construction	*Operation*
Nitrogen Oxides (NO_2)	270	270
Carbon Monoxide (CO)	1,720	1,720
Coarse Particulates (PM_{10})	14	4
Fine Particulates ($PM_{2.5}$)	8	2

Source: SCAQMD 2003; SCAQMD 2006, for a 5-acre site within SRA 34 with receptors 82 feet (25 meters) from the source.

Table 5.2-6
SCAQMD Localized Significance Thresholds Based on AAQS for Projects Larger than 5 Acres

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[1]	10.4 $\mu g/m^3$
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[1]	10.4 $\mu g/m^3$
24-Hour PM_{10} Standard – Operation (SCAQMD)[1]	2.5 $\mu g/m^3$
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[1]	2.5 $\mu g/m^3$

Note: ppm – parts per million; $\mu g/m3$ – micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

5.2.3 Environmental Impacts

The project includes the construction and operation of the proposed Spring Trails project. Construction and operational emissions were calculated using the URBEMIS2007 emissions model. The URBEMIS2007 model compiles an emissions inventory of stationary and vehicle emissions sources. The calculated emissions for the construction phases of the proposed project are compared to the SCAQMD thresholds of significance to determine whether project emissions would result in significant air quality impacts. Dispersion modeling, using the results of the URBEMIS2007 emissions model for project-related construction activities, was conducted using the USEPA's Industrial Source Complex Short Term (ISCST3) dispersion model to analyze concentrations of air pollutants at nearby sensitive receptors. CO hotspot modeling was conducted using the Caline4 dispersion model to analyze concentrations of CO emissions at receptors 10 feet from the edge of the roadway. Air quality modeling is included as Appendix C.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore the annexation would not contribute to impacts related to air quality.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Section 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units (303 new units and 1 existing residence) compared to 307 units proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their respective impacts to air quality.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.2-1: THE PROPOSED PROJECT WOULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) AIR QUALITY MANAGEMENT PLAN BECAUSE CONSTRUCTION-RELATED AIR POLLUTANT EMISSIONS WOULD EXCEED THE SCAQMD REGIONAL AND LOCAL EMISSION THRESHOLDS. [THRESHOLD AQ-1]

Impact Analysis: A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental effects of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP. To accurately assess the environmental impacts of new or renovated development, environmental pollution and population growth are projected for future scenarios. There are two key indicators of consistency:

Indicator 1: Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the AAQS or interim emission reductions in the AQMP.

Indicator 2: Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

Indicator 1

The SoCAB is designated by the state and EPA as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. SCAQMD developed regional emissions thresholds, shown in Table 5.2-5, to determine whether or not a project would contribute to air pollutant violations. If a project exceeds the regional air pollutant thresholds, then it would significantly contribute to air quality violations in the SoCAB. In addition, it would contribute to air pollutant violations if localized emissions result in an exceedance of the AAQS (Table 5.2-6).

Short-term construction emissions of NO_X, PM_{10}, and $PM_{2.5}$ generated during project-related construction activities would exceed the SCAQMD thresholds for regional emissions (see Impact 5.2-2 and Table 5.2-7) and would significantly elevate localized concentrations of air pollutants (see Impact 5.2-4). Therefore, the project's construction-related emissions would result in a significant air quality impact. The project in regard to short-term emissions would not be consistent with the AQMP under the first indicator.

Long-term emissions from the project would not exceed the SCAQMD thresholds for regional emissions (see Impact 5.2-3 and Table 5.2-8) and would therefore not contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP. Therefore, the project's operation-related emissions result in a less than significant air quality impact. The project in regard to long-term emissions would be consistent with the AQMP under the first indicator.

Table 5.2-7
Project-Related Regional Construction Emissions
(pounds per day)

Construction Phase[1]	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Mass Grading[2]	71	722	329	<1	455	118
Trenching/Utilities	2	18	9	0	1	1
Asphalt Paving (Access Roads)	4	23	15	0	2	2
Building Construction	8	43	73	<1	3	3
Asphalt Paving	5	28	17	<1	2	2
Architectural Coating	33	<1	1	0	<1	<1
Maximum Daily Construction Emissions	73	**740**	338	<1	**456**	**118**
SCAQMD Regional Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	**Yes**	**Yes**

Source: URBEMIS2007, Version 9.2.4.
Note: Under SCAQMD Rule 201, a permit to construct must be obtained prior to the start of construction activity.
[1] Construction emissions are based on the construction equipment mix and schedule provided by Rick Engineering Company. Modeling assumes 376,308 cy of export, 224 acres of total grading, and construction of 329 dwelling units and therefore emissions rates presented are conservative.
[2] PM_{10} and $PM_{2.5}$ generated by fugitive dust assumes implementation of SCAQMD Rule 403 for fugitive dust control, which includes dust control measures during ground-disturbing activities: replacing groundcover in disturbed areas quickly, watering exposed surfaces at least two time daily, implementation of equipment loading/unloading procedures to reduce fugitive dust, managing haul road dust by watering two times daily, and reducing speed on unpaved roads to less than 15 mph.

Table 5.2-8
Project-Related Regional Operational Phase Emissions
(in pounds per day)

Operations Phase[1]	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer						
Stationary Sources[2]	21	6	17	0	<1	<1
Mobile Sources	20	26	237	<1	18	9
Maximum Daily Operation Emissions	41	31	254	<1	48	9
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Winter						
Stationary Sources[2]	19	8	3	<1	<1	<1
Mobile Sources	22	31	227	<1	48	9
Maximum Daily Operation Emissions	40	39	230	<1	48	10
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: URBEMIS2007, Version 9.2.4.
Note: Operation emissions are distinguished between summer and winter to account for changes in temperature, fireplace use, differences in gasoline blend, and other factors that may affect emissions from stationary and mobile sources.
[1] Based on the traffic study's analysis of 329 dwelling units and therefore emissions rates presented are conservative.
[2] All fireplaces installed in residential units are assumed to be gas burning in accordance with SCAQMD Rule 445, Wood Burning Devices.

Indicator 2

In general, SCAQMD's AQMP is based on demographic projections (units, population, and employment) in the SCAG's Regional Transportation Plan and associated job-housing ratio on a subregional level. Consequently, SCAG's projections are based on a macrolevel analysis of land uses within each jurisdiction. The project site is in the Verdemont community of unincorporated San Bernardino County and in the City of San Bernardino's sphere of influence (SOI). As shown in Figure 4-6, *Existing Land Use Designations*, under the County's General Plan, the northern portion of the site—approximately 160 acres—is within the San Bernardino National Forest and is private unincorporated land, designated as Resource Conservation (RC). The southern portion of the site, approximately 190.6 acres, is designated as Rural Living (RL-5), which allows up to one dwelling unit per five acres, and is not located within the San Bernardino National Forest. The entire project site is currently prezoned by the City of San Bernardino as Residential Estate (RE), allowing one dwelling unit per acre.

The Local Agency Formation Commission (LAFCO) approved a Sphere of Influence Expansion in September 1996 for the City of San Bernardino that placed the project site and adjacent area within the City of San Bernardino's SOI. The proposed project includes a request for annexation of the project site and adjoining parcels (for a total of approximately 379 acres) into the City of San Bernardino. The annexation process would begin after approval of the project application by the San Bernardino City Council. The planned use would be consistent with the zoning designations of the project site because residential densities would not exceed one dwelling unit per acre. Please refer to Section 5.8, *Land Use and Planning*, of this DEIR for a detailed discussion of the project's consistency with the City of San Bernardino's General Plan land use designation of the project site. Therefore, the proposed project would not have a substantial effect on population, housing, and employment trends in the subregion. Consequently, because the proposed development under the Spring Trails Specific Plan is consistent with the City of San Bernardino General Plan, the project would not exceed the assumptions in the AQMP, which is based, in part, on local general plan projections.

Summary

As described above, the project would not be consistent with the AQMP under the first indicator because short-term construction emissions of NO_X, PM_{10}, and $PM_{2.5}$ associated with the project would exceed the SCAQMD regional and localized significance thresholds, which are the basis for determining if a project would cumulatively contribute to the regional nonattainment designations of the SoCAB. The project would be considered consistent with the AQMP under the second indicator because the project would not exceed assumptions in the AQMP. However, as both indicators would not be met by the proposed project, project and cumulative level impacts are considered significant relative to project consistency with the AQMP.

Alternative (Overhead Electric Lines) Development Plan

Air quality emissions would be similar under the alternative (overhead electric lines) development plan. The alternative would have 304 residential units rather than 307 and the overhead lines would be undergrounded during construction. The difference in residential units would not substantially change the operational air pollutant emissions. Since the SCE electrical lines would be aboveground, site grading would not require additional earth movement. The impacts related to consistency with the AQMP would be significant on a project and cumulative level for both the preferred and alternative project.

IMPACT 5.2-2: ***CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT WOULD GENERATE SHORT-TERM EMISSIONS THAT EXCEED SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S REGIONAL SIGNIFICANCE THRESHOLDS FOR NO_X, PM_{10}, AND $PM_{2.5}$ AND WOULD SIGNIFICANTLY CONTRIBUTE TO THE NONATTAINMENT DESIGNATIONS OF THE SOUTH COAST AIR BASIN FOR OZONE AND PARTICULATE MATTER (PM_{10} AND $PM_{2.5}$). [THRESHOLDS AQ-2 AND AQ-3]***

Impact Analysis: Construction activities produce combustion emissions from various sources, such as onsite heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Grading activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from soil-disturbing activities. Exhaust emissions from construction activities onsite would vary daily as construction activity levels change.

Construction activities associated with new development occurring in the project area would temporarily increase localized PM_{10}, $PM_{2.5}$, VOC, NO_X, and CO concentrations in the project vicinity and regional emissions within the SoCAB. The primary source of construction-related CO, SO_X, VOC, and NO_X emissions is gasoline- and diesel-powered heavy-duty mobile construction equipment. Primary sources of PM_{10} and $PM_{2.5}$ emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces. In addition, architectural coating operations can also generate substantial VOC emissions.

Project-related construction air pollutant emissions would occur from construction of the Spring Trails project. Construction of the project is anticipated to commence in 2010 until the anticipated completion year of 2013. Emissions from construction activities were calculated on a daily basis and were compared to the SCAQMD's maximum daily regional emissions thresholds using the URBEMIS2007 computer model. The URBEMIS2007 model was based on construction phasing and construction equipment list provided by Rick Engineering Company. The results of the URBEMIS2007 computer modeling are included in Table 5.2-7. The URBEMIS2007 model runs are included in Appendix C.

As shown in Table 5.2-7, grading activities would result in air pollutant emissions that exceed the SCAQMD regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$. All other analyzed pollutants were found to be less than the SCAQMD's significance thresholds. The primary source of NO_X emissions would be from construction equipment exhaust during grading operations. NO_X is a precursor to both the formation of O_3 and particulate matter (PM_{10} and $PM_{2.5}$). The primary sources of PM_{10} and $PM_{2.5}$ would be fugitive dust during grading and clearing during these operations. Emissions of PM_{10} and $PM_{2.5}$ that exceed the SCAQMD's regional significance threshold would significantly contribute to the particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designations of the SoCAB. Consequently, emissions of NO_X, PM_{10}, and $PM_{2.5}$ that exceed the SCAQMD regional significance thresholds would significantly contribute to the O_3 and particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designations of the SoCAB. Project and cumulative level impacts would be significant relative to the project's consistency with the SCAQMD's regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$, and the project's contribution to the nonattainment designations of the SoCAB for ozone and particulate matter (PM_{10} and $PM_{2.5}$).

Alternative (Overhead Electric Lines) Development Plan

Air quality operational emissions would be similar under the alternative (overhead electric lines) development plan. Since the SCE electrical lines would be aboveground, site grading would not require additional earth movement. The construction emissions would be similar on a project and cumulative level for either scenario and impacts would be significant.

IMPACT 5.2-3: LONG-TERM OPERATION OF THE PROJECT WOULD NOT GENERATE AIR POLLUTANT EMISSIONS THAT EXCEED SCAQMD'S REGIONAL SIGNIFICANCE THRESHOLDS. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: Mobile- and stationary-source emissions generated by the project were compiled using URBEMIS2007, Version 9.2.4, air pollutant emissions inventory model to estimate project-related increases in air pollutant emissions. Project-related vehicle trips were obtained from the traffic impact analysis conducted by Kunzman Associates (revised January 2010). Based on the trip generation rate in the traffic study, the project would generate a total of 3,149 average daily trips (ADT) at project buildout in Year 2013. Air pollutant emissions modeling is based on mobile- and stationary-source emissions for each of the land uses. The results of the URBEMIS2007 computer modeling are included in Table 5.2-8.

The project would result in an increase of air pollutant emissions for both mobile and stationary sources. However, as shown in the table, project-related emissions would not exceed the SCAQMD regional emissions thresholds for the analyzed pollutants. Therefore, the project would not cumulatively contribute to the O_3, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Consequently, the proposed project's operational air quality impact is considered less than significant.

Alternative (Overhead Electric Lines) Development Plan

Air quality emissions would be similar under the alternative (overhead electric lines) development plan. The alternative would have 304 residential units rather than 307 units. The difference in residential units would not substantially change the operational air pollutant emissions. The long-term air quality impacts would be less than significant on a project and cumulative level for both the preferred and alternative project.

IMPACT 5.2-4: CONSTRUCTION ACTIVITIES ASSOCIATED WITH GRADING OPERATIONS COULD EXPOSE OFFSITE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS OF PM_{10} AND COULD EXPOSE THE EXISTING ONSITE RECEPTOR TO SUBSTANTIAL POLLUTANT CONCENTRATIONS OF BOTH PM_{10} AND $PM_{2.5}$. [THRESHOLD AQ-4]

Impact Analysis: The proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike the mass (pounds) of construction emissions shown in Table 5.2-7, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects. Table 5.2-5 (also described in pounds per day) calculates the amount of project-related emissions at which localized concentrations would exceed the ambient air quality standards according to the size of the project site and distance to the nearest sensitive receptor.

Thresholds for dispersion modeling are based on the state AAQS, which are the most stringent AAQS that have been established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect the sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. As shown in Table 5.2-9, project emissions would exceed the screening level criteria for LSTs of NO_X, PM_{10}, and $PM_{2.5}$ during project-related grading activities. The maximum emissions of CO from project-related construction activities would not exceed the LST screening level criterion and would therefore not result in substantial CO pollutant concentrations at nearby sensitive receptors.

Table 5.2-9
Project-Related LST Construction Emissions
(in pounds per day)

Source[1]	Pollutants			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Mass Grading[2]	385	191	439	104
Trenching/Utilities	18	8	1	1
Asphalt Paving (Access Roads)	22	12	2	2
Building Construction	31	17	2	2
Asphalt Paving	23	13	2	2
Architectural Coating	0	0	0	0
Maximum Daily Construction Emissions	**403**	199	**440**	**105**
SCAQMD LST Screening Thresholds	270	1,720	14	8
Dispersion Modeling Necessary?	**Yes**	No	**Yes**	**Yes**

Source: URBEMIS2007 Version 9.2.4, and SCAQMD, Localized Significance Methodology, 2003, June, Appendix A: Based on LSTs for a project site in SRA 34 for a 5-acre site and a distance of 25 meters (82 feet) between the source and receptor.

Note: All values are in pounds per day. Values are the maximum daily emissions less on-road emissions from construction activities.

[1] Modeling based on 224 total acres graded and construction of 329 dwelling units and therefore emissions rates presented are conservative.

[2] Fugitive dust emissions assume application of Rule 403, which includes quickly replacing groundcover in disturbed areas, watering exposed surfaces at least two times daily, implementation of equipment loading/unloading procedures to reduce fugitive dust, managing haul road dust by water two times daily, and reducing speed on unpaved roads to less than 15 mph.

Because emissions of NO_X, PM_{10}, and $PM_{2.5}$ would exceed the LST screening level criteria for a five-acre site during grading operations, concentrations generated by project-related construction activities during grading were modeled at nearby sensitive receptors surrounding the site. The proposed project's maximum daily emissions were modeled using the EPA's ISCST3 dispersion model. This model is more accurate because it takes into account project-specific conditions such as meteorological data and source and receptor data. The maximum concentrations for NO_X, PM_{10}, and $PM_{2.5}$ would occur during the overlap of mass grading and trenching operations and are shown in Figures 5.2-1 through 5.2-3. The concentration levels at each receptor location are shown in Table 5.2.10.

Table 5.2-10
Construction Concentrations, Unmitigated (LSTs)

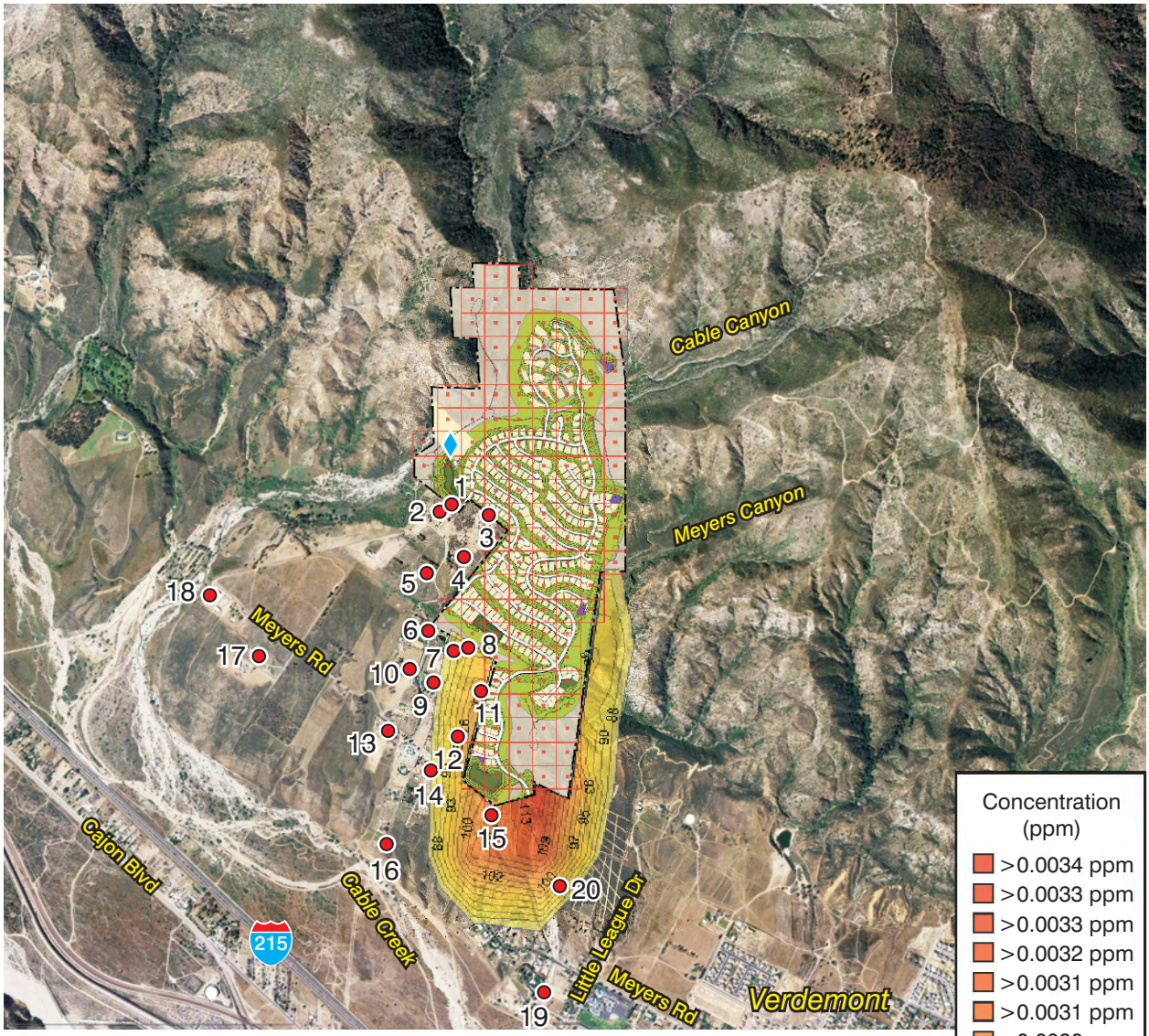
Receptors	NO_2 1 hour (ppm)	PM_{10} 24 hours[1,2] ($\mu g/m^3$)	$PM_{2.5}$ 24 hours[1,2] ($\mu g/m^3$)
Onsite Receptor	--	**>38**	**>10**
Receptor Location 1 (Residence)	--	**>28**	--
Receptor Location 2 (Residence)	--	**>24**	--
Receptor Location 3 (Residence)	--	**>35**	--
Receptor Location 4 (Residence)	--	**>35**	--
Receptor Location 5 (Residence)	--	**>24**	--
Receptor Location 6 (Residence)	--	**>24**	--
Receptor Location 7 (Residence)	--	**>31**	--
Receptor Location 8 (Residence)	--	**>38**	--
Receptor Location 9 (Residence)	--	**>24**	--
Receptor Location 10 (Residence)	--	**>17**	--
Receptor Location 11 (Residence)	--	**>38**	--
Receptor Location 12 (Residence)	--	**>28**	--
Receptor Location 13 (Residence)	--	**>10**	--
Receptor Location 14 (Residence)	--	**>21**	--
Receptor Location 15 (Residence)	--	**>24**	--
Receptor Location 16 (Residence)	--	**--**	--
Receptor Location 17 (Residence)	--	**--**	--
Receptor Location 18 (Residence)	--	**--**	--
Receptor Location 19 (Residence)	--	**--**	--
Receptor Location 20 (Residence)	--	**--**	--
SCAQMD Construction LST Threshold	0.18	10.4	10.4
Significant?	No	**Yes**	**Yes**

Source: ISCST3
ppm; parts per million; $\mu g/m^3$; micrograms per cubic meter
Bold = Exceeds threshold
-- = Does not exceed threshold
[1] Threshold is based on SCAQMD Rule 403.
[2] Since the SoCAB is in nonattainment for PM_{10}, the threshold is established as an "allowable change" in concentration. Therefore, background concentration is irrelevant.
[3] Highest concentration from the last three years of data available.

Nitrogen Oxides

As shown in Figure 5.2-1, the highest concentration of NO_X offsite is 120 $\mu g/m^3$. However the offsite areas that would be exposed to this concentration level do not have any sensitive receptors. This concentration, when converted to parts per million (ppm), would result in a concentration level of approximately 0.1 ppm. At the highest concentration, construction-related emissions of NO_X would not exceed the LST of 0.18 ppm. Additionally, areas with elevated NO_X concentrations would occur primarily in the southern portion of the project site and therefore the existing onsite residence would not be exposed to elevated levels of NO_X. Therefore, project-related construction activities would not expose off- and onsite sensitive receptors to substantial pollutant concentrations of NO_X.

Unmitigated Concentrations of NO_X from Construction Activities

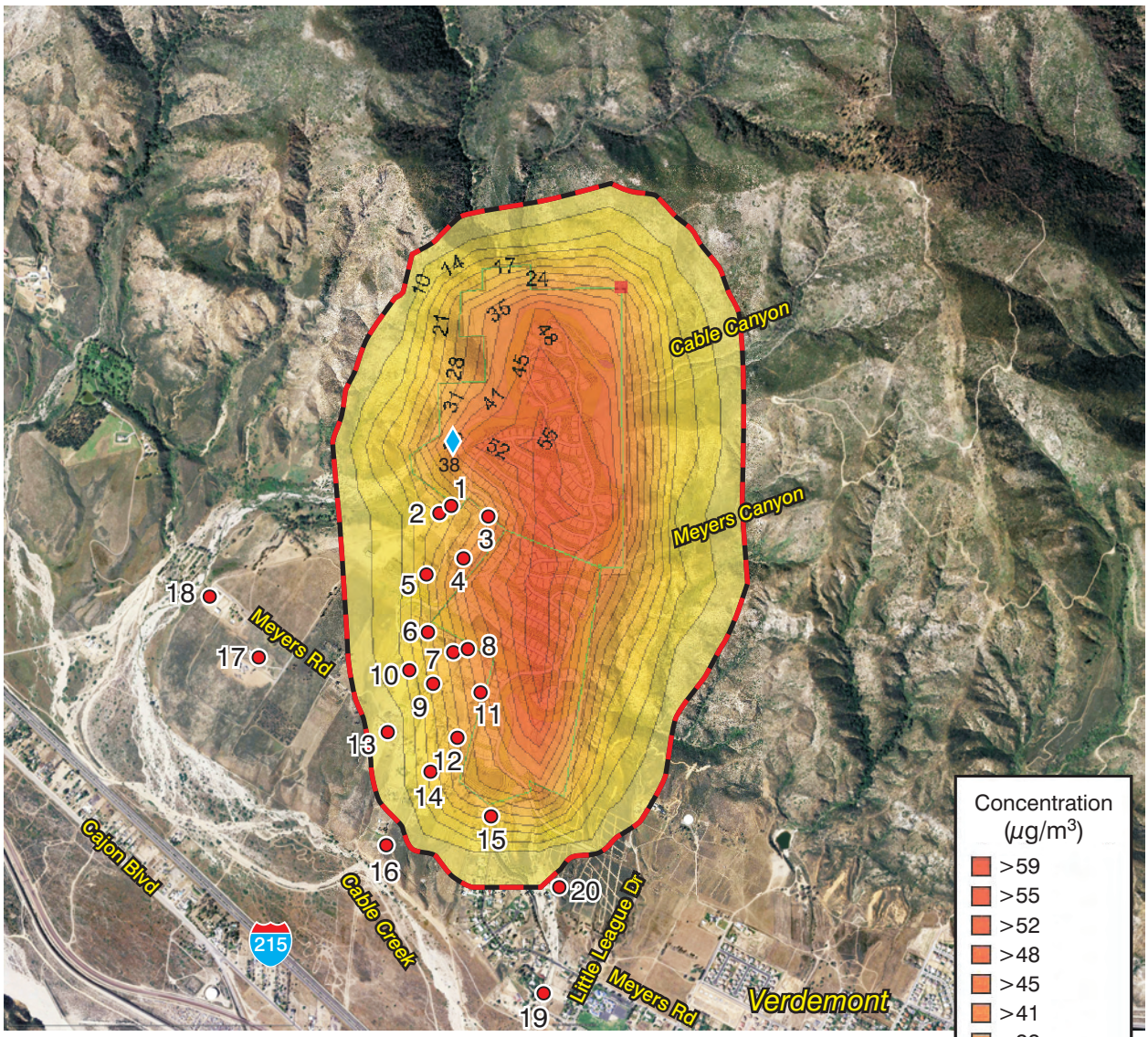


Note: All concentrations are less than the ambient air quality standard of 0.18 ppm.

Source: Google Earth Pro 2009

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Unmitigated Concentrations of PM_{10} from Construction Activities



Concentration ($\mu g/m^3$)
- >59
- >55
- >52
- >48
- >45
- >41
- >38
- >35
- >31
- >28
- >24
- >21
- >17
- >14
- >10

10.4 $\mu g/m^3$ Significance Threshold

Site Boundary

Receptor Locations

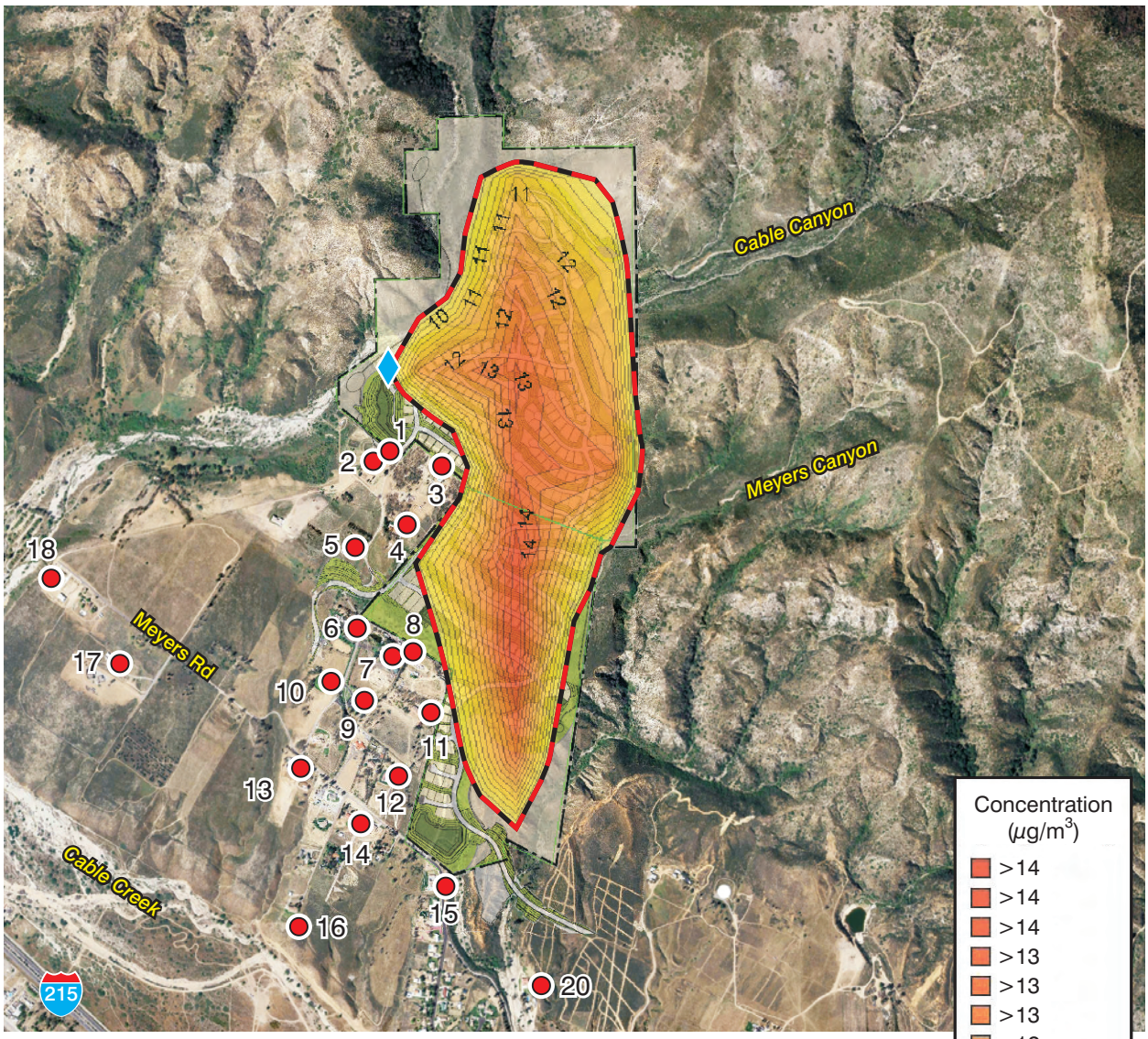
Onsite Receptor

0 2,600
Scale (Feet)

Source: Google Earth Pro 2009

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Unmitigated Concentrations of $PM_{2.5}$ from Construction Activities



Source: Google Earth Pro 2009

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Particulate Matter (PM_{10} and $PM_{2.5}$)

As shown in Figure 5.2-3, the concentration of $PM_{2.5}$ would be below the LSTs at the surrounding offsite receptors, but would exceed the LSTs at the existing onsite receptor. In addition, as shown in Figure 5.2-2, construction activities would generate substantial concentrations of PM_{10} at the existing onsite residence and the surrounding offsite receptors. Consequently, the project would expose sensitive receptors to substantial concentrations of PM_{10} and $PM_{2.5}$ during grading activities with project level impacts being potentially significant.

Alternative (Overhead Electric Lines) Development Plan

Air quality operational emissions would be similar under the alternative (overhead electric lines) development plan. Since the SCE electrical lines would be aboveground, site grading would not require additional earth movement. The project-related construction emissions would be similar for either scenario and impacts to sensitive receptors would be potentially significant.

IMPACT 5.2-5: LONG-TERM OPERATION OF THE PROPOSED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. [THRESHOLD AQ-4]

Impact Analysis: The project would expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike the mass (pounds) of operational emissions shown in Table 5.2-8 (pounds per day), localized concentrations refer to the amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

CO Hotspot Analysis

An impact is also potentially significant if emission levels exceed the state or federal ambient air quality standards, thereby exposing receptors to substantial pollutant concentrations. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Note that the federal levels are based on one- and eight-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards before the federal standards.

Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse. Based on the traffic impact analysis prepared by Kunzman Associates (January 2010), under future years with project conditions, the following intersections are projected to operate at LOS E or worse before traffic improvements (see Section 5.14, *Transportation and Traffic*).

- Palm Avenue at I-215 freeway NB ramps (LOS E during AM peak hour and LOS F during PM peak hours for Year 2013)
- Palm Avenue at I-215 freeway SB ramps (LOS F during AM peak hour for Year 2013)

Intersections listed above for Year 2013 are most conducive to the formation of CO hot spots and were modeled during the worst-case peak hour of congestion. Because technological improvements in later-model cars have made significant emissions reductions in CO, background CO concentrations in the SoCAB and vehicle emissions would be lower in Year 2030 than in the project buildout year, Year 2030 conditions were not modeled. Table 5.2-11 lists the one- and eight-hour baselines and project-related CO concentrations that would occur at the study area intersections operating under an LOS E or worse with the proposed project at buildout year plus cumulative growth conditions. Project-related traffic would not exceed any of the state one- or eight-hour CO AAQS at the study area intersections. Consequently, sensitive receptors in the area would not be significantly affected by CO emissions generated by operation of the proposed project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

Table 5.2-11
CO Concentrations at Congested Intersections in the Project Vicinity (parts per million)

Intersection	Highest 1-Hour CO Concentration	1-Hour CAAQS	Highest 8-Hour CO Concentration	8-Hour CAAQS	Exceeds CAAQS	
					1-Hour	8-Hour
Palm Avenue at I-215 NB Ramps	3.5	20	2.5	9	No	No
Palm Avenue at I-215 SB Ramps	3.6	20	2.5	9	No	No

Source: CALINE4. Version 1.31. Based on traffic volumes, roadway configurations, and speed limits obtained from the traffic study prepared by Kunzman Associates, Inc., January 2010. CO concentrations include a background ambient one-hour CO concentration of 2.1 ppm obtained from the SCAQMD, http://www.aqmd.gov/ceqa/handbook/CO/CO.html, for SRA 30 in year 2023. 8-Hour CO concentrations obtained by multiplying 1-Hour CO concentrations by a persistence factor of 70 percent.

Localized Significance Thresholds

To estimate concentrations of air pollutants generated from operation of the project at nearby existing and proposed sensitive receptors, the project's maximum daily operational emissions were compared to the operational LSTs. In accordance with SCAQMD methodology, only onsite stationary sources are included in the analysis. Project-related vehicles traveling on- and offsite are not included in the analysis. Table 5.2-12 shows maximum daily operational emissions generated by the project compared to the LSTs. As shown in this table, project emissions would not exceed the LST screening level criteria for CO, NO_2, PM_{10}, or $PM_{2.5}$, and therefore operation of the proposed project would not expose offsite and onsite sensitive receptors to substantial pollutant concentrations.

Table 5.2-12
Maximum Daily Operational Emissions Compared with the LST

Source[1]	Pollutants (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Stationary Source[2]	8	16	<1	<1
Total Onsite Operational Emissions	**8**	**16**	**<1**	**<1**
SCAQMD LST	270	1,720	4	2
Exceeds Threshold	No	No	No	No

Source: URBEMIS2007 Version 9.2.4, and SCAQMD, Appendix A of *Localized Significance Methodology*, June 2003. Based on LSTs for a project site in SRA 21 for a 5-acre site with sensitive receptors within 25 meters (82 feet).
[1] Based on the traffic study's analysis of 329 dwelling units and therefore emissions rates presented are conservative.
[2] All fireplaces installed in residential units are assumed to be gas-burning in accordance with SCAQMD Rule 445, Wood Burning Devices.

Alternative (Overhead Electric Lines) Development Plan

Air quality emissions would be similar under the alternative (overhead electric lines) development plan. The alternative would have 304 residential units rather than 307 units. The difference in residential units would not substantially change the number of stationary- and mobile-source air pollutant emissions. The project-related long-term air quality impacts to sensitive receptors would be less than significant for both the preferred and alternative project.

5.2.4 Cumulative Impacts

In accordance with the SCAQMD methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. Cumulative projects include new development and general growth within the project area. The greatest source of emissions within the SoCAB is from mobile sources. Due to the extent of the area potentially impacted by cumulative project emissions, the SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-4.

Construction

The SoCAB is in nonattainment for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. Mitigation measures specified for the proposed project would assist in mitigating these cumulative impacts and can be applied to all similar cumulative projects. However, even with the implementation of mitigation measures, project-related construction emissions would still exceed the SCAQMD significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$, and cumulative emissions would result in greater exceedances. Therefore, the project's contribution to cumulative construction-related air quality impacts would be significant. The cumulative construction-related air quality impacts analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by the SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would not result in emissions in excess of the SCAQMD regional emissions thresholds for long-term operation for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$. Therefore, the project's contribution to cumulative air quality impacts would be less than

significant. The cumulative operational air quality impacts analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.2.5 Existing Regulations and Standard Conditions

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 203: Permit to Operate
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- CARB Rule 2840: Airborne Toxics Control Measure
- Building Energy Efficiency Standards (Title 24)
- Appliance Energy Efficiency Standards (Title 20)
- Motor Vehicle Standards (AB 1493)

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.2-3 and 5.2-5.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.2-1 The proposed project is not consistent with the applicable air quality management plan because construction-related air pollutant emissions would exceed the SCAQMD regional and localized emission thresholds. This would be a project and cumulative level significant impact.

- Impact 5.2-2 Construction activities associated with the proposed project would generate short-term emissions that exceed SCAQMD'S regional significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ and would significantly contribute to the nonattainment designations of the SOCAB for ozone and particulate matter (PM_{10} and $PM_{2.5}$). This would be a project and cumulative level significant impact.

- Impact 5.2-4 Construction activities associated with grading operations could expose sensitive receptors to substantial pollutant concentrations of PM_{10} at the existing onsite residence and the surrounding offsite residences. This would be a project level significant impact.

5.2.7 Mitigation Measures

Impact 5.2-1

Mitigation measures applied for short-term construction activities of the project would lessen impacts associated with Impact 5.2-1.

Impact 5.2-2

Fugitive Dust

2-1 Ongoing during grading and construction, the construction contractor shall implement the following measures in addition to the existing requirements for fugitive dust control under South

Coast Air Quality Management District Rule 403 to further reduce PM_{10} and $PM_{2.5}$ emissions. To assure compliance, the City shall verify that these measures have been implemented during normal construction site inspections:

- During all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering as quickly as possible. This would achieve a minimum control efficiency for PM_{10} of 5 percent.

- During all construction activities, the construction contractor shall sweep streets with Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling.

- During active debris removal and grading, the construction contractor shall suspend grading operations when wind speeds exceed 25 miles per hour. This would achieve an emissions control efficiency of 98 percent for PM_{10} under worst-case wind conditions.

- During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other suitable means. This would achieve a control efficiency for PM_{10} of 91 percent.

- During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day. This would achieve an emissions reduction control efficiency for PM_{10} of 61 percent.

- During active debris removal, the construction contractor shall apply water to disturbed soils at the end of each day. This would achieve an emissions control efficiency for PM_{10} of 10 percent.

- During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour. This would achieve a control efficiency for PM_{10} of 57 percent.

- The construction contractor shall apply chemical soil stabilizers to reduce wind erosion. This would achieve a control efficiency of up to 80 percent.

2-2 During all grading activities, the daily area disturbed shall be limited to a maximum of 35 acres.

Exhaust Emissions

2-3 Ongoing during grading and construction, the construction contractor shall implement the following measures to further reduce construction exhaust emissions of NO_x. To assure compliance, the City shall verify that these measures have been implemented during normal construction site inspections:

- The Project Applicant shall specify in the construction bid that construction contractors are required to use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over

50 horsepower. A list of construction equipment by type and model year shall be maintained by the construction contractor onsite.

- The construction contractor shall ensure that all construction equipment is properly serviced and maintained to the manufacturer's standards to reduce operational emissions.

- The construction contractor shall limit nonessential idling of construction equipment to no more than five consecutive minutes.

Impact 5.2-4

Mitigation Measures 2-1 through 2-3 would reduce air pollutant emissions associated with the project and would therefore also reduce the concentration of air pollutants at nearby sensitive land uses.

5.2.8 Level of Significance After Mitigation

Impact 5.2-1

Mitigation measures 2-1 through 2-3 would lessen impacts associated with Impact 5.2-1. However, no additional feasible mitigation measures are available to reduce short-term air pollutant emission of NO_X to below the SCAQMD regional thresholds so that the project would not significantly contribute to the nonattainment designation of the SoCAB and thus it would be consistent with the AQMP. Furthermore, emissions of PM_{10} would exceed the SCAQMD localized thresholds. Consequently, Impact 5.2-1 would remain a significant and unavoidable project and cumulative level impact.

Impact 5.2-2

Mitigation Measures 2-1 and 2-2 would reduce PM_{10} and $PM_{2.5}$ emissions from project-related construction activities to below the SCAQMD regional thresholds. Similarly, Mitigation Measure 2-3 would reduce NO_X emissions during construction activities by approximately 31 percent or approximately 149 pounds per day (see Appendix C for more information). However, as shown in Table 5.2-13, NO_X emissions from project-related construction activities would continue to exceed the SCAQMD regional thresholds. Consequently, project and cumulative level impacts would remain significant and unavoidable.

Table 5.2-13
Project-Related Regional Construction Emissions, Mitigated
(pounds per day)

Construction Phase[1]	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Mass Grading[2,3]	71	583	329	<1	114	47
Trenching/Utilities	2	17	9	0	1	1
Asphalt Paving (Access Roads)	4	16	15	0	2	2
Building Construction	8	40	73	<1	3	3
Asphalt Paving	5	22	17	<1	2	2
Architectural Coating	33	<1	1	0	<1	<1
Maximum Daily Construction Emissions	73	**600**	338	<1	115	47
SCAQMD Regional Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

Source: URBEMIS2007, Version 9.2.4.
Note: Under SCAQMD Rule 201, a permit to construct must be obtained prior to the start of construction activity.
[1] Construction emissions are based on the construction equipment mix and construction phasing provided by Rick Engineering Company. Modeling assumes 376,308 cy of export, 224 acres of total grading, and construction of 329 dwelling units and therefore emissions rates presented are conservative.
[2] PM_{10} and $PM_{2.5}$ generated by fugitive dust assumes implementation of SCAQMD Rule 403 for fugitive dust control and Mitigation Measures 2-1 and 2-2, which include dust control measures during ground-disturbing activities: replacing groundcover in disturbed areas quickly, watering exposed surfaces at least three time daily, implementation of equipment loading/unloading procedures to reduce fugitive dust, managing haul road dust by watering three times daily, reducing speed on unpaved roads to less than 15 mph, requiring at least 24 inches of freeboard on all haul vehicles, and use of non-toxic soil stabilizers.
[3] NO_x and particulate matter (PM_{10} and $PM_{2.5}$) generated by construction equipment exhaust assume implementation of Mitigation Measure 2-2, that is use of Tier 3 construction equipment for equipment 50 horsepower or greater, which was phased in between 2006 and 2008.

Impact 5.2-4

Mitigation Measures 2-1 through 2-3 would reduce regional construction emissions and therefore reduce localized concentrations of air pollutant emissions during construction activities. Table 5.2-14 shows the LST emissions of air pollutants related to construction with the implementation of mitigation. As shown in this table, construction emissions of NO_X would be reduced to below the LST screening level criteria; however, PM_{10} and $PM_{2.5}$ would continue to exceed the LST screening level criteria. Consequently, dispersion modeling using the ISCST3 model was conducted for concentrations of particulate matter with mitigation.

Table 5.2-14
Project-Related LST Construction Emissions, Mitigated

Source[1]	Pollutants			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Mass Grading[2,3]	246	191	100	33
Trenching/Utilities	16	8	1	1
Asphalt Paving (Access Roads)	15	12	2	2
Building Construction	28	17	2	2
Asphalt Paving	16	13	2	2
Architectural Coating	0	0	0	0
Maximum Daily Construction Emissions	264	199	**101**	**34**
SCAQMD LST Screening Thresholds	270	1,720	14	8
Dispersion Modeling Necessary?	No	No	**Yes**	**Yes**

Source: URBEMIS2007 Version 9.2.4, and SCAQMD, Localized Significance Methodology, 2003, June, Appendix A: Based on LSTs for a project site in SRA 34 for a 5-acre site and a distance of 25 meters (82 feet) between the source and receptor.

Note: All values are in pounds per day. Values are the maximum daily emissions less on-road emissions from construction activities.

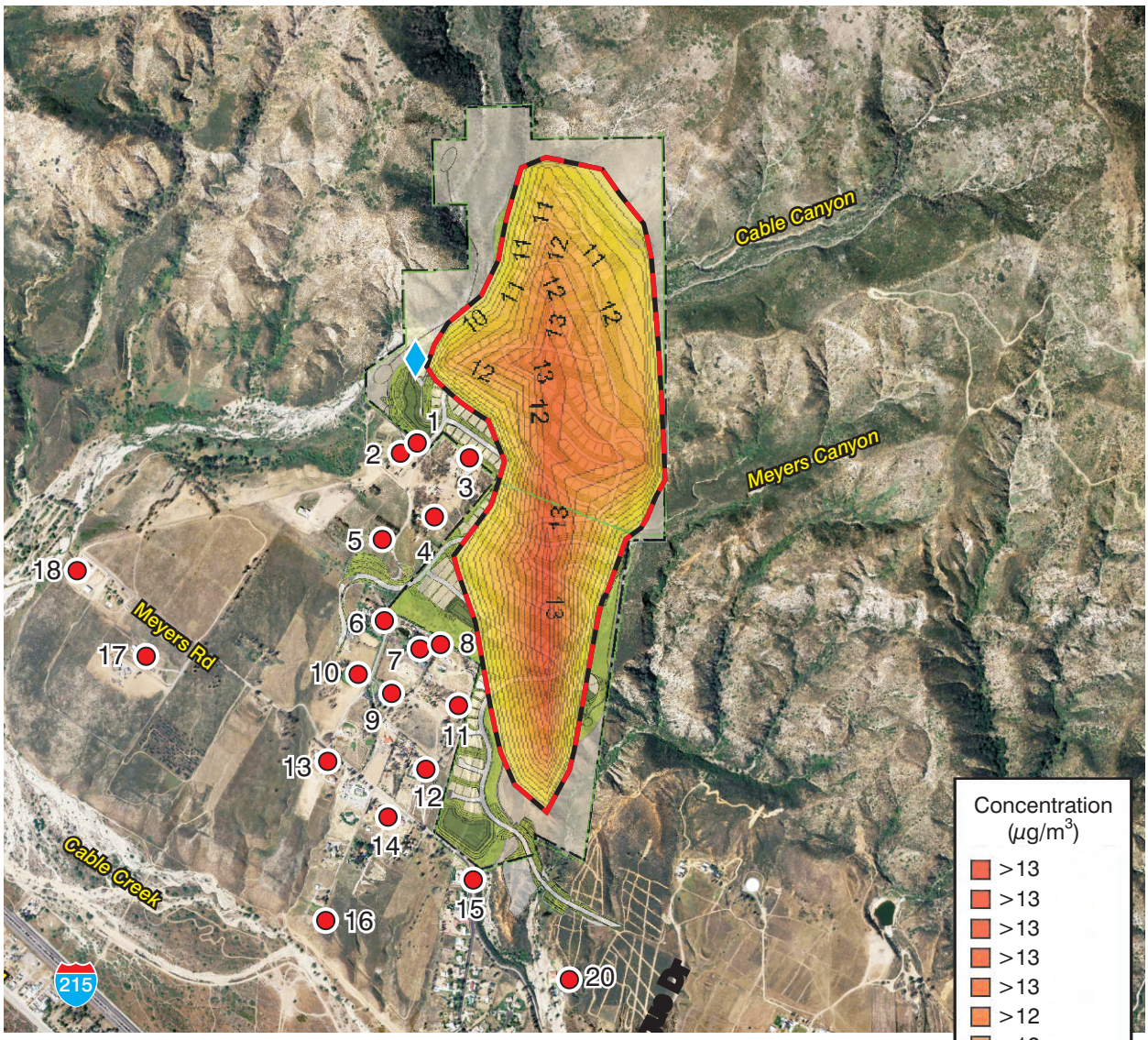
[1] Modeling based on 224 total acres graded and construction of 329 dwelling units and therefore emissions rates presented are conservative..

[2] PM_{10} and $PM_{2.5}$ generated by fugitive dust assumes implementation of SCAQMD Rule 403 for fugitive dust control and Mitigation Measures 2-1 and 2-2, which include dust control measures during ground-disturbing activities: replacing groundcover in disturbed areas quickly, watering exposed surfaces at least three time daily, implementation of equipment loading/unloading procedures to reduce fugitive dust, managing haul road dust by watering three times daily, reducing speed on unpaved roads to less than 15 mph, requiring at least 24 inches of freeboard on all haul vehicles, and use of non-toxic soil stabilizers.

[3] NO_x and particulate matter (PM_{10} and $PM_{2.5}$) generated by construction equipment exhaust assume implementation of Mitigation Measure 2-2, that is use of Tier 3 construction equipment for equipment 50 horsepower or greater, which was phased in between 2006 and 2008.

The maximum concentrations for PM_{10} and $PM_{2.5}$ from construction activities after mitigation are shown in Figures 5.2-4 and 5.2-5. As shown in the figures, implementation of Mitigation Measures 2-1 and 2-2 would reduce the concentration of PM_{10} and $PM_{2.5}$ at the existing sensitive receptors. The concentration of $PM_{2.5}$ would fall below the AAQS, and therefore localized air quality impacts from construction-related $PM_{2.5}$ would be reduced to less than significant. The concentration of PM_{10} would also be reduced to below the AAQS at the offsite receptors. However, concentrations of this air pollutant (PM_{10}) would continue to exceed the AAQS at the existing onsite receptor. Consequently, even with incorporation of mitigation measures, PM_{10} generated during grading activities would continue to exceed the AAQS and therefore generate substantial concentrations of air pollutants at sensitive receptors. Impact 5.2-4 would remain a significant and unavoidable project level impact for PM_{10}.

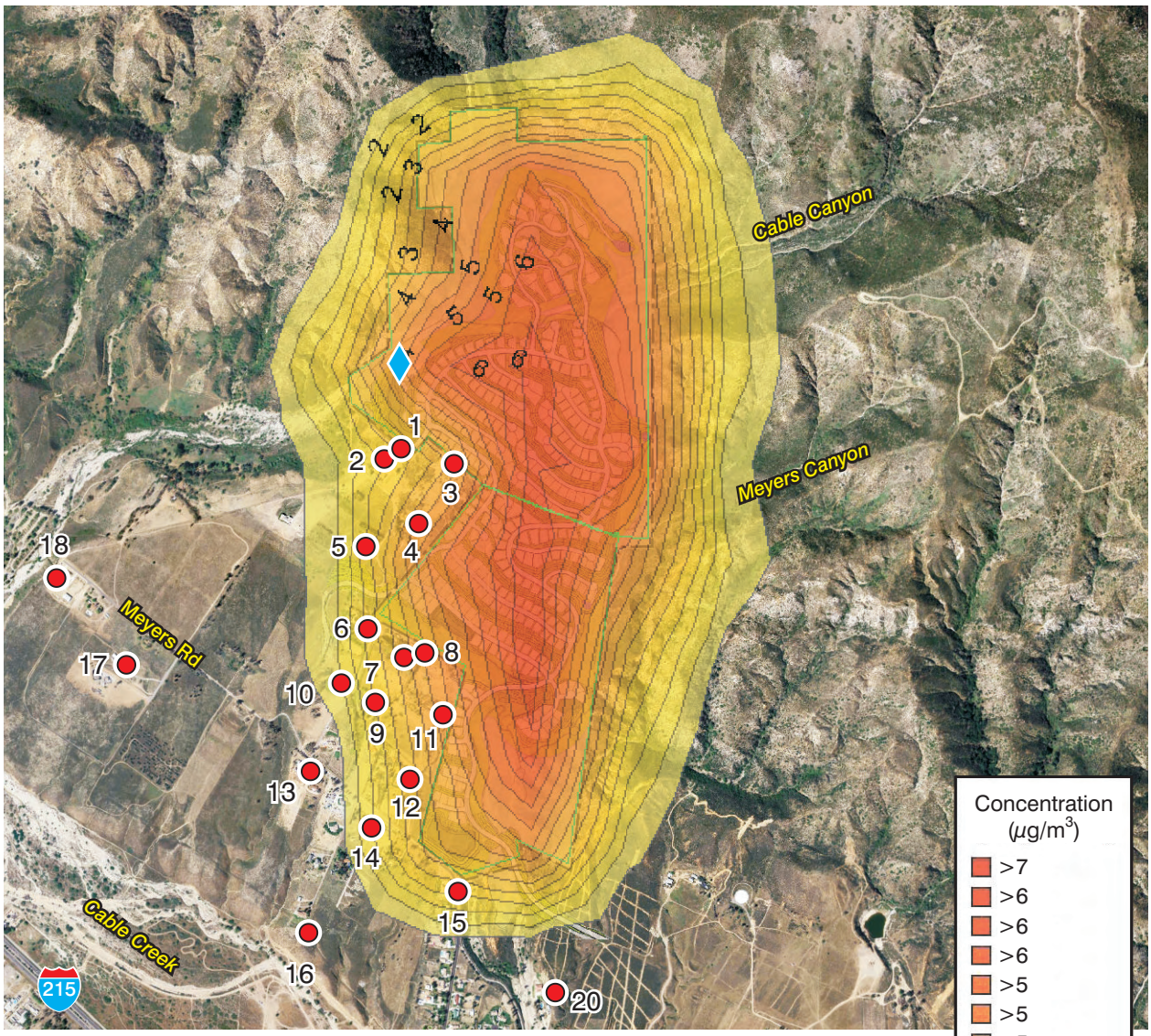
Mitigated Concentrations of PM_{10} from Construction Activities



Source: Google Earth Pro 2009

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Mitigated Concentrations of $PM_{2.5}$ from Construction Activities



Note: All concentrations are less than SCAQMD's significance threshold of 10.4 $\mu g/m^3$.

Source: Google Earth Pro 2009

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5.3 BIOLOGICAL RESOURCES

The analysis in this section is based in part on the following technical reports listed below:

- *Arborist Report, Martin Ranch, San Bernardino County*, Integrated Urban Forestry, 1998.
- *General Biological Resources Report, Martin Ranch Project Site, Unincorporated San Bernardino County, California*, Michael Brandman Associates, 2007.
- *Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report, Martin Ranch*, Michael Brandman Associates, 2007.
- *Post-Disturbance Arborist Report Update, Martin Ranch Project Site, Unincorporated San Bernardino County, California,* Michael Brandman Associates, 2007.
- *General Biological Resources Assessment Update, Martin Ranch Property, San Bernardino County, California*, Natural Resources Assessment, Inc., 2004.
- *Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan (Access Roads), San Bernardino County, California*, PBS&J, 2009.
- *Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan, San Bernardino County, California*, PBS&J, 2009.
- *San Bernardino Kangaroo Rat Presence/Absence Trapping Surveys, Spring Trails Project Site*, PBS&J, 2009.
- *Rare Plant Survey Letter Report, Spring Trails Specific Plan*, PBS&J, 2009.
- *Review and Update of the Biological Resources Associated with the Spring Trails Development and Associated Access Roads*, PBS&J, 2009.
- *Spring Trails Specific Plan, Biological Resources Assessment: Compiled from Assessments and Surveys Conducted from 1998 to 2009*, PBS&J, 2009 and 2011.
- *Biological Resources Assessment and Report for the Martin Ranch Property, San Bernardino County, California*, PCR Services Corporation, 1999 (surveys conducted 1998).
- *Results of a Live Trapping Survey for the Federally Endangered San Bernardino Kangaroo Rat on the Secondary Access Route for the Proposed Martin Ranch Project*, S.C. Dodd Biological Consulting, 2002.
- *Biological Technical Report Update: Proposed Martin Ranch Project, San Bernardino, California*, White and Leatherman Bioservices, 2002.
- *Results of Focused Presence/Absence Surveys for the Coastal California Gnatcatcher on the Martin Ranch Access Road Project*, White and Leatherman Bioservices, 2002.
- *Biological Technical Report: Proposed Secondary Access Road, Martin Ranch Project, San Bernardino, California*, White and Leatherman Bioservices, 2002.

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendices D1–D17).

5.3.1 Environmental Setting

The Spring Trails project site has been the subject of ongoing surveys and assessments since 1998. A comparison of current conditions with those reported in earlier assessments demonstrates that vegetation and wildlife on the project site have remained relatively stable over the last 13 years, despite one major wildfire event and several minor fire events. Vegetative composition has remained essentially unchanged, though some of the species and communities are less fully developed than was reported prior to the 2003 and 2007 fires. Wildlife species either confirmed to be on the site or with a high probability of occurrence on the site have also been stable. So far as is known, no sensitive species confirmed to be present on the site during earlier survey work has been extirpated. Conversely, no species confirmed to be absent from the site or with a low probability of occurrence on the site has been found to be present. This level of stability is not particularly surprising due to the vigorous reestablishment of vegetation on the site and the subsequent reestablishment of suitable habitats following the 2003 and 2007 fires.

The existing conditions described in this section are from a compilation of surveys and observations conducted on the site since 1998. This information was verified and updated in 2009 and 2011. This compiled information is presented in more detail in the report prepared by PBS&J (now known as Atkins North America): *Spring Trails Specific Plan, Biological Resources Assessment: Compiled from Assessments and Surveys Conducted from 1998 to 2009* (PBS&J 2011). Readers desiring more detailed explanations of the information presented in this section are directed to that report, included within this EIR as Appendix D12.

Plant Communities

The project site comprises a variety of plant communities and vegetation types. Seventeen different plant communities have been identified on the site, and a brief description of each community, the plant species common to it, and the current condition of the habitat is provided below. Figure 5.3-1 shows the distribution of the communities on the site. Table 5.3-1 summarizes each community and its area of coverage.

Table 5.3-1
Plant Communities on the Spring Trails Project Site

Plant Community	Acreage
California Walnut Woodland (CWW)	2.1
Canyon Live Oak Woodland (CLOW)	0.4
Ceonothus Crassifolius Chaparral (CCC)	10.1
Chamise Chaparral (CC)	9.1
Disturbed (D)	3.7
Eucalyptus (EUC)	5.5
Eucalyptus/Riversidean Sage Scrub (EUC/RSS)	12.1
Nonnative Grassland (NNG)	11.4
Northern Mixed Chaparral (NMC)	86.9
Ornamental (O)	0.7
Riversidean Alluvial Fan Sage Scrub (RAFSS)	4.4
Riversidean Sage Scrub (RSS)	168.4
Riversidean Sage Scrub/California Walnut Woodland (RSS/CWW)	19.8
Southern Sycamore-Alder Riparian Woodland (SSARW)	25.4
Southern Willow Scrub (SWS)	1.6
Southern Willow Scrub/California Walnut Woodland (SWS/CWW)	7.4
Sycamore Alluvial Woodland (SAW)	7.5

Sources: 1998: Integrated Urban Forestry. Arborist Report, Martin Ranch, San Bernardino County, California.
1999: PCR Services Corporation. Biological Resources Assessment and Report for the Martin Ranch Property, San Bernardino County, California. (Note: surveys conducted in 1998).
2002: White and Leatherman Bioservices. Biological Technical Report Update: Proposed Martin Ranch Project, San Bernardino, California.
2002: White and Leatherman Bioservices. Biological Technical Report: Proposed Secondary Access Road, Martin Ranch Project, San Bernardino, California.
2004: Natural Resources Assessment. General Biological Resources Assessment Update, Martin Ranch Property, San Bernardino County, California.
2007: Michael Brandman Associates. General Biological Resources Report, Martin Ranch Project Site, Unincorporated San Bernardino County, California.
2007: Michael Brandman Associates. Post-Disturbance Arborist Report Update, Martin Ranch Project Site, Unincorporated San Bernardino County, California.
2008: Michael Brandman Associates. Habitat Assessment Report, Spring Trails Project Site (Access Roads), Unincorporated San Bernardino County, California.
2009: PBS&J. Review and Update of the Biological Resources Associated with the Spring Trails Development and Associated Access Roads.
2009: PBS&J. Rare Plant Survey Letter Report, Spring Trails Specific Plan.

Note: Acreages are rounded to the nearest tenth of an acre

California Walnut Woodland (CWW). The California Department of Fish and Game (CDFG) lists CWW as rare, and it is considered a sensitive plant community. CWW was found in the northeastern portion of the property in a dense patch at the base of the hillsides. The woodland is healthy and has substantially recovered from the Old Fire. This community occupies 2.1 acres of the project site and integrates with the surrounding chaparral and Riversidean sage scrub (RSS) plant communities. Characteristic species found

onsite included California walnut (*Juglans californica* var. *californica*), coast live oak (*Quercus agrifolia*), sugar bush (*Rhus ovata*), and skunkbrush (*Rhus trilobata*). Understories consist of rushes (*Juncus* sp.), western ragweed (*Ambrosia psilostachya*), and tarragon (*Artemisia dracunculus*).

Canyon Live Oak Woodland (CLOW). CLOW is dominated by canyon live oak (*Quercus chrysolepis*), holly-leaved cherry (*Prunus ilicifolia*), and skunkbrush and is found on gentle to steep north-facing hillsides in the northwestern portion of the site in a small 0.4-acre patch. This woodland has recovered from the 2003 Old Fire and younger trees have reestablished within this community.

Ceonothus Crassifolius Chaparral (CCC). Hoary leaf ceonothus (*Ceonothus crassifolius*) chaparral occupies 10.1 acres and occurs in a large patch in the southern portion of the project site, with a much smaller patch in the north. CCC is a fire-adapted plant community. The community has substantially recovered from the 2003 Old Fire and is in an intermediate successional stage. Dominant plant species occurring onsite included hoary leaf ceonothus, chamise (*Adenostama fasciculatum*), toyon (*Heteromeles arbutifolia*), scrub oak (*Quercus berberidifolia*), and sugar bush occurring as subdominants.

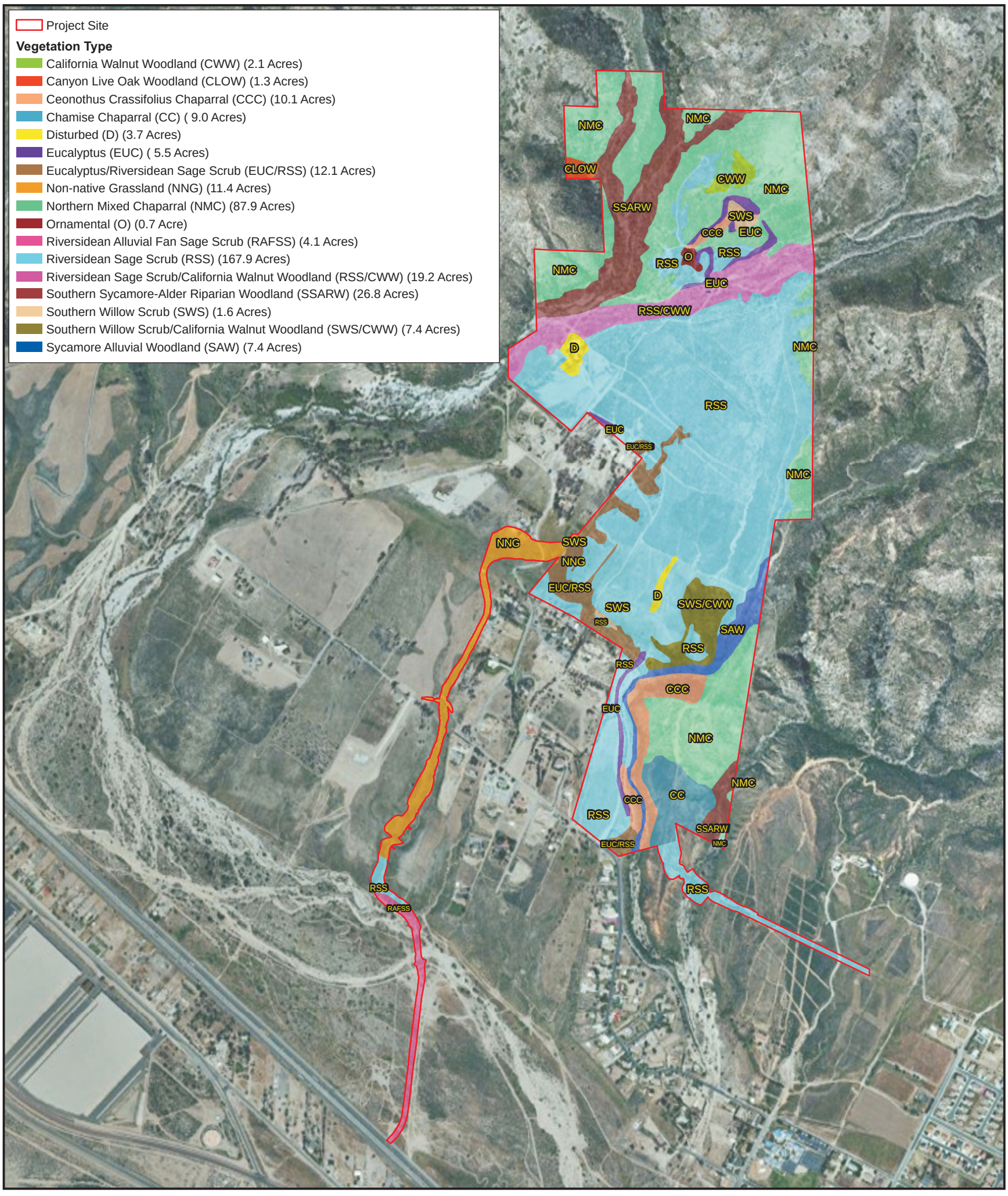
Chamise Chaparral (CC). Chamise chaparral comprises approximately 9.1 acres in the southern portion of the project site. Chamise chaparral is a fire-adapted plant community. The chamise chaparral community has substantially recovered from the 2003 Old Fire and is in an intermediate successional stage. Although chamise is the dominant shrub, other shrubs are present, including California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), golden yarrow (*Eriophyllum confertifolium*), deerweed (*Lotus scoparius*), and California sagebrush (*Artemisia californica*).

Disturbed (D). Scattered areas of disturbed habitat occur throughout the project site. Types of disturbed areas found on the property include cleared land, an existing residential area, and unpaved roads. In total, there are 3.7 acres of disturbed habitat.

Eucalyptus (EUC) and Eucalyptus/Riversidean Sage Scrub (EUC/RSS). Eucalyptus species occurring onsite include red gum (*Eucalyptus camaldulensis*), blue gum (*Eucalyptus globulus*), silver-dollar gum (*Eucalyptus polyanthemos*), and flooded gum (*Eucalyptus rudis*). These trees are scattered throughout the project site and intermix with RSS. The eucalyptus trees on the site are remnants of a commercial fuel wood plantation and are not native to the area. In total, there are 17.6 acres of eucalyptus trees at various levels of intermixing with surrounding plant communities: pure eucalyptus stands (5.5 acres) and EUC/RSS (12.1 acres).

Nonnative Grassland (NNG). This community is largely restricted to the upper portion of the proposed secondary access road alignment. All together, approximately 11.4 acres of the project site are vegetated by this community, and it is mostly restricted to the flatter areas of the site. Dominant species include wild oat (*Avena fatua*), slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), barley (*Hordeum vulgare*), fescue (*Vulpia myuros*), black mustard (*Brassica nigra*), red-stemmed filaree (*Erodium cicutarium*), and cheeseweed (*Malva parviflora*). NNG is often one of the first plant communities to reestablish following a disturbance such as a fire, and large areas can be permanently converted to this vegetation type if fires become too frequent or if a high-intensity fire event is followed by a prolonged period of drought. The relatively small size of this plant community attests to the overall recovery of the native plant communities on the project site.

Plant Communities Map



Source: PBS&J, ESRI Imaging 2011

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Northern Mixed Chaparral (NMC). This is the largest occurring chaparral community found on the site. It contains a diversity of broadleaved, drought-adapted shrubs, including chamise chaparral, whitethorn (*Ceanothus leucodermis*), scrub oak, birch-leaf mountain-mahogany (*Cercocarpus betuloides*), hoary leaf ceonothus, Mexican elderberry (*Sambucus mexicana*), holly-leaf cherry, toyon, and skunkbrush. NMC comprises 86.9 acres of the project site and occurs on the steeper, rocky slopes predominantly in the northern and eastern portions of the project site. Chaparral is a fire-adapted plant community. The chaparral community has substantially recovered from the 2003 Old Fire and is in an intermediate successional stage.

Ornamental (O). Less than an acre (approximately 0.7 acre) of ornamental vegetation occurs in the northern portion of the property around an old house foundation. The area includes tree of heaven (*Ailanthus altissima*), olive (*Olea europaea*), eucalyptus, California black walnut, and incense cedar (*Calocedrus decurrens*).

Riversidean Alluvial Fan Sage Scrub (RAFSS). The CDFG lists RAFSS as rare and it is considered a sensitive plant community. CDFG's list of natural communities categorizes plant communities first by general habitat, then as alliances within the general habitat, and finally as associations within alliances. RAFSS is an association within the RSS alliance, which falls within the general habitat type of coastal scrub. RAFSS is an open plant community adapted to the harsh conditions of periodic flooding. It grows on sandy, rocky alluvium deposited by streams that experience infrequent episodes of flooding. Alluvial sage scrub is composed of an assortment of drought-deciduous subshrubs and large, evergreen, woody shrubs that are adapted to the periodic and intense episodes of flooding and erosion that occur along alluvial fans.

Scalebroom (*Lepidospartum squamatum*) has a high fidelity to alluvial substrates and is located throughout this plant community. Additional species common to RAFSS and located onsite include: spiny redberry (*Rhamnus crocea*), chaparral yucca (*Yucca whipplei*), California croton (*Croton californicus*), birch-leaf mountain mahogany, yerba santa (*Eriodictyon trichocalyx*), and deerweed. The RAFSS onsite also contains buckwheat (*Eriogonom fasiculatum*) and annuals, including sun cup (*Camissonia* sp.), popcorn flower (*Cryptantha* sp.), and phacelia (*Phacelia distans*). There are approximately 4.4 acres of this plant community on the project site, all of which is located along the southern portion of the proposed secondary access road alignment within the alluvial channel of Cable Creek.

Riversidean Sage Scrub (RSS). CDFG lists RSS as a sensitive plant community. RSS is the most xeric (dry, desert-like) expression of coastal sage scrub in southern California and has adapted to periodic occurrence of fire and other forms of disturbance. The majority of RSS onsite has a history of disturbance. Much of the area currently supporting RSS was dryland farmed or grazed until 1989. Major fires can temporarily reduce or destroy this plant community. Today the RSS onsite has substantially recovered from the 2003 and 2007 fires and is currently in an intermediate phase of succession. This community is dominated by California buckwheat, deerweed, white sage, yerba santa, and black sage (*Salvia mellifera*). There are currently 168.4 acres of RSS within the project site. The largest block of RSS occurs within the central portion of the site, but several smaller patches are located in the northern and southern portions of the site, as well as along the primary access road alignment.

Riversidean Sage Scrub/California Walnut Woodland (RSS/CWW). There are approximately 19.8 acres of this mixed plant community located primarily within the unnamed tributary of Cable Creek that traverses the northern third of the site. CDFG lists both RSS and CWW as sensitive plant communities.

Southern Sycamore-Alder Riparian Woodland (SSARW). CDFG lists SSARW as rare and it is considered a sensitive plant community. There are 25.4 acres of SSARW onsite, primarily found in association with Cable Creek in the northwest corner of the site. A small patch of this woodland also occurs near the extreme southeastern corner of the site. Plants found within this community consisted primarily of big leaf maple (*Acer macrophyllum*), coast live oak, white alder (*Alnus rhombifolia*), western sycamore (*Platanus racemosa*),

California bay (*Umbellularia californica*), California black walnut, scrub oak, and Mexican elderberry. Understory species included California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), wild grape (*Vitus californica*), and mugwort (*Artemisia douglasiana*). This riparian woodland occurs within the canyon bottoms and was not as adversely affected by the wildfires as plant communities on the alluvial fans and hilltops. Vegetation within this woodland is diverse and healthy and shows no remaining adverse impacts from the 2003 Old Fire.

Southern Willow Scrub (SWS). CDFG lists SWS as a sensitive plant community. Two small areas, comprising 1.6 acres, of SWS occur on the project site. One large patch is located in the northern portion of the site and a smaller patch is located along the western boundary. The community is found primarily in association with Meyer Canyon and supports arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*), with lesser amounts of mule fat (*Baccharis salicifolia*), Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*), and Mexican elderberry. The understory consists of wild grape, poison oak, mugwort, California blackberry, and numerous ferns. This riparian woodland occurs within the canyon bottoms and was not as adversely affected as plant communities on the alluvial fans and hilltops. Vegetation within this woodland is diverse and healthy and shows no remaining adverse impacts from the 2003 Old Fire.

Southern Willow Scrub/California Walnut Woodland (SWS/CWW). The SWS found onsite is mixed with CWW in one large patch totaling 7.4 acres in the southern portion of the project site in the vicinity of the San Andreas Fault Zone. This community requires more moist conditions than what is present on the surrounding RSS areas. The community is probably present at this location because of upswellings of groundwater along the fault. The jurisdictional delineation conducted for the site (PBS&J 2009b) classified this area as a seasonal wetland. Vegetation within this woodland is diverse and healthy and shows no remaining adverse impacts from the 2003 Old Fire. CDFG lists both SWS and CWW as sensitive plant communities.

Sycamore Alluvial Woodland (SAW). CDFG lists SAW as a sensitive plant community. Sycamore alluvial woodland is located on the site, and is dominated by western sycamore, scrub oak, and Mexican elderberry. The 7.5 acres of woodland are associated with the braided, depositional channels of Meyers Canyon in the southern portion of the site. Vegetation within this woodland is diverse and healthy and shows no remaining adverse impacts from the 2003 Old Fire.

Special Status Plant Communities

Of the 17 plant communities described above, 8 are considered sensitive by either the US Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), or CDFG. These communities are listed below. See Figure 5.3-1 for the location of these communities within the project site.

- California Walnut Woodland (CWW)
- Riversidean Alluvial Fan Sage Scrub (RAFSS)
- Riversidean Sage Scrub (RSS)
- Riversidean Sage Scrub/California Walnut Woodland (RSS/CWW)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Southern Willow Scrub (SWS)
- Southern Willow Scrub/California Walnut Woodland (SWS/CWW)
- Sycamore Alluvial Woodland (SAW)

A small portion of the site (12.1 acres) is occupied by an intermixed community of eucalyptus and Riversidean sage scrub. Even though this intermixed community contains elements of RSS, which would normally qualify for sensitive community status, it is sufficiently dominated by eucalyptus that the native RSS habitat has been substantially degraded. For this reason, the combined 12.1 acres of EUC/RSS on the site are not considered a sensitive plant community.

Special Status Plant Species

A number of special status plant species appear on California Natural Diversity Database (CNDDB) searches for the project area or are otherwise considered as having a potential to occur on the project site. Numerous focused plant surveys and other assessments have been conducted on the site since 1998. Table 5.3-2 provides a summary of the results of these surveys, together with a listing of the specific reports and surveys from which the information was derived.

No plant species listed as either endangered or threatened under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA) have been observed on the project site. These negative findings have been consistent for all surveys performed on the site since 1998.

Plummer's mariposa lily (*Calochortus plummerae*) has been observed on the site and is expected to occur in other areas where it has not been directly observed based on the presence of suitable habitat and known occurrences in the area. Plummer's mariposa lily is classified as a CNPS List 1B species, which means that the plant is considered to be rare in California and elsewhere.

California black walnut is present on the project site. California black walnut is only listed as a CNPS List 4 species, but since it is the primary constituent of the California walnut woodland community, which is considered a special status plant community, it is included here as a special status plant species.

A number of CNPS List 3 and 4 plant species have been recorded on the site, and information regarding those species is presented in Table 5.3-2. List 3 and 4 species are species for which more information is needed or with limited distribution. These lists are maintained as review and watch lists and the species listed are not necessarily considered rare or endangered.



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Table 5.3-2
Potential Sensitive Plant Species on the Spring Trails Project Site

Species	Status Fed/State/CNPS	Observed Onsite?					Likelihood of Occurrence
		1998	2002	2007	2008	2009	
Nevin's barberry (*Berberis nevinii*)	FE/SE/1B	No	No	No	No	No	Very low likelihood of occurrence as species is easily observed and recognizable and repeat surveys have been consistently negative
Slender-horned spineflower (*Dodecahema leptoceras*)	FE/SE/1B	No	No	No	No	No	Low to moderately suitable habitat is present in Cable Creek, but repeat negative surveys would strongly suggest that the species is not present
Santa Ana River woollystar (*Eriastrum densifolium ssp. Sanctorum)*	FE/SE/1B	No	No	No	No	No	Low to moderately suitable habitat is present in Cable Creek, but repeat negative surveys would strongly suggest that the species is not present
Marsh sandwort (*Arenaria paludicola*)	FE/SE/1B	No	No	No	No	No	None, no suitable habitat present on the site
Thread-leaved brodiaea (*Brodiaea filifoliai*)	FT/SE/1B	No	No	No	No	N/D	None, no suitable habitat present on the site
Parish's bush mallow (*Malacothamnus parishii*)	None/None/1A	N/D	No	N/D	N/D	N/D	Absent, presumed extinct in region
Orcutt's brodiaea (*Brodiaea orcuttii*)	None/None/1B	No	No	No	No	N/D	None, well outside of species geographic range and no suitable habitat present on the site
Plummer's mariposa lily (*Calochortus plummerae*)	None/None/1B	Yes	No	Yes	No	No	Present on site
Many-stemmed dudleya (*Dudleya multicaulis*)	None/None/1B	No	No	No	No	No	None, well outside of species geographic range and no suitable habitat present on the site
San Bernardino Mountain owl's clover (*Castilleja lasiorhyncha*)	None/None/1B	No	No	No	No	No	None, well below the species elevation range
Smooth tarplant (*Centrodadia pungens* ssp. *Laevis*)	None/None/1B	No	No	No	No	No	Unlikely to occur, only marginal habitat and at the margin of its geographic range
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	None/None/1B	No	No	No	No	No	Very low likelihood of occurrence, plant is probably extinct
Lemon lily (*Lilium parryi*)	None/None/1B	N/D	No	N/D	N/D	N/D	Absent, below elevation range

Table 5.3-2
Potential Sensitive Plant Species on the Spring Trails Project Site

Species	Status Fed/State/CNPS	Observed Onsite?					Likelihood of Occurrence
		1998	2002	2007	2008	2009	
Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)	None/None/1B	N/D	No	No	N/D	No	Not observed, low probability of occurrence as outside of species range and no suitable habitat is present on the site
Palmer's mariposa lily (*Calochortus plummerae*)	None/None/1B	N/D	No	N/D	N/D	N/D	Absent, no suitable habitat present on the site
Robinson's pepper grass (*Lepidum virgincum* var. *robinsonii*)	None/None/1B	N/D	No	N/D	N/D	N/D	Absent, above elevation range
Short-joint beavertail (*Optuntia basilaris* var. *brachyclada*)	None/None/1B	N/D	No	N/D	N/D	N/D	Not observed, low probability of occurrence, below elevation range
White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*)	None/None/1B	N/D	No	N/D	N/D	N/D	Not observed, low probability of occurrence as site is outside of species range
Black sedge (*Schoenus nigricans*)	None/None/2	N/D	No	N/D	N/D	N/D	Absent, no suitable habitat present on the site
Hot springs fimbristylis (*Fimbristylis thermalis*)	None/None/2	No	No	No	No	No	Absent, no suitable habitat present on the site
Parish's desert thorn (*Lycium parishii*)	None/None/2	N/D	No	N/D	N/D	N/D	Absent, no suitable habitat present on the site
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	None/None/3	No	No	No	No	No	Not observed, but could occur on the site as suitable habitat for the species is present
California black walnut (*Juglans californica* var. *californica*)	None/None/4	N/D	Yes	N/D	N/D	Yes	Present on site
California muhly grass (*Muhlenbergia californica*)	None/None/4	N/D	No	N/D	N/D	No	Not observed, suitable habitat is present within the riparian habitat of Cable Creek, but repeat negative surveys would strongly indicate that species is absent from the site
California spineflower (*Mucronea californica* var. *Chorizanthe californica*)	None/None/4	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence in open sites in shrublands

Table 5.3-2
Potential Sensitive Plant Species on the Spring Trails Project Site

Species	Status Fed/State/CNPS	Observed Onsite?					Likelihood of Occurrence
		1998	2002	2007	2008	2009	
Ocellated Humboldt lily (*Lilium humboldtii* var. *ocellatum*)	None/None/4	N/D	No	N/D	N/D	No	Not observed, high probability of occurrence in riparian habitat of Cable Creek
Golden violet (*Viola aurea*)	N/D	N/D	No	N/D	N/D	N/D	Absent, below elevation range and outside of geographical range

Sources: 1998: Integrated Urban Forestry. Arborist Report, Martin Ranch, San Bernardino County, California.
1999: PCR Services Corporation. Biological Resources Assessment and Report for the Martin Ranch Property, San Bernardino County, California. (Note: surveys conducted in 1998).
2002: White and Leatherman Bioservices. Biological Technical Report Update: Proposed Martin Ranch Project, San Bernardino, California.
2002: White and Leatherman Bioservices. Biological Technical Report: Proposed Secondary Access Road, Martin Ranch Project, San Bernardino, California.
2007: Michael Brandman Associates. General Biological Resources Report, Martin Ranch Project Site, Unincorporated San Bernardino County, California.
2007: Michael Brandman Associates. Post-Disturbance Arborist Report Update, Martin Ranch Project Site, Unincorporated San Bernardino County, California.
2008: Michael Brandman Associates. Habitat Assessment Report, Spring Trails Project Site (Access Roads), Unincorporated San Bernardino County, California.
2009: PBS&J. Review and Update of the Biological Resources Associated with the Spring Trails Development and Associated Access Roads.
2009: PBS&J. Rare Plant Survey Letter Report, Spring Trails Specific Plan.

Notes: N/D = No data

Federal (USFWS):
FE: Federally listed, endangered
FT: Federally listed, threatened

State (CDFG):
SE: State listed, endangered
ST: State listed, threatened

California Native Plant Society (CNPS) List:
List 1A: Plants presumed extinct in California
List 1B: Plants rare, threatened or endangered in California and elsewhere
List 2: Plants rare, threatened or endangered in California but more common elsewhere
List 3: Plants for which more information is needed; a review list
List 4: Plants of limited distribution; a watch list

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Tree Resources on the Project Site

Arborist reports were prepared for the site in 1998 and 2007 (Integrated Urban Forestry 1998; MBA 2007c). The 2007 report was prepared as an update of conditions on the site following the October 2003 Old Fire. A general inventory and assessment of the condition of the trees on the site were undertaken during both the 1998 and 2007 surveys. The 2007 report found that the native tree species on the site had vigorously recovered from the effects of the 2003 fire.

The 1998 survey found approximately 4,000 trees on the project site. Approximately 34 percent of those were native tree species, while the remaining 66 percent were eucalyptus and nonnative ornamental species. Eucalyptus trees constituted the majority of the nonnative species, with approximately 2,560 trees. These trees were originally planted for lumber and fuel wood. Evidence was present to suggest that the eucalyptus on the site had been harvested numerous times. Evidence was also present to suggest that the trees had been damaged during previous fire events, most likely the 1980 Panorama Fire. Both of these determinations were made based on the presence of stump sprouts that likely became established following fire damage or coppicing, which is a traditional method of timber management that takes advantage of the fact that many trees reshoot from the stump or roots if cut down or damaged. A number of other nonnative species were also observed on the site, including tree-of-heaven, olive, and fruit-bearing orchard trees such as apricot, peach, and apple trees.

The 1998 survey found approximately 1,350 native trees on the project site, not including small trees or multi-trunked shrubs. Native trees included California bay, California black walnut, white alder, western sycamore, and canyon live oak. Table 5.3-3 provides a summary of the native tree species identified on the site during the 1998 survey.



Table 5.3-3
Summary of Native Trees on the Spring Trails Project Site (1998)

Tree Species	Total Mature Trees	Small Plants not Included in Count	Location
California bay (*Umberrularia californica*)	372	Many	Mostly in Cable Canyon
California black walnut (*Juglans californica*)	310	Many	Northern portion of site and also on sides of most channels
White alder (*Alnus rhombifolia*)	218	Some	In east and west forks of Cable Creek
California sycamore (*Plantus racemosa*)	196	Many	Bottom of Myers Creek and other tributaries
Canyon live oak (*Quercus chrysolepis*)	154	Few	Largest in southeast fork of Cable Canyon
Big-leaf maple (*Acer macrophyllum*)	30	Few	In east and west forks of Cable Creek
Narrow-leaf cottonwood (*Populus angustifolia*)	17	Many	Found next to water in Cable Creek
Incense cedar (*Calocedrus decurrens*)	11	Few	Planted as an ornamental at the existing residence
Mountain mahogany (*Cercocarpus betuloides*)	8	Some	Largest occurrence in Cable Canyon
Bigcone Douglas fir (*Pseudotsuga macrocarpa*)	8	Few	On east-facing slope of Cable Canyon
Holly-leaf cherry (*Prunus ilicifolia*)	6	Some	On east side of Cable Creek, before fork
Scrub oak (*Quercus berberidifolia*)	6	Many	Some hybridization with canyon live oak
Great-berried Manzanita (*Arctostaphylus glauca*)	5	Some	Largest on steep western canyon wall of Cable Creek
Mexican elderberry (*Sambucus Mexicana*)	5	Many	Mostly shrubs throughout
Red willow (*Salix lasiandra*)	2	Some	Largest in west Meyers Canyon
Arroyo willow (*Salix lasiolepis*)	0	Many	In wet areas

Sources: 1998: Integrated Urban Forestry. Arborist Report, Martin Ranch, San Bernardino County, California.
2007: Michael Brandman Associates. Post-Disturbance Arborist Report Update, Martin Ranch Project Site, Unincorporated San Bernardino County, California.

The 2007 arborist survey gathered data on each sensitive native tree vegetation community and provided an update as to their condition and outlook following the 2003 Old Fire. Individual trees were not specifically evaluated. Rather, the focus of the evaluation was extended to the entire community. The analysis concluded that each of the communities had recovered well from the 2003 fire. All communities exhibited resprouting or other forms of reestablishment and the outlook for full recovery was considered very favorable.

Wildlife

The project site contains a variety of habitats and thus has the potential to support a wide number of wildlife species. Table 5.3-4 provides a summary of the results of the various habitat assessments and focused surveys that have been conducted on the site since 1998, together with a listing of the specific reports and surveys from which the information was derived. Narrative summary discussions of the findings for each wildlife group are provided below.

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Mammals								
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	FE/SSC	Yes	No	No	No	N/D	No	Repeated focused surveys have been negative for this species. Nevertheless, suitable habitat is present and the area is within USFWS designated critical habitat. Therefore there remains a moderate potential for the species to occur on the site along the lower portion of the secondary access road alignment.
American badger (*Taxidea taxus*)	SSC	N/A	N/D	No	N/D	No	No	Not observed, high probability of occurrence based on presence of suitable habitat
Big free-tailed bat (*Nyctinomops macrotis*)	SSC	N/A	N/D	No	N/D	N/D	N/D	Not observed, unknown probability of occurrence
California leaf-nosed bat (*Macrotus californicus*)	SSC	N/A	N/D	No	N/D	N/D	N/D	Not observed, moderate probability of occurrence and use of area for foraging
California mastiff bat (*Eumops perotis californicus*)	SSC	N/A	N/D	No	N/D	N/D	N/D	Not observed, unknown probability of occurrence
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	SSC	N/A	Yes	Yes	Yes	N/D	Yes	Present onsite based on capture during focused surveys for SBKR
Occult little brown bat (*Myotis lucifugus occultus*)	SSC	N/A	N/D	No	N/D	N/D	N/D	Not observed, moderate to high probability of occurrence and use of area for foraging and roosting
Pallid San Diego pocket mouse (*Chaetodipus fallax fallax pallidus*)	SSC	N/A	N/D	N/D	N/D	N/D	No	Suitable habitat onsite, nearest recorded occurrence two miles, not observed during repeat SBKR surveys, moderate potential for occurrence
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	SSC	N/A	No	No	N/D	No	N/D	Outside of known range; unlikely to occur
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	SSC	N/A	N/D	No	No	No	No	Not observed, high probability of occurrence
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	N/A	Yes	Yes	Yes	Yes	No	Present onsite based on capture during previous focused surveys for SBKR

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax)*	SSC	N/A	Yes	Yes	Yes	N/D	Yes	Present onsite based on capture during focused surveys for SBKR
Southern grasshopper mouse (*Onychomys torridus Ramona*)	SSC	N/A	No	No	No	No	No	Not captured during focused survey trapping effort for SBKR. Low probability of occurrence due to lack of suitable habitat
Western mastiff bat (*Eumops perotis*)	SSC	N/A	No	N/D	No	No	N/D	Marginal habitat onsite, low potential to occur
White-eared pocket mouse (*Perognathus alticola alticola*)	SSC	N/A	No	No	No	No	No	Not present, site is well below known elevation range. Not captured during previous focused survey trapping efforts for SBKR
Ring-tailed cat (*Bassariscus astutus*)	USFS "special"/SSC	N/A	No	No	No	No	No	Not observed, moderate probability of occurrence due to moderately suitable habitat in Cable Creek area
Birds								
Least Bell's vireo (*Vireo bellii* ssp. *pusillus*)	FE, SSC	No	No	No	Yes	No	No	Present onsite, observed along Cable Creek during focused survey in 2007
Southwestern willow flycatcher (*Empidonox traillii extimus*)	FE, SE	No	No	No	No	No	No	Moderately suitable habitat in Cable Creek, nearest recorded occurrence seven miles. Focused surveys in 2007 negative. Previous and subsequent general habitat surveys negative. Moderate potential for occurrence based on presence of quality habitat
Coastal California gnatcatcher (*Polioptila californica*)	FT, SSC	No	No	No	No	N/D	No	Absent, based on focused surveys. Nearest recorded location is five miles to the east
Bell's sage sparrow (*Amphispiza belli belli*)	SSC	N/A	Yes	Yes	Yes	No	No	Present based on previous surveys and observations
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	SSC	N/A	Yes	Yes	Yes	No	No	Present based on previous surveys and observations
Tri-colored blackbird (*Agelaius tricolor*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to lack of suitable habitat and lack of local occurrences

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Black-chinned sparrow (*Spizella atrogularis*)	SSC	N/A	N/D	No	N/D	No	No	Not observed, but high probability of occurrence based on suitable habitat
Burrowing owl (*Speotyto cunicularia*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to lack of suitable habitat
Cactus wren (*Campytorhynchus bruneicapillus couesi*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence based on lack of suitable habitat
California horned lark (*Eremophila alpestris actia*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to marginally suitable habitat
Chipping sparrow (*Spizella passerina*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, but could use site for foraging
Cooper's hawk (*Accipiter cooperii*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Ferruginous hawk (*Buteo regalis*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Grasshopper sparrow (*Ammodramus savannarum*)	SSC	N/A	N/D	No	No	No	No	Not observed, low probability of occurrence based on lack of suitable habitat
Golden eagle (*Aquila chrysaetos*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Lawrence's goldfinch (*Carduelis lawrencei*)	SSC	N/A	N/D	Yes	N/D	N/D	No	Present, based on previous observations
Loggerhead shrike (*Lanius ludovicianus*)	SSC	N/A	No	No	No	No	No	Not observed, high probability of occurrence due to suitable habitat
Long-eared owl (*Asio otus*)	SSC	N/A	N/D	No	N/D	N/D	N/D	Not observed, low probability of occurrence
Merlin (*Falco columbaris*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Northern harrier (*Circus cyaneus*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Olive-sided flycatcher (*Contopus borealis*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, would be migratory but not resident
Prarie falcon (*Falco mexicanus*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Sharp-shinned hawk (*Accipiter striatus)*	SSC	N/A	Yes	Yes	Yes	No	No	Present, based on previous observations
White-tailed kite (*Elanus leucerus*)	SSC	N/A	No	No	No	No	No	Not observed, but may use site for foraging
Yellow-breasted chat (*Icteria virens*)	SSC	N/A	No	No	No	No	No	Not observed, moderate probability of occurrence in riparian habitat
Yellow warbler (*Dendroica petechia*)	SSC	N/A	No	No	No	No	No	Not observed, moderate probability of occurrence in riparian habitat
Bald eagle (*Haliaeetus leucocephalus*)	SE	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence based on lack of suitable habitat
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	SE	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence (local occurrences extinct)
Swainson's hawk (*Buteo swainsonii*)	ST	N/A	N/D	No	No	No	No	Not observed, but may use site for foraging
Amphibians and Reptiles								
Arroyo southwestern toad (*Bufo californicus*)	FE, SSC	No	No	No	No	No	No	Marginally suitable habitat in Cable Creek, nearest recorded occurrence 5.9 miles, moderate potential for occurrence
California red-legged frog (*Rana aurora draytonii*)	FT, SSC	No	No	No	No	No	No	Not observed, low probability of occurrence due to lack of suitable habitat and lack of nearby occurrences
Mountain yellow-legged frog (*Rana muscosa*)	FT, SSC	No	No	No	No	No	No	Marginally suitable habitat in Cable Creek, nearest recorded occurrence 6.9 miles. Low potential for occurrence based on only marginally suitable habitat and distance to nearest known occurrence
California glossy snake (*Arizona elegans occidentalis*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, moderate to high probability of occurrence based on presence of suitable habitat
California silvery legless lizard (*Anniella pulchra pulchra*)	SSC	N/A	N/D	No	No	No	No	Not observed, moderate to high probability of occurrence based on presence of suitable habitat

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	SSC	N/A	N/D	No	No	No	No	Not observed, high probability of occurrence based on presence of suitable habitat
Coastal western whiptail (*Cnemidophorus tigris multiscutatus*)	SSC	N/A	N/D	Yes	No	N/D	No	Present onsite based on observation in 2002
Large blotched salamander (*Ensatina eschscholtzii klauberi*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence due to lack of suitable habitat (high stream gradients, lack of pools, high silt content)
Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to fact that site is outside of the species historic range
Red diamond rattlesnake (*Crotalus exsul*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence (outside geographic range)
Rosy boa (*Lichanura trivirgata*)	SSC	N/A	N/D	No	No	No	No	Not observed, high probability of occurrence
San Bernardino Mountain kingsnake (*Lampropeltis zonata parvirubra*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, moderate to high probability of occurrence based on presence of suitable habitat
San Bernardino ring-neck snake (*Diadophis punctatus modestus*)	SSC	N/A	No	No	No	N/D	No	Not observed, high probability of occurrence based on presence of suitable habitat
San Diego banded gecko (*Coleonyx variegates abbotti)*	SSC	N/A	N/D	No	No	No	No	Not observed, moderate probability of occurrence
San Diego horned lizard (*Phrynosoma coronatum blainvillei*)	SSC	N/A	Yes	Yes	Yes	No	No	Present based on surveys and observations
San Gabriel Mountains slender salamander (*Batrachoseps gabrieli*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, low probability of occurrence due to lack of suitable habitat (high stream gradients, lack of pools, high silt content)
Southwestern pond turtle (*Clemmys marmorata pallida*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to lack of suitable habitat

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	
Two-striped garter snake (*Thamnophis hammondii*)	SSC	N/A	No	No	No	N/D	No	Not observed, high probability of occurrence based on presence of suitable habitat
Western spadefoot toad (*Scaphiopus hammondii*)	SSC	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to lack of suitable habitat
Yellow-blotched salamander (*Ensatina escschholtzii*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, moderate to high probability of occurrence based on presence of suitable habitat
Southern rubber boa (*Charina bottae umbricata*)	ST	N/A	No	No	No	No	No	Not observed, low probability of occurrence due to site being well below species elevation range
Fish								
Unarmored threespine (*Gasterosteus aculeatus williamsonii*)	FE, SE	No	N/D	No	N/D	N/D	No	Absent based on lack of suitable habitat (species is also extinct from Santa Ana River watershed)
Santa Ana sucker (*Catostomus santaanae*)	FT, SSC	No	N/D	No	No	N/D	No	Not observed, very low probability of occurrence due to lack of suitable habitat and elevation of site
Arroyo chub (*Gila orcutti*)	SSC	N/A	N/D	No	N/D	N/D	No	Not observed, very low probability of occurrence due to lack of suitable habitat and elevation of site
Santa Ana speckled dace (*Rhinichthys osculus*)	SSC	N/A	N/D	No	N/D	No	No	Not observed, very low probability of occurrence due to lack of suitable habitat
Invertebrates								
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE	No	No	N/D	N/D	N/D	No	Not observed, low probability of occurrence due to lack of suitable habitat

Table 5.3-4
Potential Sensitive Wildlife Species on the Spring Trails Project Site

Species	Status Fed/State	In Critical Habitat?	Observed Onsite?					Likelihood of Occurrence
			1998	2002	2007	2008	2009	

Sources: 1999: PCR Services Corporation. Biological Resources Assessment and Report for the Martin Ranch Property, San Bernardino County, California. (Note: surveys conducted in 1998).
2002: S.C. Dodd Biological Consulting. Results of a Live Trapping Survey for the Federally Endangered San Bernardino Kangaroo Rat on the Secondary Access Route for the Proposed Martin Ranch Project.
2002: White and Leatherman Bioservices. Biological Technical Report Update: Proposed Martin Ranch Project, San Bernardino, California.
2002: White and Leatherman Bioservices. Results of Focused Presence/Absence Surveys for the Coastal California Gnatcatcher on the Martin Ranch Access Road Project.
2002: White and Leatherman Bioservices. Biological Technical Report: Proposed Secondary Access Road, Martin Ranch Project, San Bernardino, California.
2007: Michael Brandman Associates. General Biological Resources Report, Martin Ranch Project Site, Unincorporated San Bernardino County, California.
2007: Michael Brandman Associates. Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report, Martin Ranch.
2008: Michael Brandman Associates. Habitat Assessment Report, Spring Trails Project Site (Access Roads), Unincorporated San Bernardino County, California.
2009: PBS&J. Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan (Access Roads), San Bernardino County, California.
2009: PBS&J. Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan, San Bernardino County, California.
2009: PBS&J. San Bernardino Kangaroo Rat Presence/Absence Trapping Surveys, Spring Trails Project Site.
2009. PBS&J. Rare Plant Survey Letter Report, Spring Trails Specific Plan.

Notes: N/D = No data; N/A = Not applicable

Federal (USFWS):	State (CDFG):
FE: Federally listed, endangered	SE: State listed, endangered
FT: Federally listed, threatened	ST: State listed, threatened
	SSC: Species of Special Concern

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Mammals

A number of mammal species have been either directly observed, or their presence deduced by diagnostic sign (track, scat, burrows, etc.). Among these were the desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), and black bear (*Ursus americanus*).

Mammal-trapping sessions conducted in 1998, 2002, 2007, and 2009 revealed the presence of numerous small mammal species within the Spring Trails project area. Species found include deer mouse (*Peromyscus maniculatus*), California mouse (*Peromyscus californicus*), cactus mouse (*Peromyscus eremicus*), dusky-footed woodrat (*Neotoma fuscipes*), San Diego pocket mouse (*Chaetodipus fallax*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), western harvest mouse (*Reithrodontomys megalotis*), and Pacific kangaroo rat (*Dipodomys agilis*).

Special Status Mammal Species

San Bernardino kangaroo rat (*Dipodomys merriami parvus*) (SBKR) is listed as endangered under the FESA. The species was not captured on the site during any of the trapping efforts. However, the project site does provide suitable habitat for the species, and SBKR were trapped on a nearby property in 2004. Additionally, a portion of the proposed secondary access road alignment is within designated USFWS critical habitat for SBKR. Therefore, the area has a high probability of being occupied by SBKR, and because it is within critical habitat and a federal discretionary action would be required (issuance of a Section 404 permit by the US Army Corps of Engineers), consultation with the USFWS under Section 7 of the ESA would be required.

San Diego pocket mouse (*Chaetodipus fallax fallax*) is a California Species of Special Concern (SSC). The species was captured on the project site during each of the trapping efforts. Potential impacts to San Diego pocket mouse are not typically considered significant under CEQA because this species is widespread and abundant on a local and regional level.

Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) is also an SSC. The species was also captured on the project site during each of the trapping efforts. Unlike the San Diego pocket mouse, the range and preferred habitat of Los Angeles pocket mouse is narrow, and the species is not known to be locally or regionally abundant. Therefore, even though the status of SSC does not afford any specific legal protection, potential impacts to the species may be of concern to regulatory agencies such as CDFG.

Birds

A number of bird species have been directly observed on the site, or have been determined to be present based on vocalizations. General habitat assessments were conducted on the project site in 1998, 2002, 2007, 2008, and 2009. In addition, focused surveys were conducted for coastal California gnatcatcher (CAGN) in 1998, 2002, and 2007. Focused surveys were also conducted for least Bell's vireo (LBV) and southwestern willow flycatcher (SWF) in 2007.

A summary of sensitive bird species with the potential to occur on the project site is presented in Table 5.3-4 together with a listing of the specific reports and surveys from which the information was derived. A narrative discussion of the sensitive species known to occur on the site or otherwise deserving of additional explanation is presented below.

Special Status Bird Species

Coastal California gnatcatcher is listed as threatened under the FESA. The species was not observed on the site during any of the survey efforts. Portions of the project site were formerly included within USFWS-

designated critical habitat for the species. However, USFWS revisions to CAGN critical habitat in 2007 modified the extent of designated habitat throughout the region and the project site is now no longer within designated critical habitat.

Based on repeated negative findings for CAGN during numerous survey efforts, as well as the site's exclusion from designated critical habitat, it is reasonable to assume that the species does not occur upon the project site. However, suitable habitat is present on the site so it is also reasonable to conclude that the species has a low to moderate potential to move onto the site at some point in the future.

The Sycamore Alluvial Woodland plant communities in Cable Creek and Meyers Creek provide suitable habitat for the SWF which is listed as endangered under both the FESA and the CESA. Focused surveys conducted in 2007 returned negative findings, and previous and subsequent general habitat assessment surveys have also been negative. The nearest recorded occurrence of the species is seven miles from the project site. However, the riparian habitat on the site in 2007 was still recovering from the 2003 Old Fire and was observed to be nearly fully recovered in 2009. As this habitat more fully matures it will provide more suitable habitat for the species. Therefore, owing to the quality of the available habitat on the site, it is reasonable to assume that there is a moderate potential for the species to occur.

The riparian woodland plant communities in Cable Creek and Meyers Creek provide suitable habitat for the LBV which is listed as endangered under both the FESA and the CESA. A focused survey for the species conducted in 2007 confirmed species presence off the property to the west of the site in the relatively lush riparian areas of Cable Creek. These riparian areas extend northeastwards along Cable Creek into the northwestern portion of the site, so there is a high probability that LBV could utilize the riparian habitat that is present on the northwestern side of the project site. It is not known if the observation that was made in 2007 was a bird that was actively nesting in the area or was simply passing through. As the riparian vegetation in this area continues to recover from the effects of the 2003 Old Fire, it will provide more suitable high quality habitat for LBV. Based on the findings of the 2007 focused survey and the presence of suitable habitat, it is therefore assumed that this portion of the project area is occupied by LBV.

Reptiles and Amphibians

A summary of sensitive reptile and amphibian species with the potential to occur on the project site is presented in Table 5.3-4, together with a listing of the specific reports and surveys from which the information was derived. A narrative discussion of the sensitive species known to occur on the site or otherwise deserving of additional explanation is presented below.

Special Status Reptile and Amphibian Species

The perennial stream in Cable Creek provides suitable habitat for arroyo southwestern toad (*Bufo californicus*); however, focused surveys conducted in 2007 in the vicinity were negative. The closest recorded occurrence is approximately six miles from the project site. However, owing to the presence of suitable habitat, there is a moderate potential for this species to occur on the project site.

A habitat evaluation conducted for California red-legged frog (*Rana aurora draytonii*) in 2002 (WBL 2002) determined that suitable habitat for the species is not present and that the potential for species occurrence on the site is low. This is largely due to the high stream gradient, lack of pools, and the high silt content of Cable Creek. These characteristics are not conducive to supporting this species. Historical occurrences of the species were known to occur in the Inland Empire and western San Bernardino Mountains, but those populations are now presumed to have been extirpated.

A habitat evaluation conducted for mountain yellow-legged frog (*Rana muscosa*) in 2002 determined that marginally suitable habitat for the species is present along Cable Creek through the northwestern corner of

the project site and for at least one mile upstream of the site (WLB 2002). Focused surveys for the species conducted that same year, however, failed to detect any mountain yellow-legged frogs within any of the areas where suitable habitat was present. The survey was notable in that no evidence of any stream-breeding amphibians was detected during the survey. The surveyor determined that the likely reason for such a low diversity of herpetofauna was the combined effects of sedimentation, water diversion, and human disturbance along the creek bed. It is likely that habitat for this species has been further degraded by upstream effects associated with the 2003 Old Fire.

The nearest known extant occurrence of mountain yellow-legged frogs to the project site is City Creek, approximately seven miles to the east of the site. Until this population was discovered in 1999, it was believed that the species had been extirpated from the San Bernardino Mountains. However, based on the survey findings on the project site, the distance to the nearest known occurrence, and the presence of only marginally suitable habitat on the site, it is reasonable to assume that the species is not present on the project site and has a low potential for future occurrence.

Wildlife Movement Corridors

Formal wildlife movement corridor studies such as the use of track plates, camera stations, scent stations, or snares have not been conducted on the project site. However, general conclusions can be made regarding the presence and movement of wildlife on the site based on habitat characteristics and the observation of animals and their sign during reconnaissance surveys. In addition, a regional-level evaluation of wildlife corridors and linkages was recently compiled (South Coast Missing Linkages Project 2004), and that information can also be used in determining the value of the site to wildlife.

Based on the information that has been gathered on the site over the last decade and on the information contained in the available literature, it can be determined that the project site is likely to be utilized by a variety of wildlife species for foraging and movement. This finding has been consistently reported in each of the habitat assessments and focused surveys conducted on the site since 1998. The reasons for this finding are as follows:

1) There are few physical barriers surrounding the site, especially in the northern half of the property.

2) Adjacent properties to the east, north, and west are mostly undeveloped and part of the much larger natural open space of the San Bernardino National Forest (SBNF).

3) The large expanse of undisturbed open space surrounding the site harbors an abundance of wildlife which may, in turn, facilitate a substantial amount of wildlife movement and use of the site.

4) Cable Creek Canyon provides a natural wildlife corridor and also contains a year-round water source for wildlife that is not common in the region. The vegetation associated with this water source also provides cover and food resources for animals traveling between upland areas above the project site to valley areas below the site, and vice versa. This corridor allows animals to travel from higher elevation montane coniferous forest communities, through oak woodland and chaparral habitats, and then to lowland alluvial communities while accessing the additional resources provided by each community.

5) Interviews with local residents and persons familiar with the site have indicated that substantial numbers of animals use the site. Specific large mammal species for which multiple observations have been recorded include black bear, mule deer, and mountain lion (*Felis concolor*).

6) The South Coast Missing Linkages Project (2004) identified the site and the surrounding area as an important component in maintaining wildlife population linkages between the San Bernardino Mountains and the San Gabriel Mountains to the west of the site. Species such as mountain lion, American badger (*Taxidea taxus*), mule deer, and a number of small mammal and bird species were identified as being likely to use the site and the surrounding area for travel between various habitat areas in the greater Cajon Pass area.

Figure 5.3-2 illustrates the generalized locations of wildlife movement corridors on the project site. Canyon bottoms and riparian areas provide the greatest opportunity for wildlife movement since they provide suitable cover, forage resources, and year-round or seasonal water sources. Another area on the project site that appears to be utilized by wildlife is along the eastern boundary of the site. Animals traveling within this area appear to be using it to access the seasonal wetland that is located in the southern portion of the site (see the discussion below on jurisdictional waters and wetlands and also Figure 5.3-3 for the location of this resource).

Wildlife Nursery Sites

In regard to wildlife nursery locations, the site has been confirmed to provide fawning habitat for mule deer. Groups of does and fawns have been observed on the site in substantial quantities (PBS&J 2009e). Based on the time of year that these observations were made, it is reasonable to assume that the fawns were born on the project site. The site is likely used as a nursing area because of the presence of flat terrain, high-quality foraging habitat, high quality cover habitat, and a year-round water source. Based on each of these considerations, it seems reasonable to conclude that the site is a wildlife nursery site for mule deer. Figure 5.3-2 shows the locations of specific areas on the project site that are likely to be used for mule deer nursery sites.

Nesting Birds

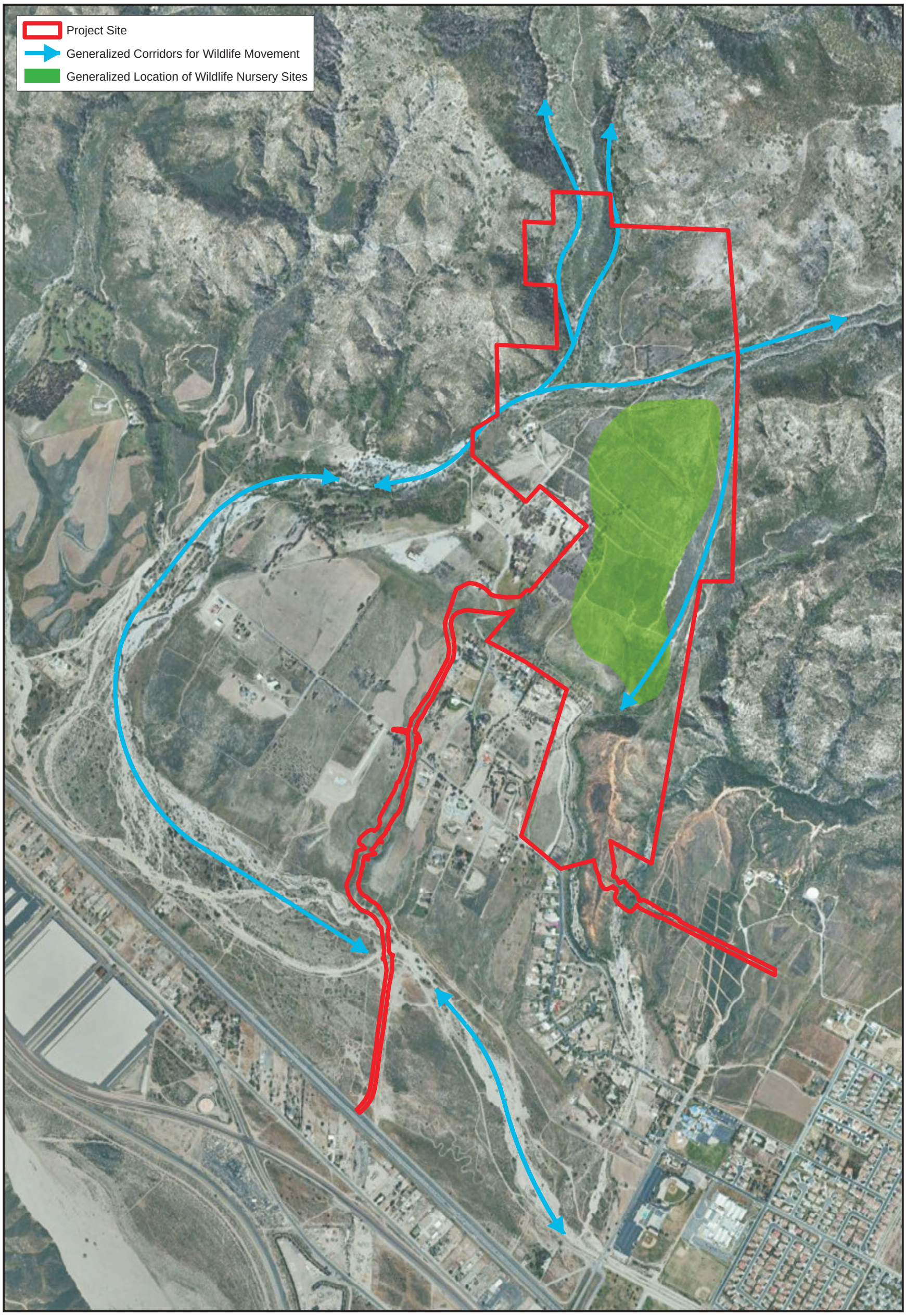
The project site contains a variety of nesting habitats for many avian species. These habitats include trees, shrubs, and other vegetation or landform features in which birds can construct nests and raise young.

Raptor Foraging Habitat

Based on observations recorded in each of the biological resources assessments prepared for the site, there is evidence that the project site provides limited amounts of raptor foraging habitat. The site has been shown to be used by Swainson's hawk and sharp-shinned hawk, for instance, as well as a number of other raptor species, including great-horned owl, turkey vulture, red-tailed hawk, red-shouldered hawk, and American kestrel.

Despite the relatively large number of raptor species observed on the site over the years, it does not appear that the site is frequented for long periods of time by raptor species. The project site lacks expansive grassland habitat and is generally dominated by dense Riversidean sage scrub and chaparral. These habitats do not provide particularly favorable conditions for foraging raptors due to the lack of prey visibility. It can therefore be concluded that the site provides only marginally suitable foraging habitat for raptors and that these species would be more likely to rely on other areas for the majority of their foraging activities.

Wildlife Movement Corridors and Mule Deer Nursery Site

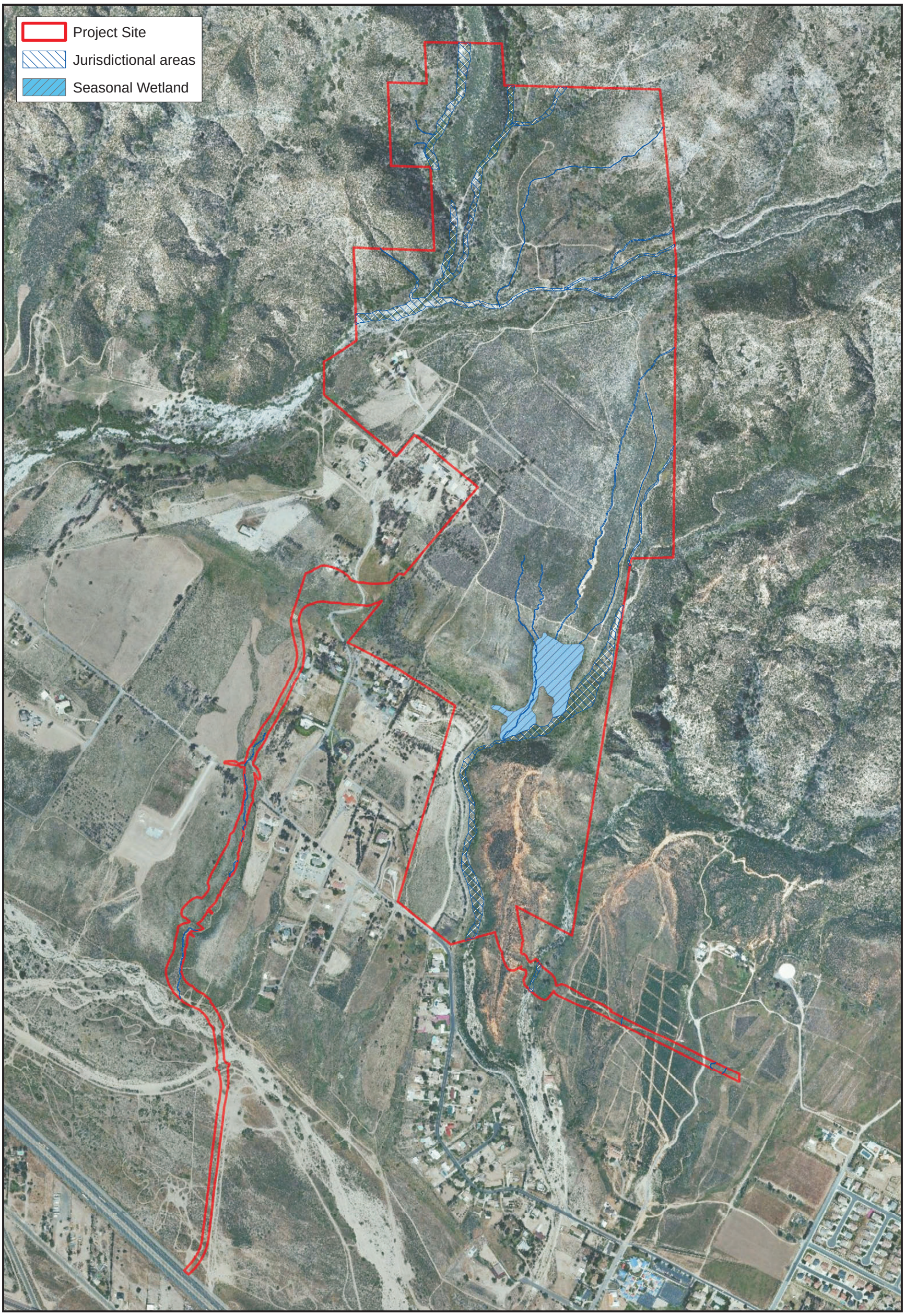


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Scale (Feet)

Source: PBS&J, ESRI Imaging 2009

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Jurisdictional Wetland Boundaries



Source: PBS&J, ESRI Imaging 2009

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Critical Habitat

Portions of the proposed secondary access road alignment are within a designated critical habitat area for SBKR, per a January 8, 2011, judicial ruling, which reverted designated SBKR critical habitat areas from the USFWS's revised 2008 designation back to the substantially larger areas originally designated by USFWS in 2002 (see Figure 5.3-4). Portions of the site were also formerly within designated critical habitat for CAGN, but the USFWS revised the designated critical habitat for CAGN in 2007 and the site is no longer within critical habitat for the species.

Loss or adverse modifications of critical habitat must be evaluated by federal agencies prior to authorizing or conducting a major federal action, even if the listed species is determined to be absent from the area in question. Since the project would require a Section 404 permit from the US Army Corps of Engineers (Corps), a federal nexus is established, and the Corps would be required to consult with the USFWS prior to the issuance of the permit.

Jurisdictional Waters and Wetlands

The jurisdictional delineations prepared for the project site (PBS&J 2009 and 2011) determined that approximately 15.8 acres within the project site could be under the jurisdiction of Corps and the Regional Water Quality Control Board (RWQCB). The delineations also determined that the project site supports approximately 27.1 acres of streambed and banks, and associated riparian vegetation that could fall under the regulatory authority of the CDFG. Figure 5.3-3 shows the general location of these jurisdictional features. Specific details of each tributary, along with detailed maps and illustrations, are contained in Appendix D7 and D8.

A seasonal wetland is present in the southern third of the site near the San Andreas Fault (see Figure 5.3-3). This feature is likely the result of groundwater upwelling along the fault. This feature is approximately 6.2 acres in size and is included in the overall jurisdictional acreage quantities (27.1 acres).

Regulatory Setting

The project area is subject to laws, regulations, and other directives that are applicable to biological resources. This section provides an overview of each of these directives.

Federal and State Regulations

Federal Endangered Species Act

The USFWS is responsible for the administration of the FESA. The FESA provides a process for listing species as either threatened or endangered, and methods for protecting listed species. The FESA defines "endangered" as any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A "threatened" species is a species that is likely to become endangered. A "proposed" species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

The FESA prohibits take of threatened or endangered species, which means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a project area generally places severe constraints on development, particularly if development would result in take of the species or its habitat.

Under the regulations of the FESA, the USFWS may authorize take when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat

The USFWS is required under the FESA to designate specific areas as protected critical habitat zones. Critical habitats are required to contain all areas essential to the conservation of the target species. Such lands may be private or public. Federal agencies are prohibited from authorizing, funding, or carrying out actions that destroy or adversely modify critical habitat.

Section 7 and 10 Compliance

There are two sections of the FESA, Sections 7 and 10, that authorize incidental take. Section 7 regulates take associated with federal projects or projects that require a federal permit. Section 10 regulates take on nonfederal lands or for projects without a federal nexus.

Federal agencies must undertake programs for the conservation of endangered and threatened species and their critical habitat, and are prohibited from authorizing, funding, or carrying out any action that will jeopardize a listed species. As defined in the FESA, "individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding."

Even though the project is being reviewed by a nonfederal entity (the City of San Bernardino), the project is subject to Section 7 of the FESA due to the presence of critical habitat on a portion of the project site, and also because the project would require the issuance of a federal Section 404 permit from the Corps. Therefore, a federal nexus would be established, and the rules of Section 7 of the FESA would apply to the project. The Section 7 process is usually completed via consultation with the USFWS. During the consultation process, the USFWS may dictate conditions or mitigation that must be implemented to avoid or mitigate take of a listed species.

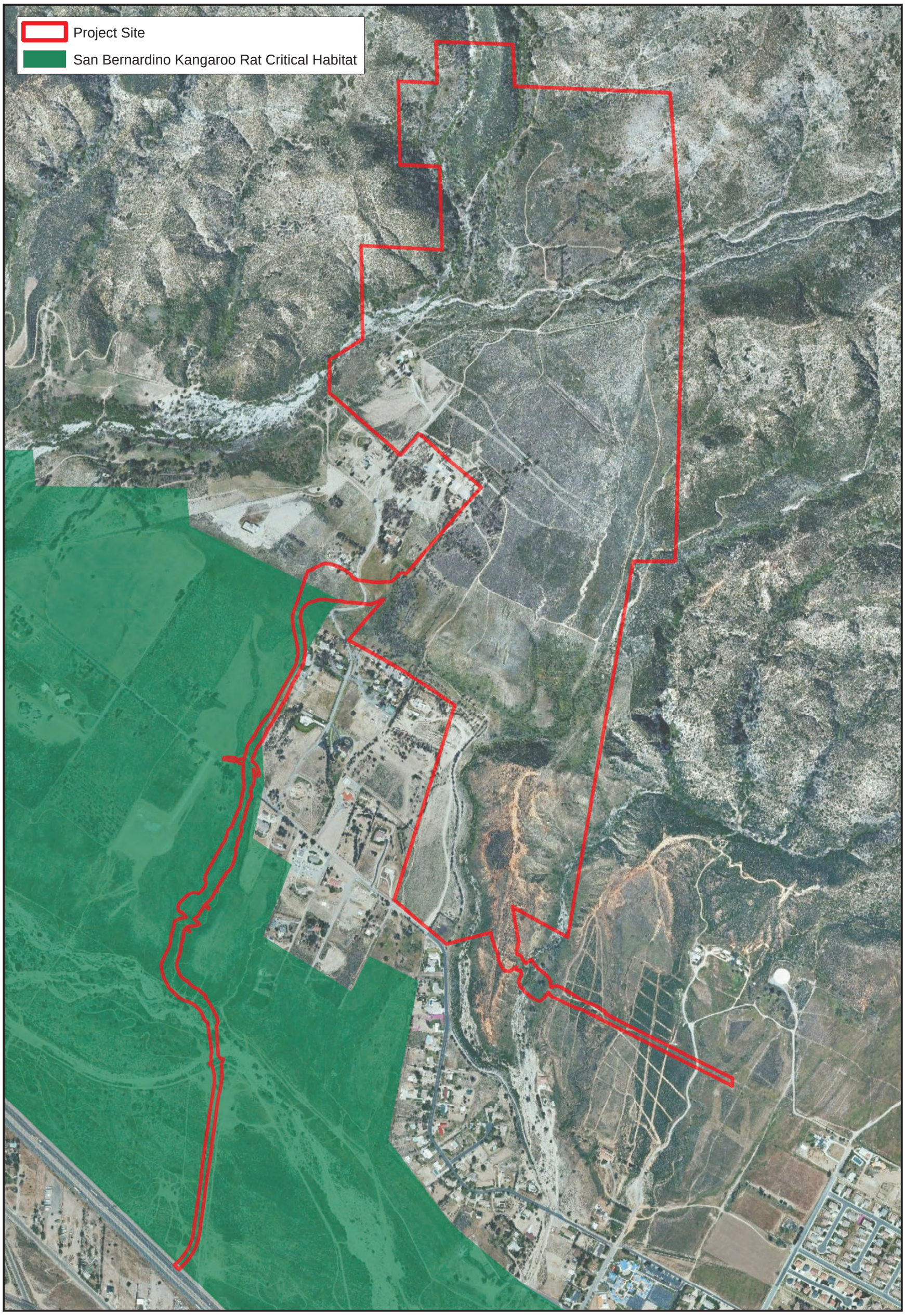
California Endangered Species Act

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy; a threatened species as one present in such small numbers throughout its range that it is considered likely to become an endangered species in the near future in the absence of special protection or management; and a rare species as one present in such small numbers throughout its range that it may become endangered if its present environment worsens. The designation of rare species applies only to California native plants. State threatened and endangered species include both plants and wildlife, with the exception of invertebrates, and are legally protected against take.

California Species of Special Concern

SSC status applies to animals not listed under the FESA or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. SSC species share one or more of the following criteria:

San Bernardino Kangaroo Rat Critical Habitat



Source: PBS&J, ESRI Imaging 2009

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1) Occur in small, isolated populations or in fragmented habitat and are threatened by further isolation and population reduction.

2) Show marked population declines. Population estimates are unavailable for the vast majority of taxa. Species that show a marked population decline, yet are still abundant, do not meet the Special Concern definition, whereas marked population decline in uncommon or rare species is an inclusion criterion.

3) Depend on a habitat that has shown substantial historical or recent declines in size. This criterion infers the population viability of a species based on trends in the habitats upon which it specializes. Coastal wetlands, alluvial fan sage scrub and coastal sage scrub in the southern coastal basins, and arid scrub in the San Joaquin Valley are examples of California habitats that have seen dramatic reductions in size in recent history. Species that specialize in these habitats generally meet the criteria for Threatened or Endangered status or Special Concern status.

4) Occur only in or adjacent to an area where habitat is being converted to land uses incompatible with the animal's survival.

5) Have few California records or which historically occurred here but for which there are no recent records.

6) Occur largely on public lands, but where current management practices are inconsistent with the animal's persistence.

The SSC designation is intended to result in special consideration for these species by the CDFG, land managers, and others, and is intended to focus attention on the species to help avert the need for listing under federal and state endangered species laws and the necessity of recovery efforts. This designation does not provide specific legal protection, but signifies that these species are recognized as vulnerable by CDFG.

California Native Plant Society

CNPS is a statewide resource conservation organization that has developed an inventory of California's special-status plant species. This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants. CNPS cooperates under a memorandum of understanding with CDFG to identify which plants may be rare or threatened, to evaluate threats to them, to share occurrence data, and to plan protective measures. In this role, CNPS evaluates plant taxa according to abundance, distribution, and threats, and it ranks rare species on a series of lists. The joint CNPS Rare Plant Program and CDFG's CNDDB Plant Status Review Process for CNPS List and CDFG Special Plants List status is a review process that evaluates existing literature, reviews herbarium collections, and communicates with experts before making a recommendation for listing. This rare plant inventory consists of the following lists:

- List 1A plant species are presumed to be extinct in California because they have not been seen in the wild for many years.

- List 1B plants are considered rare, threatened, or endangered throughout their range.

- List 2 plant species are considered rare, threatened, or endangered in California, but more common in other states.

- Plant species on lists 1A, 1B, and 2 meet CDFG criteria for endangered, threatened, or rare listing. Impacts to these plants are usually considered to be significant under CEQA.

- Plant species for which CNPS requires additional information in order to properly evaluate their status are included on List 3.

- List 4 plant species are those of limited distribution in California but whose susceptibility to threat is considered low at the current time.

The CNPS Inventory has been a broadly recognized and accepted source of science-based information on the rarity, endangerment, and distribution of California special-status plants since its first edition in 1974. By CNPS's standards, the plants on CNPS Lists 1A, 1B and 2 meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for state listing. Those plants appearing on CNPS List 1B or 2 meet CEQA Section 15380 criteria relating to rare, endangered, or threatened species, and adverse effects to these species are generally considered "significant" except where substantial new data may show otherwise.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects all common wild migratory birds found in the United States except the house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkey. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

The CDFG administers the California Fish and Game (CFG) Code. Particular sections of the CFG Code are applicable to natural resource management. For example, Section 3503 states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird that is protected under the MBTA. The code further protects all birds of prey such as hawks and owls and their eggs and nests from any form of take.

Based on the requirements of the MBTA and the CFG Code, it is unlawful to disturb the nests of birds during nesting season. Nesting season is typically considered to begin on February 15 and run through August 31, and disturbance to nesting birds may not occur during that time. Avoidance of nesting birds is the only way to eliminate impacts during nesting season. Obviously, the best way to avoid impacts to nesting birds is to perform any potential nest-disturbing activities, such as construction, outside of the nesting season (i.e., September 1 through February 15). If construction must occur during the nesting season, then preconstruction nesting bird surveys must be conducted no more than 30 days prior to initiation of construction. If nests are discovered, they must be avoided by an appropriate buffer, as determined by a qualified wildlife biologist. The temporary "no construction" area would need to be maintained until the nest has completed its cycle, as determined by a qualified wildlife biologist. Once the nesting cycle has been completed, construction in the area may resume.

Clean Water Act, Section 404

The Corps administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. To this end, the Corps has established a series of nationwide permits that authorize certain activities in waters of the United States if a proposed activity can demonstrate compliance with standard conditions. Normally, the Corps requires an individual permit for an activity that would affect an area equal to or in excess of 0.5 acre of waters of the United States. Projects that result in impacts to less than 0.5 acre can generally be conducted pursuant to one of the nationwide permits,

if consistent with the standard permit conditions. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Waters of the United States

Waters of the United States, as defined in the Code of Federal Regulations (CFR), include all waters or tributaries to waters such as lakes, rivers, intermittent and perennial streams, mudflats, sand-flats, natural ponds, wetlands, wet meadows, and other aquatic habitats. Frequently, waters of the United States with at least intermittently flowing water or tidal influences are demarcated by an ordinary high water mark (OHWM), the line on the shore established by the fluctuations of water and indicated by physical characteristics such as: a clear, natural line impressed on the bank shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. In the southern California region, where streams are often intermittent, the OHWM is typically indicated by the presence of an incised streambed with defined bank shelving.

In 2001, the Corps South Pacific Division issued Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest. The purpose of this document was to provide background information concerning physical characteristics of dry land drainage systems. These guidelines were reviewed and used to identify jurisdictional drainage features on the Spring Trails project site.

> In the 2006 U.S. Supreme Court case *Rapanos v. United States*, the Court clarified that the term "waters of the United States" "includes only those relatively permanent, standing or continuously flowing bodies of water 'forming geographic features' that are described in ordinary parlance as 'streams[,] ... oceans, rivers, [and] lakes.'"
>
> All waters with a "significant nexus" to "navigable waters" are covered under the CWA; however, the term "significant nexus" remains open to judicial interpretation and considerable controversy. Some regulations include water features such as intermittent streams, playa lakes, prairie potholes, sloughs, and wetlands as waters of the United States. Others do not; the matter is still unresolved.

The plurality opinion in *Rapanos* stated that the CWA confers federal jurisdiction over nonnavigable waters only if they exhibit a relatively permanent flow, such as a river, lake, or stream. In addition, a wetland is jurisdictional if there exists a continuous surface water connection between it and a relatively permanent water body, such that it is difficult to determine where the water body ends and the wetland begins.

Wetlands

According to the Corps Wetlands Delineation Manual, three criteria must be satisfied to classify an area as a jurisdictional wetland:

1) A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation)

2) Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils)

3) Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology)

Wetland vegetation is characterized by vegetation where more than 50 percent of the composition of dominant plant species is obligate wetland, facultative wetland, and/or facultative species that occur in

wetlands. A wetland must show connectivity to a stream course in order for such a feature to be considered jurisdictional.

Other Activities Regulated by the US Army Corps of Engineers

The Corps regulates the discharge of dredged or fill material, including but not limited to grading, placing of rip-rap for erosion control, pouring concrete, laying sod, and stockpiling excavated material. Activities that generally do not involve a regulated discharge, if performed specifically in a manner to avoid discharges, include driving pilings, drainage channel maintenance, temporary mining and farm/forest roads, and excavating without stockpiling.

Clean Water Act, Sections 401 and 402

Per Section 401 of the CWA, "any applicant for a federal permit for activities that involve a discharge to waters of the state, shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act." Therefore, before the Corps will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the RWQCB.

Porter-Cologne Water Quality Act

The RWQCB regulates actions that would involve discharging waste or proposing to discharge waste within any region that could affect the water of the state, pursuant to provisions of the Porter-Cologne Water Quality Act. Waters of the state are any surface water or groundwater, including saline waters, within the boundaries of the state.

Activities Regulated by the Regional Water Quality Control Board

Under Section 401 of the CWA, the RWQCB regulates all activities that are regulated by the Corps. Additionally, under the Porter-Cologne Water Quality Act, the RWQCB regulates all activities, including dredging, filling, or discharge of materials into waters of the state that are not regulated by the Corps due to a lack of connectivity with a navigable water body and/or lack of an OHWM.

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list best management practices (BMPs) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303 (d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

California Fish and Game Code, Section 1600

The CFG Code mandates that it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity. CDFG jurisdiction includes ephemeral, intermittent, and perennial watercourses, including dry washes, characterized by the presence of hydrophytic vegetation, the location of definable bed and banks, and the presence of existing fish or wildlife resources.

Furthermore, CDFG jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function as part of the riparian system. A number of court cases have further extended CDFG jurisdiction to include watercourses that seemingly disappear, but reemerge elsewhere. Under the CDFG definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdiction. However, CDFG does not regulate isolated wetlands, that is, those that are not associated with a river, stream, or lake.

Activities Regulated by the California Department of Fish and Game

The CDFG regulates activities that involve diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources.

Existing Conservation Plans and Areas

San Bernardino Kangaroo Rat Critical Habitat

Portions of the proposed secondary access road alignment are within designated critical habitat areas for SBKR. Portions of the site were also formerly within designated critical habitat for CAGN, but the USFWS revised the designated critical habitat for CAGN in 2007 and the site is no longer within critical habitat for that species.

Loss or adverse modifications of critical habitat must be evaluated by federal agencies prior to authorizing or conducting a major federal action, even if the area in question is determined to be absent of the listed species. Since the project would require a Section 404 permit from the Corps, a federal nexus is established, and the Corps would be required to consult with the USFWS prior to the issuance of the permit.

San Bernardino National Forest Resource Management Plan

SBNF public lands, which are managed by the US Forest Service (USFS), are found immediately adjacent to the project site. In addition, the northern portion of the project site is a privately owned inholding within the SBNF boundary. However, only federally owned/nonprivate lands within the forest boundary are subject to the SBNF Land Management Plan (LMP) (USFS 2006b).

While the project site is not subject to the forest's LMP, the USFS may have an interest in activities that occur adjacent to SBNF land. The USFS refers to developed areas around its lands as the Wildland-Urban Interface (WUI), and activities within WUI areas can have both direct and indirect impacts on USFS lands, especially in regard to the increased danger of human-caused fires, the introduction of invasive species, unmanaged recreation, and trespass. Since the Spring Trails project is within the forest's WUI, the USFS may have an interest in the project even though the project site is not under its jurisdiction.

South Coast Missing Linkages Project

The South Coast Missing Linkages Project (SCMLP) is an inventory of critical linkages and wildlife corridors in southern California that are believed to be necessary for the continued functioning of area ecosystems.

The project is a joint effort undertaken by a number of federal land management and regulatory agencies, state resource management agencies, and national and local conservation organizations. Notable participants include the SBNF, the National Park Service, the California State Parks Department, the Wildlands Conservancy, and the Nature Conservancy. The project produced a report in 2004 entitled *A Linkage Design for the San Gabriel-San Bernardino Connection*. The report identified known wildlife corridors in the Cajon Pass area, including the proposed project area, and recommended actions to conserve or enhance wildlife movement capabilities in the area.

The SCMLP does not have the force of law; rather, it is considered a baseline document that provides guidance to land managers and lead agencies in meeting regional conservation goals relating to wildlife movement and species viability.

City of San Bernardino General Plan

The City of San Bernardino General Plan Natural Resources and Conservation Element (2005) adopted a number of goals, policies, and implementation measures regarding biological resources. The General Plan also designated certain areas within the City and its sphere of influence as Biological Resource Management Areas (BRMAs). According to Figure NRC-2 of the General Plan, the project site is located within a designated BRMA and is thus subject to a number of requirements, as specified under Policies 12.1.3 and 12.1.4. Relevant goals and policies are listed below.

Goal 12.1 Conserve and enhance San Bernardino's biological resources.

Policy 12.1.2 Site and develop land uses in a manner that is sensitive to the unique characteristics of and that minimizes the impacts upon sensitive biological resources.

Policy 12.1.3 Require that all proposed land uses in the "Biological Resource Management Area" (BRMA), Figure NRC-2, be subject to review by the Environmental Review Committee (ERC).

Policy 12.1.4 Require that development in the BRMA:

a) Submit a report prepared by a qualified professional (s) that addresses the proposed project's impact on sensitive species and habitat, especially those that are identified in State and Federal conservation programs;

b) Identify mitigation measures necessary to eliminate significant adverse impacts to sensitive biological resources;

c) Define a program for monitoring, evaluating the effectiveness of, and ensuring the adequacy of specified mitigation measures; and

d) Discuss restoration of significant habitats.

Goal 12.2 Protect riparian corridors to provide habitat for fish and wildlife

Policy 12.2.1 Prohibit development and grading within 50 feet of riparian corridors, as identified by a qualified biologist, unless no feasible alternative exists.

Policy 12.2.2 Generally permit the following uses within riparian corridors:

a) Education and research, excluding buildings and other structures;

b) Passive (non-mechanized) recreation;

c) Trails and scenic overlooks on public land;

d) Fish and wildlife management activities;

e) Necessary water supply projects;

f) Resource consumptive uses as provided for in the CFG Code and Title 14 of the California Administrative Code;

g) Flood control projects where no other methods are available to protect the public safety;

h) Bridges and pipelines when supports are not in significant conflict with corridor resources.

Policy 12.2.3 Pursue voluntary open space or conservation easements to protect sensitive species or their habitats.

Policy 12.2.4 Development adjacent to riparian corridors shall:

a) Minimize removal of vegetation;

b) Minimize erosion, sedimentation, and runoff by appropriate protection or vegetation and landscape;

c) Provide for sufficient passage of native and anadromous fish as specified by the CDFG;

d) Minimize wastewater discharges and entrapment;

e) Prevent groundwater depletion or substantial interference with surface flows and provide for natural vegetation buffers.

Policy 12.2.5 Permit modifications of the boundaries of the designated riparian corridors based on field research and aerial interpretation data as part of biological studies.

Goal 12.3 Establish open space corridors between and to protect wildlands.

Policy 12.3.1 Identify areas and formulate recommendations for the acquisition of property, including funding, to establish a permanent corridor contiguous to the National Forest via Cable Creek and/or Devil Canyon. The City shall consult with various federal, state and local agencies and City departments prior to the adoption of any open space corridor plan.

Policy 12.3.3 Establish the following habitat types as high-priority for acquisition as funds are available:

a) Habitat of endangered species;

b) Alluvial scrub vegetation;

c) Riparian vegetation dominated by willow, alder, sycamore, or native oaks; and

d) Native walnut woodlands.

City of San Bernardino Tree Ordinance

The City of San Bernardino has adopted an ordinance (City of San Bernardino Municipal Code Section 19.28.090) that is designed to conserve important tree resources. The text of the ordinance is as follows:

> Removal of healthy, shade providing, aesthetically valuable trees shall be discouraged. In the event that more than five trees are to be cut down, uprooted, destroyed or removed within a 36 month period, a permit shall first be issued by the Department of Parks, Recreation and Community Services.
>
> Prior to any permit issued for tree removal, all existing trees on-site shall be surveyed by the Department of Parks, Recreation and Community Services at the developer's expense. Unless there is a pre-approved tree replacement plan, each tree that is removed in a new subdivision and is considered to be of significant value by the Department shall be replaced with a 36-inch box specimen tree in the subdivision in addition to any other required landscaping. Such a plan does not necessarily require a tree-for-tree replacement provision. Commercial tree farms, City Government projects, and individual, single-family residential lots less than one acre shall be exempt from this provision.

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project may have a significant effect on the environment if the project would:

B-1 Have a substantial 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 U.S. Fish and Wildlife Service.

B-2 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 U.S. Fish and Wildlife Service.

B-3 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.

B-4 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.

B-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

B-6 Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.3.3 Environmental Impacts

The analysis in this section considers the impacts that could result from project implementation. For purposes of this discussion, the area of potential impact is defined as those areas that would be directly impacted within the project footprint, which includes all graded areas, access roads, and the proposed fuel modification zones. See Figure 5.1-1, *Development Footprint*, in Section 5.1, *Aesthetics*, for an illustration of the project's development footprint.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore, the annexation would not contribute to impacts related to biological resources.

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, in Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The project footprint is the same for both the preferred development plan and the alternative development plan. Both scenarios are analyzed in this section to assess their impacts to biological resources.

IMPACT 5.3-1: DEVELOPMENT OF THE PROPOSED PROJECT WOULD INVOLVE THE LOSS OR MODIFICATION OF APPROXIMATELY 265.2 ACRES OF NATURAL HABITAT AND THE WILDLIFE SPECIES THEREON. THESE ACTIVITIES COULD POTENTIALLY IMPACT SPECIAL STATUS PLANT AND ANIMAL SPECIES. IMPACTS COULD OCCUR TO CRITICAL HABITAT DESIGNATED BY THE US FISH AND WILDLIFE SERVICE. INDIRECT IMPACTS TO SENSITIVE PLANT AND ANIMAL HABITATS COULD ALSO OCCUR. [THRESHOLD B-1]

Impact Analysis: Approximately 100 to 300 Plummer's mariposa lily plants would be impacted by project development. Approximately 350 to 600 individual California black walnut trees of varying ages would be impacted by project development. Both are listed as sensitive by the CNPS. Impacts to USFWS-designated critical habitat for SBKR would also occur, as would impacts to Los Angeles pocket mouse. Potential impacts to LBV and SWF are also present.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Special Status Plant Species

No plant species listed as either threatened or endangered under the FESA or the CESA is known to occur on the project site. This finding is based on numerous focused surveys and habitat assessments conducted on the site since 1998. Since no federal- or state-listed species occurs on the site, there would be no impact to these species from project development.

Two plant species listed as sensitive by the CNPS have been documented to occur on the project site. Plummer's mariposa lily has been previously observed within unconfirmed areas of the project site during at

least two surveys. There is suitable habitat on the site and it can be assumed that the species is present. It is not known, however, if the recorded occurrences were in an area of the site that is proposed for development.

Pursuant to CEQA thresholds of significance, potential impacts to this non-listed CNPS List 1B.2 species is not anticipated to be significant due to the relative abundance of this species on a regional scale. According to the CNPS listing guidelines, this species is known from 21 to 80 occurrences throughout its range, interpreted as anywhere between 3,000 to 10,000 individuals, or 10,000 to 50,000 occupied acres. The proposed project would result in the removal of an estimated 100 to 300 individuals. This represents a small portion of the total known population and any impacts would not jeopardize the existence of this species or elevate its sensitivity or listing status under the CNPS, CNDDB, global and state heritage rankings, the FESA, or CESA.

Despite the fact that Plummer's mariposa lily is not specifically protected under state law, mitigation imposed during the Section 1602 permitting process would likely be required at some level for this species. For this reason, mitigation is recommended to identify specimens that are located within the project impact area. These specimens should be avoided or relocated as feasible. Adherence to these requirements would lessen the project's impact in this regard to less than significant levels.

California black walnut is also present on the site. Pursuant to the CEQA thresholds of significance, potential impacts to this nonlisted CNPS List 4.2 species are not anticipated to be significant due to the relative abundance of this species on a regional scale. According to the CNPS listing guidelines, this species is known from at least 21 to 80 occurrences throughout its range, which is interpreted as anywhere between 3,000 to 10,000 individuals that are known, or 10,000 to 50,000 occupied acres. The proposed project would result in the removal of approximately 350 to 600 individuals of varying ages. This represents a small portion of the total known population. These impacts would not jeopardize the existence of this species or elevate its sensitivity or status under the CNPS, CNDDB global and state heritage rankings, the FESA, or CESA.

While California black walnut is not specifically protected under state law, mitigation initiated during the Section 1602 permitting process would likely be required at some level for this species. For this reason, it is recommended that mitigation be required to salvage and relocate healthy specimens, and/or to plant new specimens within areas to be preserved onsite. Further discussion relating to tree resources is provided under the analysis for Impact 5.3-5. Applicable mitigation for tree resources is provided as mitigation measure 3-15. Adherence to these requirements would lessen the project's impact in this regard to less than significant levels.

Special Status Wildlife Species

Mammals

Numerous small mammal trapping sessions have been conducted on the project site over the last 11 years, but none of the survey efforts have revealed the presence of any federal- or state-listed small mammal species. Even though portions of the site are within designated critical habitat for SBKR, it would appear that the species is absent from the site. This is likely due to the separation of the site from existing SBKR populations by the I-215 freeway, other roadways, a railroad, and residential and commercial development. The RAFSS habitat on the site is suitable for SBKR, but apparently, there is no effective linkage with adjacent populations. Regardless, since portions of the site are within designated critical habitat for the species, consultation with the USFWS under Section 7 of FESA would be required. Mitigation requirements derived from this consultation would serve to lessen the project's potential impacts to SBKR.

In anticipation of those agency requirements, mitigation is recommended in this EIR to reduce the project's impacts in this regard to less than significant levels (see Section 5.3.7). The mitigation requires the adoption of BMPs to avoid direct and indirect impacts to remaining habitat areas, and also imposes specific design requirements to lessen additional impacts to offsite areas and to provide for the continued movement of animals through the area. The mitigation also requires the purchase of offsite mitigation lands and/or the payment of in-lieu fees. Finally, the mitigation also requires that the applicant demonstrate that suitable mitigation lands have been identified and are available for acquisition.

Mitigation ratios for offsite habitat purchases are typically based on a number of factors, including the quality of the habitat to be replaced and whether or not the impacted area is actually occupied by the species in question. For areas of high quality habitat that is determined to be occupied by a listed species, replacement ratios are typically established at 3:1 (three acres replaced for every one acre impacted). Unoccupied critical habitat or areas of lesser habitat quality are typically mitigated at a lower ratio. In the case of this project, the onsite RAFSS habitat that would support SBKR is of good quality but has been determined through repeated survey efforts to not be occupied by SBKR. Any mitigation required should consider each of these factors and any replacement ratios or onsite mitigation requirements adjusted accordingly.

For the reasons cited above, the prescribed mitigation for the loss of unoccupied SBKR critical habitat for this project is set at a ratio 1:1 (one acre replaced for every one acre impacted). The mitigation also requires that the applicant demonstrate that suitable mitigation lands have been identified and are available for acquisition, either through direct purchase or the payment of fees. The project applicant has identified several hundred acres of potential mitigation lands containing suitable RAFSS habitat along the alluvial fans of the San Bernardino and San Gabriel Mountains. These lands are available for purchase and dedication to an appropriate conservation management organization. This dedication and management would ensure the long-term conservation status of this sensitive habitat type in the San Bernardino Valley. It can therefore be concluded that the prescribed mitigation is feasible and would thus mitigate the project's impacts in this regard to less than significant levels.



Two SSCs are known to occur on the project site. Both San Diego pocket mouse and Los Angeles pocket mouse have been captured during each of the survey efforts on the site. Potential impacts to San Diego pocket mouse are not typically considered significant under CEQA because this species is widespread and abundant on a local and regional level. Impacts to Los Angeles pocket mouse, however, could be considered potentially significant since the preferred habitat of the species is narrow and the species is not known to be locally or regionally abundant. The status of SSC, however, does not afford any specific legal protections and therefore the impact can be considered less than significant. Nevertheless, the potential adverse impact to Los Angeles pocket mouse could be of concern to regulatory agencies such as CDFG. It is likely that CDFG would impose some level of mitigation during the Section 1602 permitting process to account for this impact. Since Los Angeles pocket mouse generally occurs in the same area as the SBKR's designated critical habitat, mitigation required by the USFWS during the Section 7 process and as discussed in the paragraphs above would serve as mitigation for Los Angeles pocket mouse as well. For that reason, mitigation specific to Los Angeles pocket mouse is not recommended. Rather, it is recommended that the same mitigation for SBKR be implemented for impacts to Los Angeles pocket mouse. Implementation of these measures would lessen the project's impact to both SBKR and Los Angeles pocket mouse to less than significant levels.

Birds

Based on repeated negative findings for CAGN during numerous survey efforts, as well as the site's recent exclusion from designated critical habitat, it is reasonable to assume that the species does not occur upon the project site.

The riparian areas within Cable Creek provide suitable habitat for the SWF, though focused surveys conducted in 2007 returned negative findings. However, the same survey effort did detect the presence of LBV in an offsite riparian area of Cable Creek west of the site. It is therefore possible that the species could be present farther east of this location within Cable Creek. Direct development of the riparian areas of Cable Creek is not proposed as part of the project's development. No homes or other structures would be located within the riparian areas that would be most likely to contain LBV and SWF. However, the hiking/equestrian trail that is planned for this area could impact these species if they are present and if the trail is not designed thoughtfully with the aim of avoiding impacts to these species. For that reason, mitigation is recommended to assure that the trail's design, construction, and use would not impact the creek bottom in a manner that could create a significant impact to these species. Implementation of this measure would reduce the level of this potentially significant impact to less than significant levels. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR.

Reptiles and Amphibians

No federal- or state-listed reptile species has ever been observed on the project site, and none is expected to occur. In regard to amphibians, habitat assessments conducted over the last 11 years have concluded that marginally suitable habitat for arroyo southwestern toad and mountain yellow-legged frog is present along Cable Creek. Neither of these species, however, has been detected during both general habitat assessment surveys or focused surveys conducted in the area. Based on these findings, it is likely that neither species is present on the project site. Regardless, and as noted above in the discussion on special status bird species, direct development of the riparian stretches of Cable Creek is not proposed as part of the project's development. The mitigation required for the proposed hiking/equestrian trail discussed in the above section would also lessen the project's potential impacts in this regard to less than significant levels. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR.

Indirect Impacts to Special Status Species

Human-Wildlife Conflicts and Domestic Animal Impacts

Since the project site would be surrounded on three sides by existing wild areas that are known to provide suitable habitat for a number of animal species, it can be assumed that wild animals would continue to be present in these adjacent wild areas following project development. These animals would come into contact with the proposed development at the wildland-urban interface (WUI) and in surrounding areas. They can be drawn into developed areas by attractants such as trash containers, water, or other resources. In some instances, human residents can deliberately attract wild animals by feeding or otherwise encouraging animals to come into the neighborhood. Predatory species like black bear, mountain lions, bobcats, and coyotes can become dangerous if they become habituated to humans. They can also prey on domestic animals. When wild animals become a nuisance or potentially dangerous, CDFG is responsible for responding to these conflicts between wild animals and humans in the WUI, creating additional expense and staffing requirements for the agency.

The introduction of domestic animals would also potentially impact sensitive wildlife species in the area, as well as more common wildlife species. Domestic cats, for instance, are particularly adept at preying on wild animals such as birds, small mammals, and reptiles. Domestic cats tend to be several times as abundant in WUI areas as all other mid-sized wild predators combined, including bobcats and foxes. Cats are especially hard on bird populations. Due to a combination of their opportunistic predatory behavior and their occurrence in numbers that are substantially higher than native predators, cats can eliminate bird populations from otherwise suitable habitat. In some contexts, cat predation may supersede habitat loss as a primary threat to birds' survival. Other domestic animals, such as unrestrained dogs, can harass wildlife and

can thus deny wild animals from using otherwise suitable habitat. Without implementation of mitigation measures, these impacts can be potentially significant.

IMPACT 5.3-2: DEVELOPMENT OF THE PROPOSED PROJECT WOULD RESULT IN IMPACTS TO SIX RIPARIAN PLANT COMMUNITIES TOTALING 26.4 ACRES. ALSO, 168.4 ACRES OF RIVERSIDEAN SAGE SCRUB, A SENSITIVE NON-RIPARIAN PLANT COMMUNITY, WOULD BE IMPACTED. PORTIONS OF THE SITE WITHIN USFWS-DESIGNATED CRITICAL HABITAT FOR SAN BERNARDINO KANGAROO RAT WOULD BE IMPACTED. [THRESHOLD B-2]

Impact Analysis: The proposed project would result in impacts to Riversidean Sage Scrub (RSS) and six riparian plant communities. The project could also have indirect impacts on surrounding undeveloped lands. Portions of the site are located within USFWS-designated critical habitat for the San Bernardino kangaroo rat (discussed above under Impact 5.3-1).

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Special Status Plant Communities

The seven riparian plant communities found on the project site are considered sensitive plant communities by CDFG, USFWS, and CNPS. Six of these communities would be impacted by the proposed project. In addition, the RSS found on the site is considered a sensitive plant community even though it is not a riparian community. Table 5.3-5 lists each of these communities and how many acres of each community would be impacted by the proposed project.

Table 5.3-5
Sensitive Plant Communities on the Spring Trails Project Site

Plant Community	*Area Impacted by Project Development (acres)*
California Walnut Woodland (CWW)	1.0
Riversidean Alluvial Fan Sage Scrub (RAFSS)	4.4
Riversidean Sage Scrub (RSS)	168.4
Riversidean Sage Scrub/California Walnut Woodland (RSS/CWW)	12.0
Southern Sycamore-Alder Riparian Woodland (SSARW)	0.0 (none within project footprint)
Southern Willow Scrub (SWS)	1.0
Southern Willow Scrub/California Walnut Woodland (SWS/CWW)	6.0
Sycamore Alluvial Woodland (SAW)	2.0

Riversidean Sage Scrub

The proposed project would remove nearly all of the 168.4 acres of the RSS located on the site. CDFG regards RSS as a sensitive community. Therefore, the loss of 168.4 acres of RSS would be a significant impact.

If the project site contained listed species that were dependent upon RSS for their continued viability, then the RSS on the site could be considered of high value and the mitigation required would therefore be greater.

However, no listed species dependent upon RSS have been detected on the site. This conclusion is based on over 11 years of general habitat assessment work and numerous focused surveys. While a number of California Species of Special Concern (SSC) have been observed within the RSS areas of the site, these species are not afforded specific legal protection as are formally listed species. Further, RSS remains relatively abundant throughout San Bernardino and Riverside Counties, with many thousands of acres still remaining. Any mitigation required should consider each of these factors and any replacement ratios or onsite mitigation requirements adjusted accordingly.

The mitigation provided in Section 5.3.7 of this EIR provides for the purchase of offsite mitigation lands and/or the payment of in lieu fees to appropriately offset the project's impact to RSS. For the reasons cited above, the prescribed mitigation for RSS for this project is set at a ratio 1:3 (one acre replaced for every three acres impacted). The mitigation also requires that the applicant demonstrate that suitable mitigation lands have been identified and are available for acquisition, either through direct purchase or the payment of fees. The project applicant has identified several hundred acres of potential mitigation lands containing suitable RSS habitat along the alluvial fans of the San Bernardino and San Gabriel Mountains. These lands are available for purchase and dedication to an appropriate conservation management organization. This dedication and management would ensure the long-term conservation status of this sensitive habitat type in the San Bernardino Valley. It can therefore be concluded that the prescribed mitigation is feasible and would thus mitigate the project's impacts in this regard to less than significant levels.

Riparian Plant Communities

Seven riparian plant communities are present on the site and six of these would be impacted by project development (see Table 5.3-5). The 25.4 acres of southern sycamore-alder riparian woodland (SSARW) present on the site are located along the upper reaches of Cable Creek and are outside of the project footprint. Therefore, they would not be impacted by the proposed development. Each of the remaining six communities, totaling 26.4 acres, that would be impacted by the project represent valuable habitat and are considered high priority for conservation by CDFG, USFWS, and CNPS. Loss of these communities would represent a significant impact.

Riversidean alluvial fan sage scrub is one of these riparian communities. Besides the direct impacts associated with project development, indirect impacts to offsite areas of RAFSS could also result from downstream impacts to the community from the secondary access road proposed across Cable Creek. The roadway could interrupt the stream flows and the occasional scourings that are required to maintain the long-term viability of RAFSS. If these processes are interrupted, RAFSS typically begins to convert to other community types that do not offer the same habitat characteristics. This is especially relevant since the secondary access road areas are located in USFWS-designated critical habitat for SBKR. SBKR require the fluvial conditions that are present in properly functioning RAFFS habitat, so both RAFSS and SBKR are related in the type of conditions they require for their long-term viability. Therefore, the possible indirect loss of additional RAFSS habitat would represent a further significant impact.

Based on the project's anticipated direct and indirect impacts on Corps, RWQCB, and CDFG jurisdictional areas, the project proponent would be required to acquire a number of wetland permits prior to project implementation. These permits would include a Section 404 permit from the Corps, a Section 401 permit from the RWQCB, and a Section 1602 permit from CDFG. In addition, consultation with the USFWS under Section 7 of the FESA would be required because portions of the project site are within unoccupied critical habitat for SBKR. Each of these agencies would impose mitigation measures to offset the loss of jurisdictional and habitat areas. In anticipation of these agency requirements, mitigation is recommended in this EIR to reduce the project's impacts in this regard to less than significant levels.

The prescribed mitigation is discussed further in Section 5.3.7 of this EIR and includes measures relating to the adoption of BMPs to avoid direct and indirect impacts to remaining riparian areas and project design requirements to lessen impacts to offsite areas. The mitigation also requires the purchase of offsite mitigation lands and/or the payment of in-lieu fees. The mitigation further requires that the applicant demonstrate that suitable mitigation lands have been identified and are available for acquisition, either through direct purchase or the payment of fees.

The project applicant has identified areas of potential mitigation lands containing suitable riparian habitat along the alluvial fans and foothills of the San Bernardino and San Gabriel Mountains. These lands are available for purchase and dedication to an appropriate conservation management organization. This dedication and management would ensure the long-term conservation status of these sensitive habitat types in the San Bernardino Valley. It can therefore be concluded that the prescribed mitigation is feasible and would thus mitigate the project's impacts to riparian habitats to less than significant levels.

Mitigation for impacts to RAFSS habitat has already been discussed in relationship to mitigation for unoccupied critical habitat for SBKR. Since the unoccupied SBKR habitat that would be impacted by the project is composed exclusively of RAFFS, the mitigation prescribed for unoccupied SBKR habitat would also serve to mitigate for impacts to RAFFS. It can therefore be concluded that impacts on the project site associated with RAFFS would be mitigated to less than significant levels.

Indirect Impacts to Sensitive Plant Communities and Habitat

Invasive Plant Impacts

As discussed previously, the project site represents good quality habitat and a diverse mosaic of plant communities and is unusual for its relative lack of invasive plant species. Unlike other areas along the front range of the San Bernardino Mountains, the project site has not converted to large areas of nonnative grassland. Only 12.5 acres of the project site, or about 3 percent, has converted to this community type. The areas immediately surrounding the site, particularly in the SBNF, are also relatively unaffected by type conversion.

The placement of a residential community into an area of native vegetation represents a potential impact to these surrounding natural areas. Nonnative species can be inadvertently introduced into native habitats in a number of ways, including:

1) The use of invasive species within the landscaping palette can provide opportunities for invasive plants to "escape" from the development and become established in areas of native vegetation. Once established, invasive species such as nonnative grasses, vines, and other species are extremely difficult to remove and can add to a loss of native plant and associated wildlife diversity. In addition, the flashy fuels associated with nonnative grasses can also contribute to increased fire danger and fire frequency, thus affecting even larger areas farther from the site.

2) After construction has finished, residents can unknowingly introduce invasive species by using them for landscaping purposes on their properties.

3) Seeds or other invasive plant parts can be inadvertently imported onto the site during construction activities. Areas are particularly susceptible to invasion by nonnative species during ground-disturbing activities, such as grading and site preparation. Seeds can be brought in inadvertently on construction equipment and through other means.

The first of these potential impacts can be avoided or mitigated through the selection of an appropriate plant palette that does not include species identified as invasive or otherwise undesirable. A review of the proposed plant palette for the project (contained in the Fire Protection Plan in Appendix G of this EIR) and a comparison of the palette with a list of recognized invasive species maintained by the Natural Resource Conservation Service (NRCS) determined that the palette contains no federal- or state-listed invasive plants. A further review was conducted comparing the plant palette with the list contained in *Invasive Plants of California Wildlands* (Bossard et al. 2000). That review determined that one species on the palette (*Aptenia cordifolia*) is potentially invasive. However, the palette specifically prohibits the use of *Aptenia cordifolia* in areas adjacent to wildlands. Rather, planned uses for the species are restricted to interior portions of the site. Since the species spreads vegetatively rather than through seed dispersal, use of the species within interior portions of the development would pose minimal risk in regards to establishment within wildland areas. Therefore, impacts in this regard can be considered less than significant.

The second of these potential impacts can be avoided or mitigated through restrictions placed on homeowners regarding the use of known invasive plants. By restricting the use of recognized invasive species by homeowners, the inadvertent introduction of invasive species can be avoided. These restrictions are usually imposed through the use the covenants, codes, and restrictions and are regulated through a homeowner's association. Accordingly, mitigation is recommended to institute and enforce restrictions on the use of invasive plants on home sites within the development. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR.

The third potential impact can be avoided or mitigated by imposing controls on activities during the construction process that could result in the transport of invasive species onto the site on vehicles and construction equipment. These measures can include the thorough washing of vehicles and equipment before they reach the site. Straw bales, erosion control products, and other potential invasive plant nexuses should be certified "weed free." A number of other requirements can also be incorporated. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR. With implementation of these measures, such impacts can be rendered less than significant.

IMPACT 5.3-3: THE PROPOSED PROJECT WOULD IMPACT APPROXIMATELY 10.6 ACRES OF U.S ARMY CORPS OF ENGINEERS AND REGIONAL WATER QUALITY CONTROL BOARD JURISDICTIONAL AREAS, AND 13.3 ACRES OF CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTIONAL AREAS. APPROXIMATELY 6.2 ACRES OF THE IDENTIFIED JURISDICTIONAL AREAS ARE IN A SEASONAL WETLAND. [THRESHOLD B-3]

Impact Analysis: The project would impact areas under the jurisdiction of the Corps, RWQCB, and CDFG. The project proponent would be required to apply for relevant regulatory permits related to such impacts.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Jurisdictional Areas and Riparian Habitats

The jurisdictional delineations prepared for the project site determined that the proposed project would impact approximately 10.6 acres of Corps/RWQCB jurisdictional areas and 13.3 acres of CDFG jurisdictional areas. Approximately 6.2 acres of the identified jurisdictional areas are in a potential seasonal wetland in the southern third of the site near the San Andreas Fault (see Figure 5.3-3). The quantities listed consider all of the identified jurisdictional areas located within the project development footprint and consider all grading and slopes proposed for development.

The project proponent would be required to acquire a number of wetlands permits prior to project implementation. These permits would include a Section 404 permit from the Corps, a Section 401 permit from the RWQCB, and a Section 1602 permit from CDFG. Since the project would impact more than 0.5 acres of Corps jurisdictional areas, the project would be required to obtain a Section 404 Individual Permit rather than apply for clearance under the Nationwide Permit. Consultations with the USFWS under Section 7 of the ESA would also be required, as portions of the project site are within critical habitat for SBKR. Each of these agencies would impose mitigation measures to offset the loss of jurisdictional and habitat areas.

In anticipation of those agency requirements, mitigation is recommended in this EIR to reduce the project's impacts in this regard to less than significant levels. The mitigation requires the adoption of BMPs to avoid direct and indirect impacts to remaining habitat areas, and also imposes specific design requirements to lessen additional impacts to offsite areas and to provide for the continued movement of animals through the area. The mitigation also requires the purchase of offsite mitigation lands and/or the payment of in-lieu fees. Finally, the mitigation also requires that the applicant demonstrate that suitable mitigation lands have been identified and are available for acquisition.

The project applicant has identified areas of potential riparian mitigation lands containing suitable riparian habitat along the alluvial fans and foothills of the San Bernardino and San Gabriel Mountains. These lands are available for purchase and dedication to an appropriate conservation management organization. This dedication and management would ensure the long-term conservation status of these sensitive habitat types in the San Bernardino Valley. It can therefore be concluded that the prescribed mitigation is feasible and would thus mitigate the project's impacts to riparian habitats to less than significant levels.

IMPACT 5.3-4: THE PROPOSED PROJECT WOULD AFFECT WILDLIFE MOVEMENT AND WILDLIFE NURSERY SITES. RAPTOR FORAGING HABITAT AND NESTING BIRDS WOULD NOT BE AFFECTED. [THRESHOLD B-4]

Impact Analysis: The project would result in impacts to an area that is used by a number of species for nursery sites, foraging, and movement. The project site also provides habitat for nesting birds and marginally suitable habitat for foraging raptors.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Wildlife Movement Corridors

There is substantial evidence to indicate that the project site serves as a corridor for a wide variety of wildlife species. Such areas are usually considered significant when they are determined to be of regional importance or otherwise contribute to regional conservation goals.

For the purposes of this analysis, the project site can be considered to be composed of two principal parts in regard to wildlife movement. The first component is Cable Creek, which serves as an obvious corridor since it contains perennial water, adequate cover and food resources, and allows for the unimpeded movement of animals between higher and lower elevations. The riparian areas of Cable Creek are not planned for development, so the use of this corridor by wildlife would not be significantly impacted as a result of the proposed project. The exception to this is at the southern end of the site, where the outwash of Cable Creek would be crossed by the secondary access road. This roadway and associated culverts and drainage improvements could create a barrier to wildlife where currently no barrier exists. However, the roadway would be relatively narrow and can be designed in such a manner so that wildlife movement is not substantially impeded. In addition, the roadway would be constructed in USFWS-designated critical habitat for SBKR. As

part of the consultation process, USFWS would impose mitigation aimed at reducing the impact of the roadway on SBKR. These requirements would likely result in a positive benefit for other wildlife species as well. Therefore, mitigation required as part of this process would likely reduce the project's impact to wildlife movement within Cable Creek to less than significant levels.

In anticipation of these agency requirements, mitigation is recommended in this EIR to reduce the project's impacts in this regard to less than significant levels. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR and includes specific design requirements aimed at allowing the unrestricted movement of wildlife within the lower portion of Cable Creek. With implementation of these measures, the project's impact in regard to the secondary access road crossing at Cable Creek would be less than significant.

The second component relating to wildlife movement deals with wildlife movement across the site in an east-to-west direction and vice-versa. While the Cable Creek corridor on the western side of the site provides movement along a relatively narrow corridor in a north-to-south direction, the project site itself provides lateral movements through a much wider area and across the base of the mountain front. Were the site to be developed without consideration for this situation then the impact could be considered significant the development would effectively create a substantial barrier to wildlife movement across a large area.

This potential impact can be mitigated by retaining and/or improving existing areas on the project site that are conducive to wildlife movement. As seen in Figure 5.3-2, the large tributary that crosses the northern third of the site provides the most effective avenue for wildlife movement across the site. This is due to the fact that the areas on both sides of the property at this point are essentially natural in composition and therefore allow animals to move across the site without having to navigate substantial human-made barriers. The tributary also affords movement into and out of Cable Creek and thus to areas both to the north and south of the site. Other portions of the project area, especially the southern two-thirds of the site, do not offer these benefits. Those areas are somewhat blocked on the west by existing development, and they do not contain streams or other features that would be attractive to wildlife in terms of movement.

Retaining and/or improving this corridor would represent the greatest benefit to wildlife in terms of lateral movement across the site. The tributary offers specific characteristics, such as cover and foraging resources, that make it especially suitable for wildlife movement. Therefore, mitigation is recommended to preserve and enhance this area to allow wildlife movement across the site to continue. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR and includes specific design requirements aimed at allowing the unrestricted movement of wildlife through this corridor. With implementation of these measures, the project's impact to wildlife corridors would be less than significant.

Wildlife Nursery Sites

There is substantial evidence to indicate that the site provides habitat that is suitable for use as a wildlife nursery site. Based on a number of observations over the years, the use of the site as a nursery site by mule deer is reasonably well established. Other species may utilize the site for this purpose as well, but this has not been observed or confirmed. Regardless, development of the project site would disallow its continued use as a nursery site by mule deer.

In determining whether or not the loss of this nursery site would constitute a significant impact, the species making use of the site must be considered. If a sensitive or listed species were known to use the area as a nursery site, then the loss of the site would be more problematic than if it were used by more common species. For this site, no sensitive or listed species has been observed using the site for nursery purposes. Mule deer are the only species that have been positively confirmed to use the area for this purpose, though it

is likely that a number of other species, such as small mammals and birds, use the site for this purpose as well. None of these species, however, is a listed or sensitive species.

Mule deer is a common species that is not regionally or locally threatened or endangered. The species occurs in great quantities throughout the region and western North America. Statewide, CDFG considers mule deer to be common and abundant. In 2008, CDFG issued 237,083 deer hunting tags statewide and an estimated 29,612 animals were harvested. In Deer Hunt Zone D14, the CDFG management zone in which the proposed project is located, CDFG and USFS consider mule deer populations to be stable or slightly declining (CDFG 2003; USFS 2006a). Both agencies attribute this gradual decline to a number of factors, but primarily to fire suppression activities that have allowed vegetation to become overly mature and dense and thus less suitable for mule deer. The ongoing drought in the region has also impacted mule deer populations, because it has dried up streams and springs that were previously considered perennial and has also decreased forage production. The large fires of 2003 and 2007, however, have improved habitat conditions in many areas and it is projected that deer populations will increase if normal rainfall returns. Fuel treatments and fuel reduction efforts in many areas have also assisted in overall habitat recovery, and these efforts remain ongoing throughout the San Bernardino Mountains (USFS 2006a).

When it compiled its latest land management plans for the four southern California national forests in 2006, the USFS designated mule deer as a Management Indicator Species (MIS). The MIS designation is not a sensitive species listing and is not an indicator that the species is imperiled. Rather, the designation is intended to assist in monitoring the results of management on the national forests. In the case of mule deer, the MIS designation is intended to determine if USFS management activities are providing for the types of habitat that the species requires. One of the principal aims of the MIS designation in this regard is to track how fuels management and/or fire suppression on the forests can affect habitat characteristics and thus the species in general. Since the USFS has as one of its goals the restoration of habitats to the more natural state, prior to the implementation of aggressive fire suppression tactics, it is likely that the overall habitat quality for mule deer in the region will increase. It is therefore reasonable to conclude that mule deer populations within the San Bernardino Mountains will be stable or perhaps even increase over the next several years (USFS 2006a).

CDFG manages mule deer through a number of means, the most well known of which is hunting. Hunting is used as a tool to control species populations and to avoid overstocking within particular areas. The proposed project site is located within CDFG Deer Hunt Zone D14, which is a zone that covers all of the San Bernardino Mountains portion of the SBNF as well as some peripheral areas. For at least the last decade, CDFG has maintained a hunt tag quota of 3,000 for Zone D14. This overall stability in CDFG's management of mule deer in the San Bernardino Mountains is consistent with the agency's determination that the mule deer population in the area is relatively stable.

Considering the overall abundance and the relative stability of mule deer populations in the area, it is reasonable to conclude that the loss of the nursery area on the project site would be unlikely to result in anything but a negligible decline in the overall population of mule deer in the region, or even in this portion of the San Bernardino Mountains. The project site is surrounded on three sides by the SBNF, which provides substantial open space opportunities for use as alternative nursery sites by mule deer. In addition, the project would continue to maintain Cable Creek as an undisturbed perennial water source and wildlife corridor. Since a lack of perennial water is a major limiting factor in the maintenance of mule deer populations, the conservation of this watercourse would provide a substantial benefit to mule deer. Accordingly, the loss of this nursery site for mule deer would be less than significant. However, to avoid direct impacts to mule deer during the fawning season, mitigation is recommended to lessen the potential for impacts to during initial grubbing and vegetation clearing. The prescribed mitigation is discussed further in Section 5.3.7 of this EIR

and includes specific requirements for scheduling vegetation clearing outside of the mule deer fawning season.

Nesting Birds

The site provides suitable habitat for a wide variety of nesting bird species. In accordance with applicable laws, it is unlawful to take, possess, or needlessly destroy any bird of prey or the nests or eggs of any bird species. Disturbance of any active bird nest during the breeding season, including active owl burrows, is prohibited by law. Breeding season typically runs from mid-February through late August. Ideally, ground-disturbing activities should take place outside of the breeding season, and doing so would reduce the project's impact to nesting birds to less than significant levels. If this is not possible and it is necessary to conduct ground-disturbing activities during the breeding season, then appropriate preconstruction surveys should be initiated to determine the presence or absence of nesting birds prior to construction. Compliance with this requirement would reduce the project's impact to less than significant.

Raptor Foraging Habitat

The project site lacks expansive grassland habitat and is for the most part dominated by dense Riversidean sage scrub and chaparral. These habitats do not provide particularly favorable conditions for foraging raptors due to the lack of prey visibility. It can therefore be concluded that the site provides only marginally suitable foraging habitat for raptors and that these species would be more likely to rely on other areas for the majority of their foraging. Accordingly, the project would not result in a significant impact to raptor foraging habitat.

IMPACT 5.3-5: THE PROPOSED PROJECT WOULD BE REQUIRED TO COMPLY WITH THE CITY OF SAN BERNARDINO TREE ORDINANCE, AND BE CONSISTENT WITH APPLICABLE POLICIES OF THE CITY OF SAN BERNARDINO GENERAL PLAN. [THRESHOLDS B-5 AND B-6]

Impact Analysis: The City of San Bernardino has adopted a tree ordinance that regulates the removal and replacement of native and nonnative trees that are impacted by development. City General Plan policies and goals would also apply to the site.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Tree Resources

The arborist reports prepared for the project site (IUF 1998; MBA 2007) determined that development of the proposed project would result in the removal of approximately 2,400 trees. The bulk of native trees on the site are located within and around Cable Creek or in the northern portion of the site (see Table 5.3-3) and are not within the development footprint (see Figure 5.1-1). These trees would not be impacted by the project. Of the approximately 2,400 trees within the development footprint, only about 220 of these (less than 1 percent) are native species, mostly walnut and sycamore. The majority of the trees requiring removal are part of a remnant eucalyptus plantation (approximately 2,170 trees). The remaining nonnative trees that would be removed consist of approximately 10 ornamental nonnative trees.

Eucalyptus presents a specific problem for this site in that they are nonnative and present a severe fire hazard. A great many of the trees are in poor condition and were classified as hazard trees in the arborist reports. Eucalyptus trees are extremely flammable and in many areas are considered nuisance species. The Fire Protection Plan prepared for the project (Firesafe Planning Solutions 2008) mandates that all eucalyptus

on the site be removed. These trees were originally planted as part of a cultivated eucalyptus plantation, primarily for the purpose of fuel wood production. Since tree plantations are specifically exempted from the mitigation requirements of the City of San Bernardino Tree Ordinance, replacement of these trees is not required. While eucalyptus can provide suitable nesting locations for raptors and other birds, their marginal biological value must be weighed against the hazards they present to public safety and their ability to carry wildfire to developed areas and surrounding wildlands. Based on these considerations, the removal of the eucalyptus on the project site can be considered an overall benefit to the area and therefore a less than significant impact.

Conversely, native trees provide specific natural resource value in that they provide nesting habitat for raptors and cover and foraging habitat for other avian species, and they are important components of the natural ecosystem. The trees are also aesthetically pleasing and therefore constitute an important resource in this regard. The City's Tree Ordinance requires that "significant" trees be mitigated. In determining what constitutes a significant tree, the initial arborist report prepared for the site (IUF 1998) determined that healthy, structurally sound, native and ornamental trees over 20 feet in height be considered significant. Approximately 220 trees on the site met these criteria during the 1998 tree inventory. Thus the removal of these trees during project development would be considered a potentially significant impact and thus subject to the mitigation requirements of the City's Tree Ordinance.

Mitigation to this effect is presented in Section 5.3.7 of this EIR. Since the initial inventory of trees on the site is a over 12 years old and the exact count of significant trees may have changed, mitigation is provided to require an updated inventory of tree resources within the project footprint. The mitigation requires that specific management recommendations contained in the arborist reports be implemented. These recommendations include protocols for removal and relocation of native trees, tree protection during construction, and the preservation of specific trees on the project site. Performance measures are provided to mandate replacement ratios and the types and sizes of specimens required to meet the terms of the mitigation. Measures are also included to mandate improvements to tree resources in specific areas of the site. Implementation of this mitigation would comply with the City of San Bernardino Tree Ordinance and would lessen the project's impacts in this regard to less than significant levels.



City of San Bernardino General Plan

The City's General Plan provides a number of goals and policies directed toward the conservation of biological resources (see Section 5.3.2 of this EIR). The goals and policies generally center around three principal areas:1) General conservation goals and special requirements for development within BRMAs (Goal 12.1); 2) Protection of riparian areas (Goal 12.2); and 3) The conservation of open space and other priority areas (Goal 12.3). An analysis of the project's consistency with each of these goals is discussed below.

Goal 12.1: Conservation of San Bernardino's Biological Resources

This goal contains policies that require developments to be designed in a manner that is sensitive to unique biological resources, and it also prescribes specific conditions for developments proposed within BRMAs. According to Figure NRC-2 of the General Plan, the project site is located within a BRMA. To be consistent with the General Plan, projects in BRMAs must submit biological resource assessments and other information that identifies the proposed project's impacts on sensitive biological resources. As outlined in Section 5.3.1 of this EIR, the Spring Trails project site has been the subject of numerous technical studies over the last decade. As such, the project is consistent with this requirement.

Projects within BRMAs are required to identify mitigation measures to eliminate significant adverse impacts to sensitive biological resources. As discussed later in Section 5.3.7 of this EIR, a number of mitigation

measures have been identified for the project, and upon implementation of these measures no significant impacts remain. Therefore, the project is consistent in this regard as well.

Projects within BRMAs are required to define a plan to monitor the effectiveness of prescribed mitigation. The establishment of such a monitoring program is prescribed as mitigation for this project. The program includes requirements for annual surveys for a minimum of five years after project development, actions to be taken if certain performance measures are not met, and methods for overseeing the monitoring program. With implementation of these requirements the project is consistent with this policy of the General Plan.

Finally, the policies within Goal 12.1 require that projects consider and discuss the restoration of significant habitats. While the General Plan is not particularly clear on this issue, it appears that the intent of the policy is to provide for the restoration of habitats that have been degraded or otherwise historically altered through human activity. This policy does not particularly apply to this project since the bulk of the habitat on the site is intact and is not degraded. Regardless of the policy's intent, the project as designed and mitigated would improve specific areas of habitat within the project area. Most notably, the mitigation prescribed for wildlife corridor conservation also includes requirements to improve habitats in those areas. Improvements include the planting and maintenance of additional native vegetation to enhance wildlife foraging and movement areas. In addition, the most significant habitat on the project site, the riparian areas of Cable Creek, would be preserved and would not be impacted by the project's development. Finally, the project applicant would be required to purchase offsite mitigation lands or pay in-lieu fees for the permanent preservation of sensitive wildlife habitat within the region. Based on these considerations, it is thus reasonable to conclude that the project meets and exceeds the overall goals of the policy.

Goal 12.2: Protection of Riparian Corridors

This goal contains policies that pertain to the conservation of riparian resources. The goal also contains directives on what activities are specifically allowed to occur within riparian areas.

The plan specifies that development and grading within 50 feet of riparian corridors is prohibited unless no feasible alternative exists. In the case of the Spring Trails project, the riparian corridor of Cable Creek lies outside of the footprint of the project. In regard to the hiking and equestrian trail that is planned for this area, mitigation is prescribed in Section 5.3.7 of this EIR that imposes specific restrictions on the trail's proximity to the creek as well as other design requirements to protect riparian resources.

Two other riparian corridors on the site would be spanned by roadways. However, mitigation for these bridges and/or culverts is prescribed to minimize their impacts have on the riparian areas. Mitigation is also prescribed that requires the enhancement of the large area of riparian vegetation that crosses the northern third of the site. These enhancements would allow for the onsite conservation of this area and provide opportunities for wildlife movement within this corridor. Based on each of these mitigation requirements, together with other project design features, the project would be in compliance with all General Plan policies relating to the conservation of riparian areas.

Goal 12.3: Establishment of Open Space Corridors

This goal provides directives as to types of habitats that are considered a high priority for long-term preservation. The goal specifically calls out the City's desire to preserve the riparian corridor of Cable Creek. Since the Spring Trails project would permanently conserve the Cable Creek corridor, the project is consistent with the General Plan in this regard.

The plan also specifies other high priority habitat types, including endangered species habitat, alluvial scrub vegetation, riparian vegetation, and native walnut woodlands. The Spring Trails project would provide for the conservation of each of these resource types, either through onsite conservation and/or enhancement, or through the purchase and dedication of offsite mitigation lands. Therefore, it can be determined that the proposed project is consistent with the General Plan in this regard.

5.3.4 Cumulative Impacts

The Spring Trails project site contains a number of unique and uncommon characteristics that provide for a wide diversity of plant and animal species, especially within the onsite riparian areas. However, specific aspects of the project's design, as well as the implementation of the required mitigation measures (see Section 5.3.7, below) would successfully avoid or mitigate significant impacts to these resources. The most significant area of riparian habitat on the project site is Cable Creek, and that area is outside of the project footprint and would not be impacted by the project. Additional project design features and required mitigation would conserve and/or enhance existing onsite riparian features and wildlife corridors. Mitigation is also recommended that would require additional offsite conservation of riparian areas and other important habitats.

While continued development within the greater San Bernardino region has decreased the amount of available high quality habitat in the area, this project does not cumulatively contribute to that decrease. The most important habitat values are maintained on the site, and certain aspects of the project's design, such as the permanent preservation of Cable Creek, actually provide long-term benefits to the region in terms of long-term biological resource conservation. Based on each of these factors it can be determined that the project would not present a significant cumulative impact in regard to biological resources. This analysis of cumulative impacts to biological resources is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.3.5 Existing Regulations and Standard Conditions

Federal

- Federal Endangered Species Act (Section 7)
- Clean Water Act (Sections 401 and 404)
- Migratory Bird Treaty Act

State

- California Endangered Species Act
- California Fish and Game Code Section 1600 (Streambed Alteration Permit)
- California Fish and Game Code Section 3503 (Nesting bird regulations)

City of San Bernardino

- Municipal Code Section 19.28.090 (Tree ordinance)

5.3.6 Level of Significance Before Mitigation

Without mitigation, all impacts would be potentially significant:

- Impact 5.3-1: Development of the project would involve the loss or modification of approximately 265.2 acres of natural habitat and the wildlife species thereon, including Plummer's mariposa lily, California black walnut, San Bernardino kangaroo rat, and the Los Angeles pocket mouse. Impacts would also occur to US Fish and Wildlife Service designated critical habitat and to sensitive birds, reptiles, and amphibians that may occur around Cable Creek.

- Impact 5.3-2: Development of the proposed project would result in impacts to six riparian plant communities (totaling 26.4 acres) and non-riparian Riversidean sage scrub areas (168.4 acres). Portions of the site within US Fish and Wildlife Service-designated critical habitat for San Bernardino kangaroo rat would be impacted. Indirect impacts to sensitive plants and animals and impacts related to noxious weeds, invasive species, and human-wildlife interactions may also occur.

- Impact 5.3-3: Jurisdictional areas and natural habitats would be impacted, including 10.6 acres of US Army Corps of Engineers and Regional Water Quality Control Board jurisdictional areas and 13.3 acres of California Department of Fish and Game jurisdictional areas. Approximately 6.2 acres of the identified jurisdictional areas are in a seasonal wetland.

- Impact 5.3-4: Wildlife corridors, migratory movement, and bird nesting sites would be affected.

- Impact 5.3-5: Tree resources would be potentially impacted and the proposed project may be inconsistent with the requirements of City of San Bernardino General Plan Policy 12.1.4(b), which requires development within Biological Resource Management Areas to define a program for monitoring, evaluating the effectiveness of, and ensuring the adequacy of specified mitigation measures.

5.3.7 Mitigation Measures

Impact 5.3-1

3-1 Prior to the issuance of grading permits, preconstruction surveys within the proposed impact areas for Plummer's mariposa lily shall be conducted in the appropriate blooming period by a qualified biologist. The appropriate blooming period is defined as occurring within the months of April, May, and June, or as indicated by positive verification of blooming at a documented reference location. Surveys must only be conducted during a year of at least average precipitation, as determined by official precipitation records. The surveys should positively identify and quantify all individuals on or in the immediate vicinity of the proposed impact areas. Any individuals confirmed within the project impact area shall be considered for possible salvage and relocation into suitable receptor sites located onsite within preserved areas, if feasible. Any individuals confirmed in the immediate vicinity of a proposed impact area shall be flagged and appropriately fenced off from construction zones to prevent inadvertent impacts. Individuals confirmed within areas proposed for preservation onsite shall be properly recorded and avoided during any revegetation or other efforts anticipated in the long term during project operation. All observations shall be accurately reported to the California Natural Diversity Database, the California Native Plant Survey, the Consortium of California Herbarium, and/or other herbarium or sensitive species databases as determined by the qualified biologist. This measure shall be implemented to the satisfaction of the Community Development Director.

3-2 To mitigate for impacts to unoccupied critical habitat of the federally endangered San Bernardino kangaroo rat, the project applicant shall acquire offsite permanent mitigation lands of like habitat quality as determined by the US Fish and Wildlife Service (USFWS) during the

Section 7 consultation process. Mitigation lands must be acquired prior to the issuance of grading permits, and shall incorporate appropriate long-term management provisions such as deed restrictions, endowments, and/or other management mechanisms to provide for the long-term conservation of the habitat. Potential properties include, but are not limited to, those managed by San Bernardino County Special Districts located in the Glen Helen, Rialto, and Rancho Cucamonga areas. Mitigation lands shall be acquired at a replacement ratio of 1:1 (one acre replaced for every one acre impacted). This measure does not preclude the imposition of additional mitigation requirements that may be initiated by the USFWS during the Section 7 consultation process. This measure shall be implemented to the satisfaction of the Community Development Director.

3-3 To mitigate for potential impacts to hydrological processes and subsequent degradation of habitat for the federally endangered San Bernardino kangaroo rat and other sensitive species, all roadway crossings or other improvements proposed within critical habitat for the species shall be designed in such a manner as to not substantially alter the natural flow regimes through impacted sensitive habitat areas. These designs shall include, but shall not necessarily be limited to, the installation of appropriate culverts and stream crossings that allow for natural flow and uninhibited downstream hydrological processes. Design of these improvements shall be undertaken in consultation with the US Fish and Wildlife Service and other responsible agencies. This measure shall be implemented to the satisfaction of the Community Development Director prior to the issuance of grading permits.

3-4 Any hiking and equestrian trails or other facilities developed within Cable Creek or other riparian areas on the site shall be designed to comply with provisions in the General Plan. These requirements shall include, but not necessarily be limited to: 1) no ground disturbance may take place within 50 feet of the ordinary high-water mark of the associated stream channel; 2) erosion, sedimentation, and runoff from the proposed improvements must be minimized by the implementation of appropriate best management practices, the installation of appropriate runoff diversions, and/or the planting of native vegetation; 3) Vegetation removal will be minimized to the maximum extent possible; and 4) appropriate signage shall be installed in at least five locations alongside these facilities to educate users as to the importance of riparian ecosystems, the species that rely upon them, and the importance of avoiding unnecessary impacts and disturbance. This measure shall be implemented to the satisfaction of the Community Development Director. [This measure also provides mitigation for Impact 5.3-4 as related to impacts to wildlife corridors. See Mitigation Measure 3-9]



3-5 The applicant shall prepare a signage and a buyer awareness program to be implemented to inform homeowners of the proximity to sensitive wildlife areas. The purpose of this program shall be to (1) prevent wildlife from being attracted to the housing development and (2) prevent household pets from preying on and harassing the local sensitive species. Materials and literature provided to the residents shall address the implications and dangers of living adjacent to natural open space areas. To prevent wildlife from being attracted to the project site, the materials shall provide information on homeowner's benefits and responsibilities associated with living close to natural wildlife habitats. Specific responsibilities of homeowners shall be described in these materials and be included in the Homeowners Association (HOA) Covenants, Codes, & Restrictions (CC&R). These measures shall include, but not necessarily be limited to, the following:

- The storage and disposal of ALL food or refuse that is edible by or attractive to wildlife shall be placed in Wildlife-Resistant Refuse Enclosures and Containers. These

containers shall meet applicable standards of testing by the Living With Wildlife Foundation and be bear resistant for 60 minutes so long as they are able to meet the City of San Bernardino's Refuse and Recycling Division's restrictions for pick-up and onsite sizing. Examples of Wildlife-Resistant Refuse Enclosures and Containers are provided by the Living with Wildlife Foundation (http://www.lwwf.org/).

- The project applicant shall coordinate with the City of San Bernardino Refuse and Recycling Division to ensure all refuse facilities conform to their sizing and pick-up requirements. All refuse containers shall be designed to be consistent with the City of San Bernardino Refuse and Recycling Division restrictions.

- With the exception of birdfeeders, no person shall intentionally feed or knowingly leave or store any refuse, food product, pet food, or other product edible by wildlife on any premises in a manner which would constitute a lure, attraction, or enticement of wildlife on property within the development

  - Birdfeeders must be suspended on a cable or other device so as to be inaccessible to bears and other wildlife, and the area below the feeders must be kept free from seed debris. If a wild animal gains access to a birdfeeder, the condition allowing access must be corrected or the birdfeeder removed.

- To limit the amount of time refuse is on the curb, trash should be set out and brought back inside between specified hours on pick-up day (to be detailed in the proposed or future HOA CC&R's).

To prevent the disturbance of wildlife (and sensitive species) by domestic pets, the program shall inform residents of the impacts their pets have on local animals. Cat-owners shall be informed of measures to keep their pets within their property boundaries and dog-owners shall keep their dogs on a leash while outside (except within designated dog parks). These measures would also serve to lessen the likelihood of domestic pets being preyed upon by wild predators.

The buyer awareness materials will be included in a sales disclosure statement and in the Homeowners Association (HOA) CC&R's. A copy of the buyer awareness materials shall be approved by the Community Development Director and available to residents upon request.

Impact 5.3-2

3-6 To mitigate impacts to 168.4 acres of Riversidean sage scrub (RSS) and 26.4 acres of riparian plant communities, the project applicant shall do one of the following, or a combination thereof, prior to the issuance of grading permits: 1) acquire offsite permanent mitigation lands of like habitat as determined by the California Department of Fish and Game (CDFG); and/or 2) pay appropriate in-lieu fees to an appropriate permanent mitigation land bank as determined by CDFG. Mitigation lands must be acquired prior to the issuance of grading permits, and shall incorporate appropriate long-term management provisions, such as deed restrictions, endowments, and/or other management mechanisms to provide for the long-term conservation of the habitat. Potential properties include, but are not limited to, those managed by San Bernardino County Special Districts located in the Glen Helen, Rialto, and Rancho Cucamonga areas. Mitigation lands for riparian habitat shall be acquired at a replacement ratio of 1:1 (one acre replaced for every one acre impacted). Mitigation lands for RSS shall be acquired at a

replacement ration of 1:3 (one acre replaced for every three acres impacted). This measure shall be implemented to the satisfaction of the Community Development Director.

3-7 All real property sold within the development shall contain within the real estate contract appropriate Covenants, Codes, and Restrictions (CC&Rs) to require only the use of approved plants on any and all parcels within the development. Approved plants are defined as those listed in the Fire Protection Plan (Firesafe Planning Solutions 2008) and incorporated into the Spring Trails Specific Plan. All plants classified as "invasive" or "noxious" by the US Department of Agriculture Natural Resource Conservation Service (NRCS) shall be specifically prohibited from use in any part of the development, unless specifically authorized within the Fire Protection Plan or the Specific Plan. Enforcement shall be instituted through the project's Homeowner's Association (HOA) and specific enforcement measures shall be provided within the HOA's charter. Enforcement measures may include, but not necessarily be limited to, the imposition of fines, liens, property-owner reimbursed removal of unauthorized plants, and/or other mechanisms. This measure must be implemented prior to the sale of the first residential lot and shall be implemented to the satisfaction of the Community Development Director.

3-8 Prior to the issuance of grading permits, the developer or his designee shall submit to the City a noxious weed control plan prepared by a qualified specialist that shall be implemented during construction of the project. The plan shall contain specific measures to be adopted to lessen or eliminate the inadvertent introduction of noxious weeds onto the site or surrounding areas. At a minimum, the plan shall incorporate each of the following requirements: 1) all construction equipment used on the site shall be thoroughly washed *prior* to transport to the project site; 2) cleaning and washing of equipment includes washing and/or steam cleaning of tires, undercarriages, frames, and other parts of the equipment where mud, dirt, and other debris could be located; 3) offsite cleaning areas shall be clearly identified; and 4) straw bales and other erosion control products shall be certified as "weed free". The plan shall be reviewed by a qualified third party with expertise in the field of noxious weed control. Other control measures may be added by that specialist as deemed appropriate. Following approval of the plan, the plan shall be implemented throughout the construction phase of the project and overseen by a qualified specialist at monthly intervals. During monitoring, the specialist shall have the authority to require corrective measures to assure the success of the plan. This measure shall be implemented to the satisfaction of the Community Development Director.



Impact 5.3-3

Mitigation Measures 3-3, 3-6 and 3-11 would reduce the project's impacts to jurisdictional areas and riparian habitats.

Impact 5.3-4

3-9 Implementation of Mitigation Measure 3-4 to mitigate potential impacts to sensitive species in Cable Creek shall also be applied to Impact 5.3-4.

3-10 With regard to the protection of nesting birds, one of the following must occur: 1) Construction should occur outside of the avian nesting season (approximately February 15 through August 31); or 2) If construction must occur during the nesting season, then a preconstruction nesting bird survey of the site shall be conducted by a qualified biologist no more than 14 days prior to construction activities. If active nests are found onsite, then they must be avoided by an appropriate buffer until any young birds have fledged and the nest has completed its cycle, as

determined by a qualified biologist. If construction occurs outside of the avian nesting period, then construction may commence without further impediment, commensurate with other regulatory and mitigation requirements. This measure shall be implemented to the satisfaction of the Community Development Director.

3-11 Two known wildlife corridors are present on the project site and may be impacted by the proposed project unless mitigation is incorporated: 1) the unnamed tributary of Cable Creek that flows in an east-to-west direction in the northern third of the project site (referred to here as the Northern Corridor); and 2) the outwash of Cable Creek adjacent to the Interstate 215 freeway that is proposed to be crossed by the secondary access road (referred to here as the Southern Corridor). For these corridors, the following must occur:

Northern Corridor: 1) Native vegetation within this corridor must be restored, enhanced and maintained to the maximum extent allowed by the Fire Protection Plan; 2) riparian vegetation that provides high-quality foraging opportunities, cover, and other habitat values shall be the preferred vegetation type in this area, unless specifically prohibited by the Fire Protection Plan; 3) this area shall be the preferred location for the planting of replacement native trees as outlined in the tree replacement requirements of Mitigation Measure 3-11, unless specifically prohibited by the Fire Protection Plan; 4) the corridor shall be maintained free of fences, walls, or other obstructions; 5) any lighting associated with the project in this area, including street lights and residential lights, shall be of the minimum output required and shall be down-shielded to prevent excessive light bleed into adjacent areas; 6) any road crossings, bridges, culverts, etc., shall be constructed with soft bottoms with an openness ratio of at least 0.9 (openness ratio=height x width/length); and 7) additional recommendations as outlined in the report entitled "A Linkage Design for the San Gabriel-San Bernardino Connection" (South Coast Missing Linkages Project 2004) may be incorporated as feasible and appropriate.

Southern Corridor: 1) Any bridge, culvert, or other road crossing structure shall be designed in such a manner as to allow for the maintenance of natural flow through the structure and downstream of the structure, as conditioned by the US Fish and Wildlife Service during the Section 7 permitting process; 2) any road crossings, bridges, culverts, etc., shall be constructed with soft bottoms with an openness ratio of at least 0.9 (openness ratio=height x width/length); and 3) additional recommendations as outlined in the report entitled "*A Linkage Design for the San Gabriel-San Bernardino Connection"* (South Coast Missing Linkages Project 2004) may be incorporated as feasible and appropriate.

These measures shall be incorporated into site development plans and must be reviewed and approved prior to the issuance of grading permits. This measure does not preclude the requirement of additional mitigation that may be initiated by the US Fish and Wildlife Service, the US Army Corps of Engineers, the Regional Water Quality Control Board, or the California Department of Fish and Game during the regulatory permitting process. This measure shall be implemented to the satisfaction of the Community Development Director.

3-12 To avoid potential direct impacts to mule deer birthing and initial nursing, initial grubbing and vegetation clearing may not occur during mule deer fawning season. For purposes of this project, the mule deer fawning season is defined as March 15 through August 31. This measure shall be implemented to the satisfaction of the Community Development Director.

Impact 5.3-5

3-13 Significant tree resources that are removed from the site during project development shall be replaced at a 1:1 ratio or at the exchange ratios specific below. Significant tree resources are defined as any native or nonnative ornamental tree—excluding species of the *Eucalyptus* genus—that is healthy, structurally sound, and over 20 feet in height. For California black walnut (*Juglans californica* var. *californica*), all specimens of the species shall be regarded as significant, regardless of size or height. Prior to the issuance of grading permits, a certified arborist shall conduct an inventory of all significant trees within the development footprint. This inventory shall be used to determine the number and types of significant trees that will be impacted and the subsequent replacement quantities. The number of replacement trees shall be, at a minimum, 220 trees. Should the aforementioned inventory determine that a greater number of significant trees will be impacted, then that quantity shall be used in determining replacement quantities. For purposes of replacement ratios, the following exchange ratios shall be used: 1) one 36-inch box tree is equivalent to one replacement tree; 2) five 15-gallon trees are equivalent to one replacement tree; 3) 10 five-gallon trees are equivalent to one replacement tree; and 4) 15 one-gallon trees are equivalent to one replacement tree.

During the development of the project, the project applicant shall incorporate the recommendations as set forth in the project arborist report (Integrated Urban Forestry 1998). A certified arborist shall be retained at the developer's expense to oversee the implementation of these requirements and to specify other requirements as deemed appropriate. The measures to be followed include, but are not limited to, specified protocols for the following: 1) the removal of nonnative trees from the site; 2) the removal and transplantation, when feasible, of structurally sound and healthy native trees to other areas of the project site; 3) the installation of tree protection barriers on all trees to be preserved that are within the reach of vehicles and equipment; 4) tree protection training of construction personnel by a certified arborist; 5) irrigation of trees where the natural water supply is interrupted or diminished or where protected trees may require additional water to endure construction-induced stresses; 6) subsequent replacement of any trees that are damaged or have not survived transplantation and relocation; and 7) implementation of the tree replacement plan, as outlined in the first paragraph of this measure. This measure shall be implemented to the satisfaction of the Community Development Director.

3-14 Prior to the commencement of ground-disturbing activities, the developer shall retain the services of qualified specialists, approved by the City, to oversee the long-term effectiveness of the biological resources mitigation required in this EIR. When appropriate, the services of these specialists may be combined so long as the person(s) so employed possess the requisite training and skills necessary to effectively carry out their duties to professional standards. Those specialists shall conduct reviews of the project site for a minimum of five years, as measured from the day of beginning of initial ground disturbance. Reviews shall be conducted, as applicable, on a monthly basis for the first year following initiation, on a quarterly basis during the second and third years, and on an annual basis during the fourth and fifth years. The intensity of monitoring may be increased or the monitoring period extended if the City or relevant Responsible Agency (i.e., CDFG, USFWS, RWQCB, etc.) determines that conditions on the ground warrant such action. The qualified specialists to be retained and the nature of their duties are as follows:

Biologist: A qualified biologist shall monitor the effectiveness of Mitigation Measures 3-1, 3-2, 3-4, 3-6, 3-10, 3-11, 3-12, and 3-14.

Noxious/Invasive Plant Control Specialist: A person who is qualified in the field of noxious plant management and control shall monitor the effectiveness of Mitigation Measures 3-7 and 3-8.

Arborist: A certified arborist shall monitor the effectiveness of Mitigation Measure 3-13.

Hydrologist/Stormwater Control Specialist: A qualified hydrologist and/or stormwater control specialist shall monitor the effectiveness of Mitigation Measures 3-3, 3-4, and 3-6.

Following each monitoring session, these specialists shall file brief reports with the Community Development Director concerning the effectiveness of the prescribed mitigation. The specialist shall identify and call out any corrective actions required to assure that the purposes of the mitigation are being effectively pursued. The developer shall comply with any corrective measures so prescribed. Monitoring may cease if the qualified specialist determines that the terms of the mitigation have been satisfactorily implemented and that further monitoring is no longer required. This measure shall be implemented to the satisfaction of the Community Development Director.

5.3.8 Level of Significance After Mitigation

The mitigation measures presented above would successfully mitigate the following impacts to levels that are less than significant: Impact 5.3-1, Impact 5.3-2, Impact 5.3-3, Impact 5.3-4, and Impact 5.3-5.

5.4 CULTURAL RESOURCES

Cultural resources include buildings, structures, objects, and sites that are a result of human activities. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. Paleontological resources are the fossilized remains of animals and plants. This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Spring Trails project to impact cultural and paleontological resources in the City of San Bernardino.

The analysis in this section is based, in part, upon the following information:

- *Archaeological and Paleontological Resources Assessment Report with Mitigation Plan for the Spring Trails*, Cogstone Resource Management Inc., 2009; revised 2010 (See Appendix E)
- *Phase I Cultural Resources Assessment of the Spring Trails Project Road Alternatives, City of San Bernardino, California*, Michael Brandman Associates, 2008
- *A Supplemental Cultural Resources Study of the 353-acre Martin Ranch Project (Tentative Tract 15576), City of San Bernardino and Unincorporated San Bernardino County*, Archaeological Associates, 2004
- *Paleontology Literature and Records Review, Martin Ranch Residential Development, Tentative Tract Map #15576, San Bernardino, County, California*, Division of Earth Sciences, San Bernardino County Museum, 2000
- *Supplemental Cultural Resources Investigation: The Martin Ranch (TT 15576)*, Greenwood and Associates, 1998
- *Cultural Resources Survey of Martin Ranch, San Bernardino County*, RECON 1990

All archaeology reports are on file at the San Bernardino Archaeological Information Center. The paleontology report is on file in the Division of Earth Sciences, San Bernardino County Museum.

Study Methods

The Spring Trails project area has been studied and surveyed in six reports. In 1990, the first study consisted of a records search and field survey for the project area. The second study, in 1998, included intensive background research (local interviews and a more in-depth literature search) for the project area with a minor field survey for a potential road alignment. The third study, in 2000, was a review of paleontological records and project geology. The fourth study, in 2004, attempted to locate potential resources remembered by local residents and relocate previously identified resources in the project area. In 2008, the fifth study provided an assessment of road construction alternatives. The 2009 study relocated the cultural resources, prepared formal site records, surveyed project additions, and summarized all the previous work. An addition to the 2009 study was performed in 2010, when an attempt was made to locate a family cemetery using geophysical tools.

5.4.1 Environmental Setting

Natural Setting

Paleontology

The project site is at the southern edge of the Transverse Range Province. Resulting from a bend in the San Andreas Fault Zone, the mountains of the Transverse Range Province are some of the fastest growing in the world. This province includes the Little San Bernardino Mountains at the east, traces westward through the San Bernardino, San Gabriel, and Santa Monica Mountains, and continues west through Ventura and southern Santa Barbara County. The project is mapped as early Pleistocene to Holocene alluvial fans and Paleozoic to Mesozoic Devil Canyon Gneiss. Most of these rock units are not sensitive for fossils with the exception of fine-grained Pleistocene alluvium. The topographic features on the project site are described in more detail in Section 5.5, *Geology and Soils.*

Cultural Setting

Historic Period

Mojave Indian Trail: In 1776, Mojave Indian guides escorted Padre Francisco Garcés from the desert down into the San Bernardino Valley. They took what has been become known as the Mojave Indian Trail, which crossed the study area from its highest elevation down the vast alluvial fan to the mouth of Cajon Canyon. The trail was later used by Jedediah Smith when, in 1826 and 1827, he opened the first of the great transcontinental routes to California. Only a dozen or so years passed before Juan Bandini, grantee of the Jurupa Rancho, gained exclusive rights to a logging tract in the mountains just above the study area. Bandini and other rancheros placed their logs in the crotches of great tree limbs called "lizards," which were hauled by oxen.

The trail also served the needs of marauders in the form of Paiute and Ute Indian stock thieves who used it for access from the Mojave Desert to the great pasture lands of the San Bernardino Valley. The rancheros attempted to deal with this problem by establishing a ranch for a man named Michael White who, in return for his "Rancho Muscupiabe," was supposed to discourage the lawless Indians. This White failed to do. However, his rancho initiated the chain of title for most of the property in the mouth of Cajon Canyon, including the study area.

Cable Canyon Ranch: Although White quickly moved to Los Angeles, he retained ownership of Muscupiabe. In 1857, a lawyer named Granger received half the rancho for defending White's title after the American takeover of California. White sold the other half to a surveyor named Henry Hancock, who mapped the entire rancho.

Only a few years before Hancock's acquisition, the George Martin family had established a ranch and way-station for traffic moving up and down the Cajon Canyon. The Martin ranch was located at Glen Helen, near modern Devore, in the mouth of the Cajon. The Martins had two sons and a daughter when they arrived and had two more sons and daughters after they settled. The eldest of the latter children, Samuel, was born in 1854. Following George Martin's death in 1874, Hancock began exercising his rights as legal owner of the mouth of the Canyon, including the Martin property. It was probably as a result of this that young Samuel decided to move off the Muscupiabe and establish himself at the headwaters of Cable Canyon at the northern end of the project area. The land Martin homesteaded was contiguous with the Rancho Mucupiabe boundary and it may be that Samuel used one of Hancock's own survey stations (#22, a prominent boulder) to establish his property line.

Samuel Martin married Elizabeth Rachel Brown in 1877 (probably at Cable Canyon), and the couple had two sons. They built a stone ranch house and a barn in addition to related outbuildings and probably some water-distribution-related structures. They continued to operate their ranch through the late 19th century while the neighboring Muscupiabe fell into the hands of land speculators and was subdivided. By 1900, the Martin's Cable Canyon Ranch had become a key location because it included the headwaters of both upper branches of Cable Canyon Creek as well as Stump Canyon Creek. Since these waters emanated from his property, Samuel Martin assumed all the water was his. The purchasers of the Muscupiabe, on the other hand, assumed that they had purchased water rights and that they had, therefore, a right to use the water coming from Cable Canyon. The matter led to some very hard feelings and finally wound up in court, the judge finding in favor of the Muscupiabe owners.

A few years later, Henry Meyer, the most prominent of the Muscupiabe owners, decided to replace an earthen dam on the Martin property with a concrete dam. He and his party were confronted by Samuel Martin, who reportedly "abused" them. Once again, the parties went to court with Samuel maintaining that Meyer had no right to build a dam on Martin property. The case lasted for five years. Ultimately, the Martins sold Cable Canyon Ranch to several Muscupiabe families in 1917 and moved to the San Bernardino area. No one has occupied the Cable Canyon Ranch property since the departure of the Martins. The stone ranchhouse continued to stand until the 1940s, when it was reportedly burned by vandals. The fate of the barn is uncertain but its footing may survive.

Small Arms Target Range: In June of 1943, the United States Secretary of War filed suit in federal district court for temporary acquisition of 45 acres in the central portion of Martin Ranch to use as a rifle range for military personnel at nearby Camp Ono. The range consists of a series of parallel trenches and berms, which still survive. Concrete pedestals that once supported the targets can also been seen at the northern end of the range.

Archaeological and Historical Resources

Archaeological Site Inventory

A total of 14 resources have been located in the vicinity of the project; however, only 9 are within the project boundaries. A spring is known to be in the project area but vegetation prevented direct observation. Of the 9 sites within the project boundaries, 4 are associated with the Martin family and 5 are associated with the Meyer family.

Onsite

Cable Canyon Ranch House Complex (P-36-007030). The site, initially recorded in 1990, was described as a single-structure foundation with associated trash scatter, but has since been expanded to include other structures surrounding the Ranch house. In 2004 the trash scatter noted in 1990 could not be relocated, possibly due to dense vegetation. The 2009 Cogstone survey could not relocate the trash scatter either, though sparse pieces of aqua and amber glass were noted in the vicinity of where the scatter was recorded.

Other features in the vicinity of the house were also probably associated with the site. These features—including a second and third rock wall located on the west side of the dirt road northwest of the structure that measures 40 feet by 10 feet—were located and recorded during the 2009 Cogstone survey and the site record was updated to reflect the ranch house complex. A series of eucalyptus windbreaks were also recorded, as they are nonnative and parallel the rock walls surrounding the complex on the east, west, and north sides. Directly to the south of the house in the drainage channel is a stone alignment that was possibly used to channel the wash, and is presumed to be associated with the ranch house complex. Finally, a scatter

of bricks located east of the house complex and at the edge of the wash was also recorded. Other features connected to the ranch house complex should be present but their locations remain unknown.

Cogstone expects subsurface resources including at least one privy and additional trash disposal areas are present. Deposits such as these are of particular importance because they typically yield period artifacts. The probability of such features being present seems high because the grounds around the house have not been subject to significant disturbance. Given the layout of the house and the time period, the privy may be located at least 20 feet from the house within the walled enclosure.

Large Reservoir (P-36-014965). This site was first noted as a reservoir potentially associated with the Cable Canyon Ranch House in 2004. The site is described as a U-shaped structure measuring 22.6 feet on a side and 33 feet in length. The walls are built of rock and concrete, the concrete-lined interior sloping inward toward the bottom. This may have been the reservoir involved in the Martin-Meyer water dispute. In 2009 the site was recorded and described as a U-shaped, 35-foot-by-33.5-foot rectangular stone-laid rock alignment running northeast to southwest. The walls run roughly 32–55 inches in height, while the shape and positioning of the structure follows the natural contour of the hillside. Cement lining can still be seen on a portion of the interior (the west corner of alignment) of the structure and a buttress is present around the southwest base. This may be a reservoir or water management feature; however, its location northeast of the ranch house does not necessarily imply that it was the point of contention between the Martin and Meyers families.

Small Reservoir (P-36-014964). The small reservoir was also noted in 2004. The study described the site as "a small field stone reservoir located adjacent to a shallow arroyo about 500 ft. north of the ranch house. Built of dry laid rocks, the structure measures l0 ft. (NW–SE) by 8 ft. (NE–SW) on the interior. Traces of a concrete lining may be seen on the interior. A portion of the northerly wall has collapsed." The study also noted that the reservoir was probably built by Samuel Martin. In 2009, the site was also recorded to be in similar condition to when it was described in 2004, with the exception that both the northwest and southwest walls are now collapsed. Given the proximity to the Cable Canyon Ranch House ruins, it seems likely that the two sites are associated.

Spring. A spring was observed in 2004 approximately 625 feet northeast of the Cable Canyon Ranch House, and it was suggested it may have been the ranch's primary domestic water source. It was noted that "the spring was flowing at the time of the survey, and consisted of a small brick and mortar collection box resting adjacent to the area where the water emerges. The box measures 34" (N-S) by 45" (E–W) and is 17" high. Remains of a wood cover may still be seen on top of the box. Three pipes extend from the box southward." The 2009 Cogstone survey attempted to relocate the spring; however, the area immediately surrounding its location was covered by extremely dense brush, making access to and visibility of the spring impossible. The abundance of vegetation in the area suggests that the spring is still active, though the state of the collection box remains unknown.

Muscupiabe Reservoir (P-36-014966). First noted in 2004, the Muscupiabe Reservoir is described as "a moderate-size field stone and concrete reservoir (13 ft. N–S x 11.2 ft. E–W) located just below the grant line in the northwestern portion of the study area. The reservoir is currently 4–5 feet deep, and the bottom is covered with silt. Several large sheet metal pipes (both riveted and welded types) are visible on the surface north of the reservoir indicating that it was filled by water originating north of the site and, therefore, north of the Muscupiabe boundary. Thus, the 'Muscupiabe Reservoir' was probably built by Julius Meyer not long after he purchased the rancho in 1882." In 2009, Cogstone surveyors relocated and recorded the site. All of the features of the reservoir remain the same as in 2004, with the exception that no metal pipes were observed north of the reservoir. Instead, several pipe pieces were observed and recorded south of the

reservoir. Approximately 500 feet to the south, another series of metal pipes was observed, and it is possible that these pipes all connected to the Muscupiabe reservoir.

Metal Pipes (P-36-014967). First noted and recorded by Cogstone in 2009, this feature is most likely associated with the Muscupiabe reservoir and transported water south to the Meyer parcels. The study conducted in 1998 suggested that a series of water pipes extended southward from the Cable Canyon Ranch House area. However, given their proximity to the Muscupiabe reservoir, it seems more likely that they were associated with the reservoir and therefore used by the Meyer family. The metal piping runs 21.5 feet in a north to south direction, and approximately 7 feet of the pipe lies under a dirt road. The piping may continue south, as it appears to run back under the ground.

World War II Target Range (P-36-014968). In 1998, the site was described as a small-arms range associated with nearby Camp Ono in use during WWII. Further research in 2004 revealed that the lease agreement, identified as No. 3260 PH-Declaration of Taking, was drawn up between Henry L. Stimson, US secretary of war, and Robert B. Myer et al. for 45 acres of land. Originally, the property was acquired for the term beginning April 10, 1943, and ending June 30, 1944. The estimated compensation for this period was $122.46. However, a Supplemental Declaration of Taking was filed to extend the term for an additional year commencing July 1, 1944, and ending June 30, 1945, for $100.

In 2004, it was noted that four parallel berms and adjacent trenches covered an area of approximately 45 acres oriented northeast–southwest. Approximately 70 T-shaped concrete target pedestals in two heights (tall and short) were found along the northern berm, the bulk concentrated at the eastern end. They also described two conductor field telephone lines running the distance between the east ends of the northern and southern berms, as well as a number of spent cartridges believed to have been fired by military arms. They included five .30MI carbine cartridges (headstamped 1942 and 1943), which were used in the MI and M2 carbine (light rifle); and five .30-'06 Springfield cartridges (headstamped 1942), used in the M1 Garand, 1903 Springfield and variants, Browning Automatic Rifle, and Browning .30-caliber machine gun. In 2009 Cogstone resurveyed and recorded the site and noted that each parallel trench and berm is still present, as well as the concrete T-shaped targets. However, neither the telephone lines nor any spent cartridges were observed.

Concrete Water Reservoir and Metal Water Tanks (P-36-014462). This site consists of a concrete water reservoir and metal water tank. In 2008, the site was recorded as measuring roughly 70 feet long (SE–NW) by 42 feet wide (SW–NE) by about 5 feet deep. The feature was constructed by excavating a small amount of soil, putting down a concrete floor and walls with an interior slope, topping the walls with cemented decorative stones, and then piling dirt back on the finished sides to form a support slope. The site also exhibits a metal water tank about 6 feet across and 4 feet tall; this is located 75 meters to the northwest. Rusted metal pipes run downslope from the reservoir and water tank and likely onto former grape fields. The combination of concrete open-air reservoir and tank is common in the Inland Empire and represents attempts by locals and/or the California Conservation Corps to capture seep and spring water for local use. The reservoir was probably gravity fed from an upstream source. No date was observed on either feature. The site was relocated and the record updated in 2009 by Cogstone. The condition of the site is the same as when it was recorded in 2008, with the exception of an additional metal tank. This second 9-foot by 3-foot-3-inch tank is located next to the 6-foot by 4-foot tank and is on its side laying north to south. This feature was added to the site record.

Meyer Family Cemetery (P-36-021515). The presence of a small family cemetery with wooden crosses and a fence was reported by local residents but two separate archaeological surveys did not locate it. Interested local residents obtained historical photographs of family members standing at the cemetery and used the topography visible in the photographs to relocate the general area of the cemetery. In 2010 Cogstone

cleared the vegetation from this area and ground penetrating radar was used to look for subsurface remnants. Two rectangular features adjacent to one another were revealed. The features did not have air cavities associated with coffins but the earth was clearly disturbed. These may represent caving of the coffins (common with wood coffins) or may represent removal of the burials and infill of the graves.

Offsite

Possible Milling Slick (P-36-012968). In 2008, this depression on a small boulder was recorded as a possible milling slick. However, after reevaluation by Cogstone, this was determined to be natural, not cultural. The surface is rough and pitted, not smooth and slick. This resource is outside the current project boundaries.

Old Lady Meyer's House (P-36-014461). This house is about 890 square feet, with two bedrooms and one bath. The house is described as nondescript and plain, with an asphalt shingle roof and minor exterior features. Landscaping is typical of rural properties and includes pepper trees, pines, and eucalyptus. County Assessor records indicate construction was completed in 1958. The owner of the property, Mabel Meyer, is a descendent of Julius Meyer, who bought the property along with several other parcels in 1883. Most of the Meyers family in the Verdemont area farmed. By 1973 most of the other Meyer parcels had been sold, and "Old Lady Meyers House" was the last remaining Meyer parcel. This resource is outside the current project boundaries.

Rectangular Rock Alignment (P-36-014463). This site consists of a rectangular-shaped multicoursed foundation composed of large stones located within a very shallow drainage. Cogstone determined that the west wall measures 30 feet long, the north wall 33 feet long, and the east wall 23 feet long. While no southern wall is visible, a plan view map demonstrates that a south wall most likely existed at one point, as there is a fairly linear alignment of rocks completing the rectangular shape.

L-shaped Stone Alignment (P-36-014464). This site consists of a 5-foot-long alignment of stone perpendicular to an 18-foot-long stone alignment. The stones are angular and only partially imbedded in the soil. The function of the object and its age are unknown, as noted in a 2008 survey. Resurvey for the resource by Cogstone (2009) did not reveal the structure in full. A small alignment of stone was identified in the vicinity of the site location recorded by Dice (2008); however, only an "L-shaped" distribution of stones was observed and it appeared to be natural in alignment and not embedded.

Meyer Residence (P-36-007031). The Meyer House was first recorded in 1990. The initial recording only describes the site as a rock-and-mortar foundation with a cellar and trash scatter. Later research suggests the house was owned by Otto and Vera Meyer, but no further information about the site in terms of local history is noted except that the home was destroyed by a fire in the late 1960s. The 2004 study suggests that the house was probably built in 1917. The majority of the features of the site have remained the same since the initial survey in 1990.

The site is enclosed by lines of eucalyptus trees on the north and west. All that remains of the residence today is a low stone and concrete footing that is rectangular and encloses a cellar in the northwest quarter. A full-length elevated concrete porch spans the southern footing.

The full cellar (7 ft. deep) has an exterior entry at the northwest corner of the house and steps are still visible leading downward. The bathroom was located at the northeast corner of the house to judge by soil and lavatory drain pipes still present in this area. This observation is also supported by several heavy porcelain fragments observed around the pipes. A 2004 study suggests that, from the elevation of the footings and a vent opening in the eastern footing, the house had an elevated wooden floor and the elevation matched that of the porch deck. However, no evidence of the floor's supporting piers was observed. The porch itself bears

four rectilinear concrete piers with square, undecorated concrete caps. A low (1 ft.) rock wall east of the house was reported in 1990. In 1998, abandoned car parts were reported in the area but these were not reported in later surveys. The 2009 survey did reveal another rock wall running east to west just south of the front porch, parallel to the street. In addition, the 2009 survey determined that the location of the site as originally mapped was incorrect. The site is located on the east side of a dirt road and not the west as originally indicated.

Historical Resources

Based on the cultural resources studies, there are no intact standing historical structures within the project area.

Native American Consultation

The Native American Heritage Commission (NAHC) was consulted to determine if any known sacred lands exist in or near the project area. The NAHC responded that no sacred lands are known in the vicinity of the project site; however, it recommended that seven tribes or individuals be contacted for further information. Each tribe or person recommended by the NAHC was contacted by email or letter. No responses were received. However, this does not constitute SB 18 consultation, which is required by the City for any project that requires a General or Specific Plan amendment, such as this project.

Paleontological Resources

On January 23, 2009, and February 19, 2009, Cogstone conducted a paleontological field assessment for the original areas mapped and for the expanded road areas. Although there are several sedimentary formations that are old enough to contain the remains of extinct Pleistocene animals (older alluvial fans), all sediments observed onsite were extremely coarse. Materials were primarily sands and gravels up to large cobbles (12.8 cm–25.6 cm) and even boulders (> 25.6 cm). Sediment oxidation in these older deposits ranged from light brown to medium red. Typically in deposits of this type, the fossils deposited are either crushed by the cobbles in the stream channels or are weathered to nothing on the surfaces of the alluvial fans without being buried. Although there are several sedimentary formations that are old enough to contain the remains of extinct Pleistocene animals, these sediments are so coarse that they are not conducive to the preservation of significant fossil resources.

Regulatory Background

Federal, state, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 authorized the National Register of Historic Places and coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The National Register includes districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the act requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 review refers to the federal review process designed to ensure that historic properties are considered during federal project planning and

implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process, with assistance from State Historic Preservation Offices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items, such as human remains, funerary objects, sacred objects, or objects of cultural patrimony, to lineal descendants and culturally affiliated Indian tribes.

State

California Public Resources Code

Archaeological, paleontological, and historical sites are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code. In addition, cultural and paleontological resources are recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA.

- California Public Resources Code 5020–5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The Commission oversees the administration of the California Register of Historical Resources, and is responsible for the designation of State Historical Landmarks and Historical Points of Interest.

- California Public Resources Code 5024.1 establishes the California Register of Historical Resources (CRHR). The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks from No. 770 on. The criteria for listing are the same as those of the National Register. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources which must be given consideration under CEQA.

- California Public Resources Code 5079–5079.65 defines the functions and duties of the Office of Historic Preservation, which is responsible for the administration of federally and state mandated historic preservation programs in California and the California Heritage Fund.

- California Public Resources Code 5097.9–5097.991 provides protection to Native American historical and cultural resources, and sacred sites and identifies the powers and duties of the NAHC. It also requires notification of discoveries of Native American human remains, descendants and provides for treatment and disposition of human remains and associated grave goods.

California Senate Bill 18

Existing law provides limited protection for Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries, religious, ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological or historic sites, Native American rock art inscriptions, or features of Native American historic, cultural, and sacred sites.

Senate Bill 18, regarding Traditional Tribal Cultural Places (TTCP), was signed into law in September 2004 and went into effect on March 1, 2005. It places new requirements upon local governments for developments within or near TTCP. Per SB 18, the law requires local jurisdictions to provide opportunities for involvement of California Native American tribes in the land planning process for the purpose of preserving traditional tribal cultural places. The Final Tribal Guidelines recommend that the NAHC provide written information as soon as possible but no later than 30 days to inform the lead agency if the proposed project is determined to be in proximity to a TTCP and another 90 days for tribes to respond to a local government if they want to consult with the local government to determine whether the project would have an adverse impact on the TTCP. There is no statutory limit on the consultation duration. Forty-five days before the action is publicly considered by the local government council, the local government refers action to agencies, following the CEQA public review time frame. The CEQA public distribution list may include tribes listed by the NAHC who have requested consultation or it may not. If the NAHC, the tribe, and interested parties agree upon the mitigation measures necessary for the proposed project, they would be included in the project's EIR. If both the County and the tribe agree that adequate mitigation or preservation measures cannot be taken, then neither party is obligated to take action.

Per SB 18, the law institutes a new process which would require a city or county to consult with the NAHC and any appropriate Native American tribe for the purpose of preserving relevant TTCP prior to the adoption, revision, amendment, or update of a city's or county's general plan. While SB 18 does not specifically mention consultation or notice requirements for adoption or amendment of specific plans, the Final Tribal Guidelines advises that SB 18 requirements extend to specific plans as well, as state planning law requires local governments to use the same process for amendment or adoption of specific plans as general plans (defined in Government Code § 65453). In addition, SB 18 provides a new definition of TTCP requiring a traditional association of the site with Native American traditional beliefs, cultural practices, or ceremonies or the site must be shown to actually have been used for activities related to traditional beliefs, cultural practices, or ceremonies. Previously, the site was defined to require only an association with traditional beliefs, practices, lifeways, and ceremonial activities. In addition, SB 18 law also amended Civil Code Section 815.3 and adds California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

Local

City of San Bernardino General Plan

The project site is located within the City of San Bernardino sphere of influence. The project application, in part, requests that the site be annexed to the City. Upon annexation, all regulations in the City of San Bernardino General Plan, Development Code, and City Municipal Code will govern the future development of the project.

The City of San Bernardino General Plan, adopted in November 2005, establishes comprehensive goals, policies, and implementation measures to meet the City's future needs. Applicable goals and policies of the Historical and Archaeological Resources Chapter (Chapter 11) of the General Plan include:

Goal 11.1 Develop a program to protect, preserve, and restore the sites, buildings and districts that have architectural, historical, archaeological, and/or cultural significance.

Policies

11.1.2 Maintain and update the Historic Resources Reconnaissance Survey database files of historic, architectural, and cultural resources conducted in 1991, and integrate it into the City's ordinance

and environmental review process. Prior to public distribution, Native American tribes should be consulted to address any issues of confidentiality.

11.1.4 Compile and maintain an inventory, based on the survey, of the Planning Area's significant historic, architectural and cultural resources. Prior to public distribution, Native American tribes should be consulted to address any issues of confidentiality.

11.1.9 Require that an environmental review be conducted on all applications (e.g., grading, building, and demolition) for resources designated or potentially designated as significant in order to ensure that these sites are preserved and protected.

Goal 11.4 Protect and enhance our historic and cultural resources.

Policies

11.4.1. Encourage the preservation, maintenance, enhancement, and reuse of existing buildings in redevelopment and commercial areas; the retention and renovation of existing residential buildings; and the relocation of existing residential buildings when retention onsite is deemed not to be feasible.

11.4.2 Consider creating a program to relocate reusable older buildings from or into redevelopment projects as a means of historic preservation.

11.4.3 Utilize the Redevelopment Agency as a vehicle for preservation activity. The Agency is currently empowered to acquire, hold, restore, and resell buildings.

Goal 11.5 Protect and enhance our archaeological resources.

Policies

11.5.1 Complete an inventory of areas of archaeological sensitivity in the planning area. Prior to public distribution, Native American tribes should be consulted to address any issues of confidentiality.

5.4.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852), including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated the with lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be an historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

C-1 Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.

C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

C-3 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

C-4 Disturb any human remains, including those interred outside of formal cemeteries.

C-5 Be developed in a sensitive archeological area as identified in the City's General Plan.

These impacts will be addressed in the following analysis.

5.4.3 Environmental Impacts

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. Both scenarios are analyzed in this section to assess their respective impacts to cultural resources.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels and no additional surveys or studies pertaining to cultural resources were done for this area. The annexation would not contribute to impacts related to cultural resources.

A summary list of known sites within the project area is given in Table 5.4-1. These resources are described in more detail above. The significance of each resource, as it pertains to CEQA standards, is provided.

Table 5.4-1
Findings for Resources within Project Area

Site	Resource	1 – Impt Events	2 – Impt Persons	3 – Special Design	4 – New Info	Cogstone 2010 Report Findings
P-36-014965	Large Reservoir	no	no	no	no	Not significant
P-36-014964	Small Reservoir	no	no	no	no	Not significant
	Spring	no	no	no	possibly	Needs investigation
P-36-007030	Cable Canyon Complex	no	no	no	possibly	Needs investigation
P-36-014966	Muscupiabe Reservoir	no	no	no	no	Not significant
P-36-014967	Metal pipes	no	no	no	no	Not significant
P-36-014968	Target range	no	no	no	no	Not significant
P-36-014462	Concrete reservoir	no	no	no	no	Not significant
P-36-021515	Meyer Family Cemetery	no	no	no	possibly	Needs investigation

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.4-1: DEVELOPMENT OF THE PROJECT WOULD NOT IMPACT ANY HISTORICAL RESOURCES. [THRESHOLD C-1]

***Impact Analysis*:** The Spring Trails project area was assessed for historical resources during multiple surveys. During this assessment, no historical resources, as defined in Section 15064.5 of the CEQA Guidelines, were observed. There are no structures, buildings, or other built environment resources with historical value in the project area. Therefore, there are no known historical resources on the project site. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.4-2: DEVELOPMENT OF THE PROJECT WOULD IMPACT ARCHAEOLOGICAL RESOURCES. [THRESHOLD C-2]

***Impact Analysis*:** Eight historical archeological resources were recorded within the project area. A spring reported to have associated water features was noted in earlier surveys but obscured by vegetation in recent surveys. Most of the resources do not meet significance criteria under CEQA (see Table 5.4-1). However some sites have potential to have subsurface components that would yield information new to history. These sites require further investigation. Should those investigations yield CRHR-eligible archaeological materials, then destruction of those resources as a result of project construction would be a significant impact. Mitigation through archaeological data recovery would reduce impacts to less than significant.

The potentially significant resources are expected subsurface privies and trash features associated with Cable Canyon Ranch, in addition to both surface and possibly subsurface water features associated with the Cable Canyon Ranch spring.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.4-3: THE PROPOSED PROJECT COULD DESTROY PALEONTOLOGICAL RESOURCES OR A UNIQUE GEOLOGIC FEATURE. [THRESHOLD C-3]

Impact Analysis: According to the Cogstone Study, there are several sedimentary formations that are old enough to contain the remains of extinct Pleistocene animals; however, these sediments are so coarse that they are not conducive to the preservation of significant fossil resources. Additionally, the survey conducted by Cogstone Resource Management found no signs of any paleontological resources within the project area. However, an unanticipated discovery of paleontological resources during grading and excavation of the site could occur and result in paleontological resource impacts if not mitigated. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.4-4: GRADING ACTIVITIES COULD POTENTIALLY DISTURB HUMAN REMAINS. [THRESHOLD C-4]

Impact Analysis: The Meyer Family Cemetery site has been located using geophysical investigation, and two graves appear to be present. It is unknown whether the rectangular areas represent intact graves or removal excavations. Human skeletal remains are considered significant under CEQA for potential to yield information new to history. The site requires further investigation. Should those investigations yield CRHR-eligible archaeological materials, then destruction of those resources as a result of project construction would be a significant impact. Mitigation through archaeological data recovery would reduce impacts to less than significant. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

The Native American Heritage Commission was contacted and no sacred land was identified.

Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. The Health and Safety Code Section 7050.5 states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation…until the coroner…has determined…that the remains are not subject to…provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible…. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and…has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

IMPACT 5.4-5: THE PROJECT WOULD NOT BE DEVELOPED IN A SENSITIVE ARCHEOLOGICAL AREA, AS IDENTIFIED IN THE CITY'S GENERAL PLAN. [THRESHOLD C-5]

Impact Analysis: According to Figure 5.4-1, *Archaeological Sensitivities* (Figure 5.4-12 from the San Bernardino General Plan Update and Associated Specific Plans EIR), the project site is not located in an area of concern for archaeological resources. The figure contains areas of known resources or areas that could reasonably contain resources and which had demonstrable surface integrity as of November 1987. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.4.4 Cumulative Impacts

Future construction projects in the City of San Bernardino are required to undergo environmental review. If there is a potential for significant impacts on cultural or paleontological resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. Neither the proposed project nor cumulative development in accordance with the City's General Plan is expected to result in significant impacts to cultural or paleontological resources, provided site-specific surveys and test and evaluation excavations are conducted to determine whether the resources are unique archaeological or historical resources and appropriate mitigation is implemented prior to grading. Implementation of the appropriate mitigation measures would reduce cumulative impacts to a level of less than significant. This assessment of cumulative impacts pertains to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.4.5 Existing Regulations

- State Health and Safety Code Section 7050.5
- California Senate Bill 18

5.4.6 Level of Significance Before Mitigation

The following impact would be less than significant: 5.4-1 and 5.4-5

Without mitigation, the following impacts would be **potentially significant**:

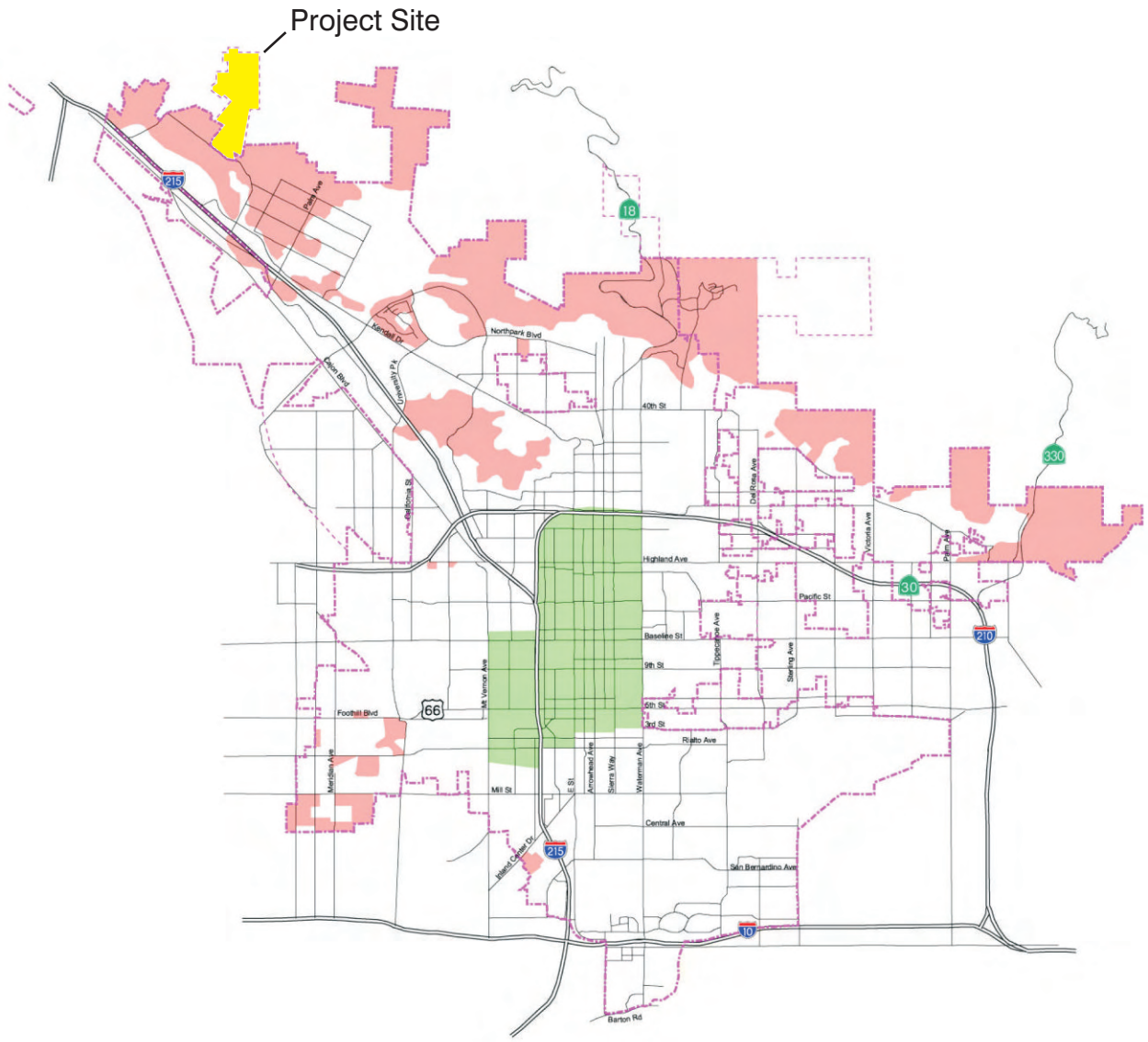
- Impact 5.4-2 Implementation of the project would destroy the Cable Canyon Ranch House complex.
- Impact 5.4-3 The proposed project could destroy paleontological resources or a unique geologic feature.
- Impact 5.4-4 Grading activities could potentially disturb human remains.

5.4.7 Mitigation Measures

Impact 5.4-2

4-1 Preconstruction archaeological testing by a qualified archaeologist is required to evaluate the significance of historic Cable Canyon Ranch. A qualified archaeologist must be present for grubbing, devegetation, and demolition of the spring, remnant stone structure, and fence to protect resources that may be revealed by these activities. Subsequent to vegetation removal but before construction, the archaeologist will perform controlled mechanical excavation inside and outside the house area to locate features present below the ground surface. Once located, the archaeologist should develop a formal treatment plan (plan of work including research questions to be answered and containing an agreement with an accredited repository). Excavation of subsurface features can include additional mechanical excavation or hand excavation as warranted by the features. Discovery of features and recovery of archaeological materials will require extensive sampling, documentation, laboratory work, identification, analysis, and interpretation. The final report should include formal evaluation and significance assessment of each feature and the project catalog and be filed with the City, the

Archaeological Sensitivities



Source: Kleinfelder 1997

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San Bernardino Archaeological Information Center, and the repository (San Bernardino County Museum recommended). The site records should also be updated.

4-2 If testing determines that the Cable Canyon Ranch complex meets significance criteria, then preconstruction archaeological data recovery excavations by a qualified archaeologist is required to mitigate the adverse impacts of construction on historic Cable Canyon Ranch. The archaeologist should develop a formal data recovery plan (plan of work including research questions to be answered and containing an agreement with an accredited repository). Excavation of subsurface features can include additional mechanical excavation or hand excavation as warranted by the features. Discovery of features and recovery of archaeological materials will require extensive sampling, documentation, laboratory work, identification, analysis, and interpretation. The final report should include the project catalog and be filed with the City, the San Bernardino Archaeological Information Center, and the repository (San Bernardino County Museum recommended). The site records should also be updated.

4-3 Construction grading in and around the Cable Canyon Ranch complex must be monitored by a qualified archaeologist to ensure that any subsurface features or refuse deposits that were not located during previous phases of archaeological work are found and evaluated. The City should refuse to issue a final occupancy permit until all mitigation is demonstrated to have been performed, including curation of the project documents and artifacts.

Impact 5.4-3

4-4 Cultural resources sensitivity training is required for all earth-moving personnel. This training will review the types of archaeological and paleontological resources that might be found, along with laws for the protection of resources. In the event of an unanticipated discovery, all work must halt within a 30-foot radius of the find. Work may not continue until the find has been evaluated by a qualified archaeologist or paleontologist, depending on the nature of the discovery. All discoveries require scientific samples and documentation, including a final report.



Impact 5.4-4

4-5 The applicant shall implement one of the mitigation measures outlined below to address anomalies found at the presumed location of the Meyers Family Cemetery. The applicant shall consult with the Meyers family descendents in the selection of the appropriate mitigation options for the Meyers Family Cemetery in conjunction with the proposed development. It shall be a high priority to implement an option that most closely meets the desires of the family to the extent feasible under the final approved development and grading plans.

In the event the final development and grading permits do not require grading or other disturbance of the anomaly sites, one of the following mitigation measures shall be implemented:

1. The burial site anomalies/remains shall remain undisturbed. This can be accomplished either by complete avoidance of the project area or alternatively by "capping" the site. Capping the site would involve scraping existing vegetation and providing up to two feet of compacted fill material over the site. No activity under this option shall excavate lower than one foot below grade to remove existing vegetation or soil. Replacement vegetation may be placed for future open space such as a park. Plans to cap the site shall be prepared and reviewed/approved by a certified archaeologist prior to the disturbance of the cemetery site

surface. In addition, a covenant in the deed shall restrict any future excavation within 25 feet of the anomalies.

2. The applicant shall coordinate with the Meyers family to facilitate excavation of the anomalies to determine if they represent coffins and, if so, to coordinate reburial at a private or public cemetery to be determined by the family. Under this option, preconstruction archaeological testing by a qualified archaeologist is required. The archaeological testing must consist of mechanical excavation of overburden and hand excavation near the anomalies to determine if they represent coffins. The excavation shall occur under the supervision of a certified archaeologist and a Meyers family representative. If the anomalies are demonstrated not to contain coffins, no further work will be required. If coffins are present, the family shall determine the desired deposition. This may include transfer of the undisturbed coffins for reburial or option 3 below. The applicant shall be responsible for the transport of relocating the remains for the family. If desired by the family, the applicant shall also be responsible for funding a family memorial plaque near to the original burial site.

In the event the site is not avoided as part of the final development and grading permits, and testing demonstrates that coffins are, in fact, present, the applicant shall implement option 2 or option 3 below:

3. A qualified archaeologist shall develop a formal treatment plan (plan of work including research questions to be answered). The excavation team shall include a qualified osteologist. Excavation may include mechanical excavation of overburden and hand excavation of human skeletal materials. The treatment plan should include an agreement with the Meyers family as to the disposition of any human skeletal remains. A final report shall include formal evaluation and the project catalog and be filed with the City and the San Bernardino Archaeological Information Center. The site record should also be updated.

4-6 If human remains are discovered at any time, the applicant shall follow guidelines addressed in California Health and Safety Code Section 7050.5. This requires that work in the vicinity must halt and the county coroner must be notified immediately. If the remains are determined to be Native American, the coroner will contact the Native American Heritage Commission. All discoveries require verification and documentation, including a final report.

5.4.8 Level of Significance After Mitigation

The existing regulations and mitigation measures above would reduce potential impacts associated with cultural resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to cultural resources have been identified.

5.5 GEOLOGY AND SOILS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Spring Trails project to impact geological and soil resources in the Devore area of unincorporated San Bernardino County, the sphere of influence of the City of San Bernardino, and the City of San Bernardino.

The analysis in this section is based in part on the following technical report(s):

- *Geotechnical Feasibility and Geologic Fault Study, 350 Acres, Martin Ranch Tentative Tract 15576, Devore Area, San Bernardino County, California*, Kleinfelder, May 28, 1997
- *Preliminary Geotechnical Investigation, Proposed Residential Development, 353 Acres, Martin Ranch Tentative Tract 15576, Devore Area, San Bernardino, California*, Kleinfelder, July 28, 2000
- *2007 California Building Code Seismic Design Parameters Proposed Martin Ranch Development, Devore Area of Unincorporated San Bernardino County (City of San Bernardino Sphere of Influence), California*, Leighton and Associates, June 17, 2009

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendices F1 through F3).

5.5.1 Environmental Setting

Geologic Setting

Regional Setting

The project site is on the southwestern slopes of the San Bernardino Mountains. The San Bernardino Mountains are in the eastern portion of the Transverse Ranges Geomorphic Province, an east–west trending series of steep mountain ranges and valleys that extend from Santa Barbara County in the west to central Riverside County in the east. This province is structurally complex and is traversed by several major fault zones, including the San Andreas, San Jacinto, Cucamonga, San Gorgonio Pass, Crafton Hills, Tokay, and Peters fault zones. The San Bernardino Mountains are the youngest of the eastern Transverse Ranges and are being actively elevated. The San Bernardino Mountains are surrounded by the San Andreas Fault and the Cajon Pass to the west, the San Andreas Fault and San Gorgonio Pass to the south and southwest, the Little San Bernardino Mountains to the east, and the Mojave Desert to the north.

Regional geology is dominated by right lateral faulting of the San Andreas Fault. The modern trace of the San Andreas Fault near the project site is the Cajon Pass-Mill Creek segment of the San Bernardino Strand. The San Bernardino strand passes through the southern part of the project site and extends roughly 37 miles from Cajon Pass to near Banning Canyon. The Cajon Pass-Mill Creek segment is characterized by conspicuous expression in landforms, simplicity, and abundant evidence of youthful activity. Such evidence includes scarps, sag ponds, and pressure and shatter ridges; linear vegetation; shallow groundwater backed up behind the fault; and alluvial fans and drainage lines that have been offset by the fault during Holocene and recent time, that is, within roughly the last 10,000 years. Maximum displacement of the San Bernardino Strand of the San Andreas is estimated at no more than three kilometers. The Holocene slip rate of the San Andreas Fault has been measured as 25 millimeters per year in the Cajon Pass area.

Project Site

Most of the site consists of a southwest-sloping alluvial terrace dissected on the west and east by Cable Canyon and Meyers Canyon, respectively. In the south-central part of the site the San Andreas Fault Zone forms a northwest-trending topographic break. The southeast and northern parts of the site are relatively steep hillsides. Slopes onsite range from about 10 to 15 percent toward the southwest in the central and southwest portions of the site, to 15 to 70 percent with steeply incised drainage areas on the balance of the site. Elevations onsite range from 2,010 feet above mean sea level (amsl) in the southeast portion of the site to 3,540 feet amsl in the northeastern part of the site, as shown on Figure 5.5-1, *Site Topography*. The site is surrounded to the south and southwest by an alluvial fan that has formed where Cable Creek and Meyers Creek flow out of the San Bernardino Mountains and into the Upper Santa Ana River Valley.

Geologic Units

Geologic units onsite include outcrops of the metamorphic rocks schist and gneiss in the northern part of the site, labeled *Gn* on Figure 5.5-2, *Geologic Map*. These rocks are mostly highly weathered, fractured, foliated,[1] and moderately hard.

Older alluvial deposits of late Pleistocene to early Holocene age[2] are found at depths below four to six feet below ground surface (bgs) in the central and southwest parts of the site, and are labeled *Qalo* on Figure 5.5-2. These soils are generally well consolidated and contain boulders, cobbles, and gravels within a matrix of silty sand and sand. On ridges within the site, there are late Pleistocene remnant alluvial surfaces consisting of poorly to moderately cemented, well-consolidated sands and silts with significant amounts of cobbles and gravels. Cobbles and gravels in soils on ridges consist of easily crumbled to hard granitic rock derived from the San Bernardino Mountains to the north. South of the San Andreas Fault, these materials were typically overlain by four to six feet of reddish colluvial material.[3]

In the central and southwest parts of the site, late to mid-Holocene alluvial deposits lie generally four to five feet thick over the Pleistocene sediments. These Holocene deposits are typically dry to slightly moist noncohesive cobbles and gravels within a sandy silt and silty sand matrix, and are labeled *Qal2* on Figure 5.5-2.

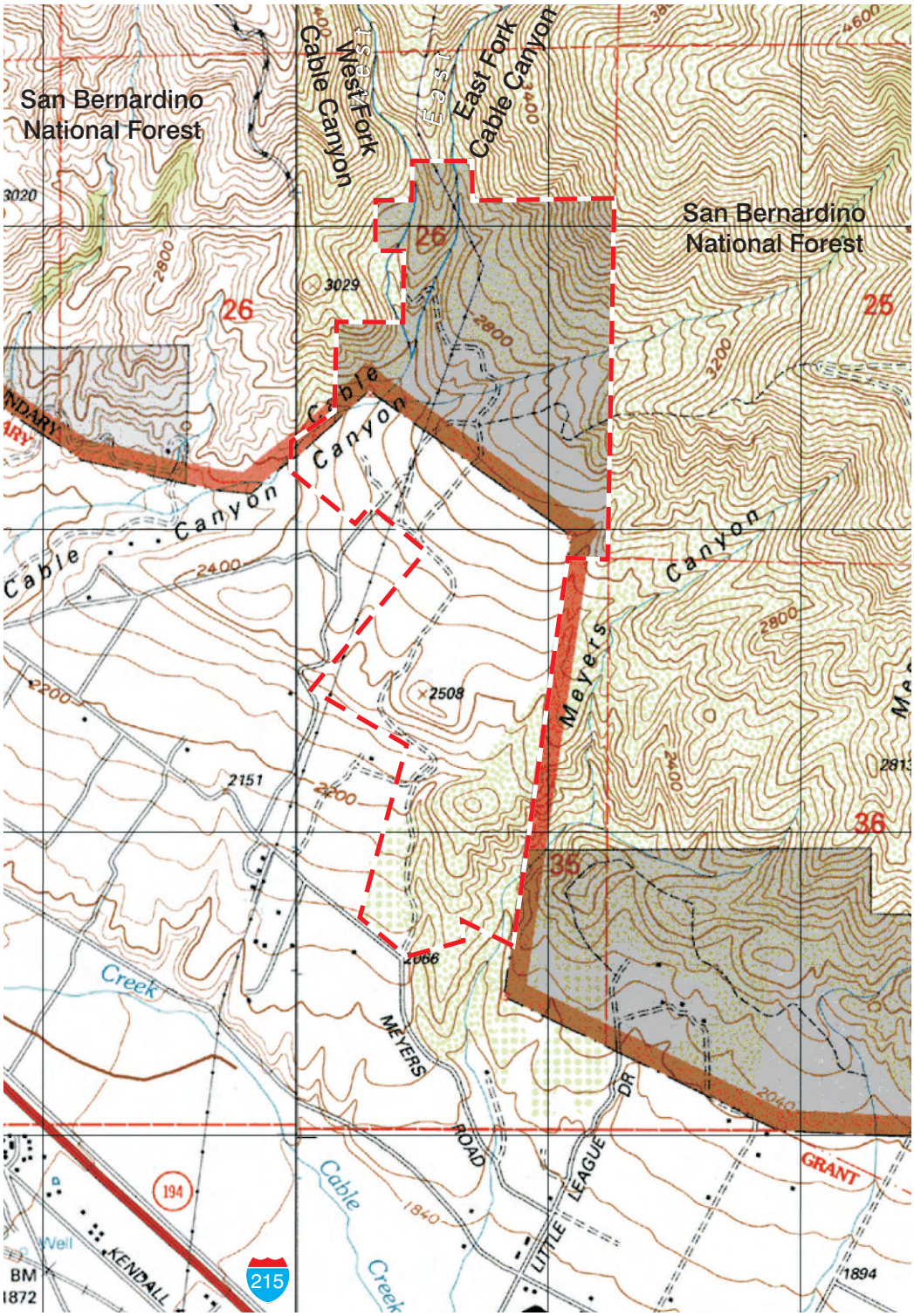
Recent alluvium, denoted *Qal1* on Figure 5.5-2, occurs in the active drainage areas of the site. This material consists of poorly to well-bedded deposits of cobbley gravelly sands and silts. This alluvium coalesces with *Qal2* alluvium and also overlies Pleistocene alluvium and metamorphic bedrock.

Groundwater

Generally, groundwater levels beneath the site are greater than 50 feet below ground surface (bgs). During the 2000 geotechnical investigation by Kleinfelder, 25 exploratory borings were excavated to depths of up to 40 feet bgs, and 18 test pits were dug to depths of up to 8 feet bgs. Evidence of groundwater was not observed in any of the test pits dug onsite to depths of up to 8 feet. However, recent alluvial deposits in Cable Canyon and Meyers Canyon, denoted *Qal1* on Figure 5.5-2, contain lush riparian vegetation and very moist soils, indicating shallow groundwater levels in the lower parts of these canyons. Groundwater was found in borings B-22 and B-23 at 20 feet bgs. These borings are in an isolated area in the eastern part of the site along the northeast side of the San Andreas Fault, which acts as a local groundwater barrier within the site.

[1] Sheet-like arrangement of minerals in a rock.
[2] The Pleistocene Epoch extends from roughly 10,000 years before present (ybp) to about 1.8 million ybp, and the Holocene Epoch extends from the present to about 10,000 ybp.
[3] Colluvium is sediment that falls to the base of a slope and then builds up there, such as talus or scree.

Site Topography



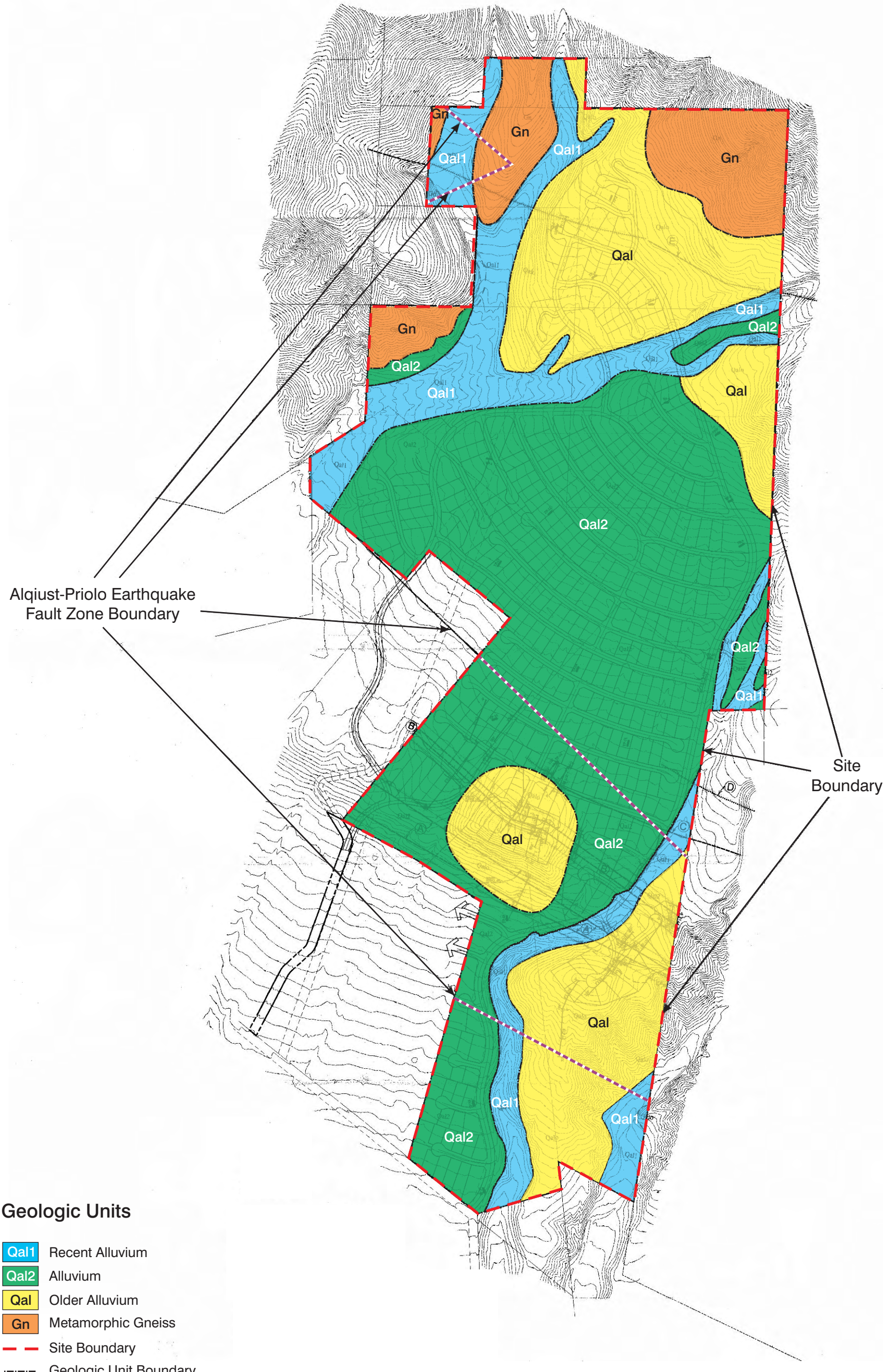
Site Boundary

0 1,600
Scale (Feet)

Source: Maptech 1997

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Geologic Map



Source: Kleinfelder Inc. 1997

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Geologic Hazards

Faulting and Seismic Hazards

Southern California is known to be seismically active. The amount of energy released by an earthquake determines the amplitude of the waves that the earthquake generates. The Richter scale is a logarithmic scale of the amplitude of earthquake waves as measured at a specific location. Each one-point increase in magnitude represents a 10-fold increase in wave amplitude and a 32-fold increase in energy. That is, a magnitude 7 earthquake produces 100 times (10 x 10) the ground motion amplitude of a magnitude 5 earthquake, and releases approximately 1,000 times (32 x 32) more energy.

San Andreas Fault

The central Transverse Ranges segment of the San Andreas Fault consists of four strands; from northwest to southeast these are the San Bernardino, Mill Creek, Wilson Creek, and Mission Creek strands. Together these four strands have generated about 100 miles of right-lateral displacement. The youngest of these strands, the San Bernardino Strand, extends about 37 miles along the base of the San Bernardino Mountains from Cajon Pass southeast to near Banning Canyon and has a well-documented Holocene slip rate of about one inch per year.

Four splays, or lineaments, of the San Andreas Fault have been identified onsite. The main splay is a zone ranging from roughly 50 to 150 feet wide, designated "A" on Figure 5.5-3, *Fault Splays on the Project Site*. The splay is a strong topographic break between younger alluvial soils and Pleistocene-age alluvium. There is a right-lateral drainage offset[4] about 700 feet in length in the southeastern part of the site. Five exploratory fault trenches were excavated across lineament A. Evidence of active faulting in these trenches included a rupture zone extending to the ground surface, a groundwater barrier with groundwater seepage, and offset sediment layers.

Lineament B is about 500 to 650 feet north of and roughly parallel to lineament A. Lineament B is on the north side of a knoll next to the northeast side of the San Andreas Fault. Eleven fault trenches were excavated across lineament B; evidence of active faulting was seen in 10 of the 11 trenches.

Lineament C trends west-northwest across the central part of the site, and is characterized by a subtle break in slope in foothills to the east and by irregular vegetation in the central portion of the site. Seven fault trenches were excavated across lineament C. In five of the trenches, depositional surfaces were observed over pre-Holocene fault scarps; however, no evidence of Holocene age displacement was observed.

Lineament D lies outside the Alquist-Priolo Fault Zone, partially running through the eastern edge of the project site.

Lineament E crosses the northern part of the site trending west-northwest. One fault trench was excavated across the trace. A small fracture was found in older sediments near the bottom of the trench, and is thought to be related to a deeper bedrock fault that may have caused the surface expression of Lineament E.

Other Regional Faults

A database search identified 31 active and potentially active faults within 62 miles of the project site. This entire list of faults is included in Appendix F3; the five faults that are considered to have the greatest potential

[4] Right-lateral offset is horizontal, with ground on the opposite side of the fault from the viewer appearing to have shifted to the right.

to cause strong ground shaking on the project site are listed in Table 5.5-1 and are shown in Figure 5.5-4, *Regional Fault Map*.

Table 5.5-1
Significant Faults near the Project Site

Fault Name	Approximate Distance from Site, miles	Maximum Earthquake, Moment Magnitude
San Andreas – San Bernardino Branch	Onsite	7.5
San Andreas – Mojave Branch	8	7.4
San Jacinto – San Bernardino Branch	3	6.7
Cucamonga	4	6.9
North Frontal – Western Branch	8	7.2

Source: Leighton and Associates, 2009.

As shown in Table 5.5-1, other than the San Bernardino Branch of the San Andreas Fault that passes through the project site, the faults that are capable of generating the strongest earthquakes at the project site are the Mojave Branch of the San Andreas Fault and the Western Branch of the North Frontal Fault.

Surface Rupture of a Fault

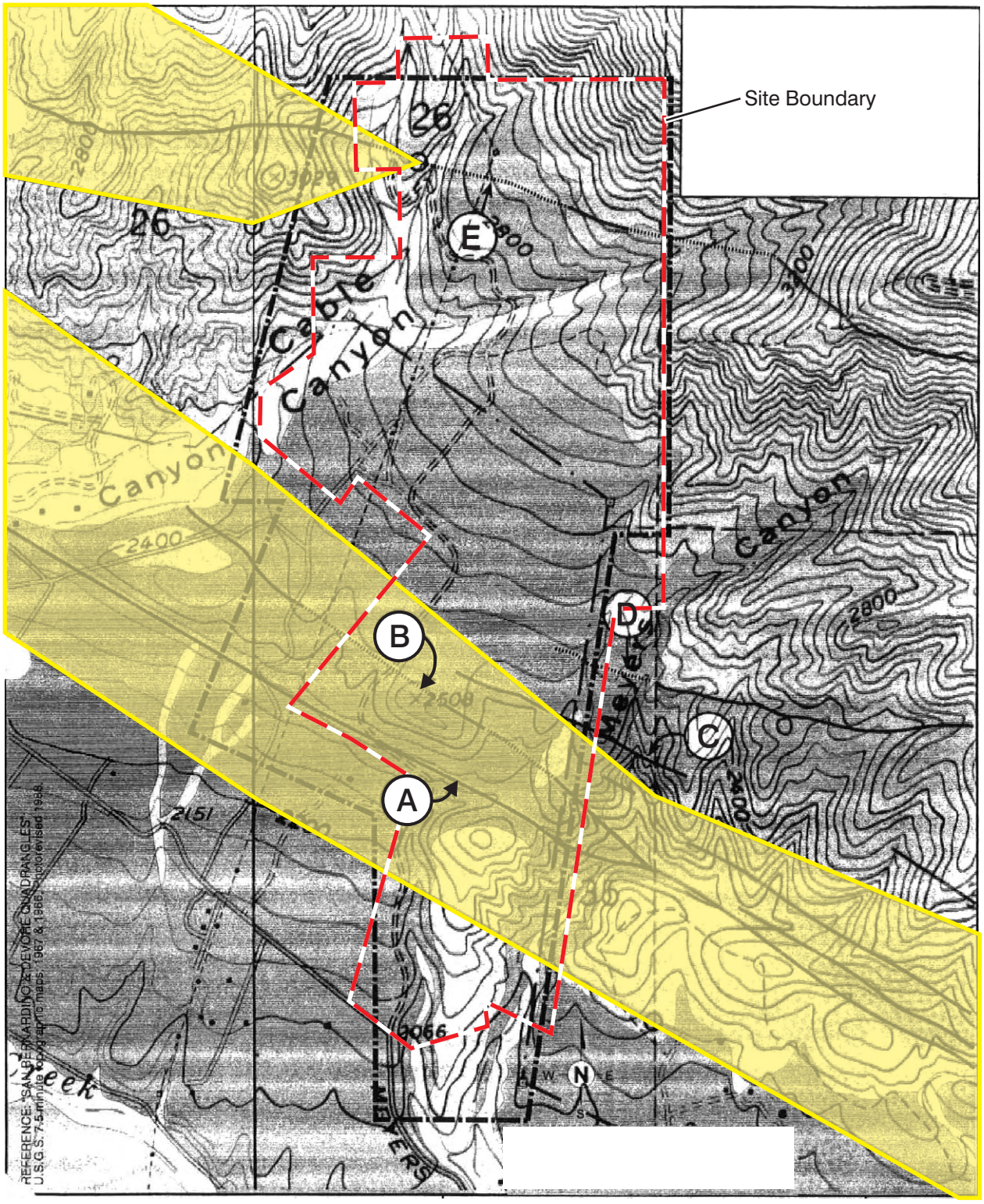
As evidence of active faulting was observed along lineaments A and B, and a small rupture in fault trench was observed along lineament E, surface rupture of a fault splay could occur onsite from an earthquake on the San Andreas Fault. The geotechnical investigation of the site recommended setback zones extending 50 feet from each side of lineaments A, B, and E.

Two portions of the site are within Alquist-Priolo Earthquake Fault Zones. The Alquist-Priolo Earthquake Fault Zone Act, described below under Regulatory Setting, requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." One of two zones on the site consists of much of the southern half of the site and includes lineaments A, B, and C; the second is in a portion of the northwest corner of the site and includes part of lineament E. Figure 5.5-3 shows these fault zones, which run northwest to southeast through the project site.

Strong Ground Shaking

The peak horizontal ground acceleration that could affect the site was estimated by Leighton and Associates using the computer program EZ-FRISK (see Appendix F3). The maximum considered earthquake is an earthquake with a 2 percent probability of exceedence at a site in 50 years, or an average return period of 2,475 years. The peak horizontal ground acceleration (PHGA) expected on the site in such an earthquake is 1.15 g, where g is the acceleration of gravity. An acceleration of 1.15 g corresponds roughly to an intensity of IX on the Modified Mercalli Intensity (MMI) Scale, which is a scale of how earthquakes are felt by people and how they affect structures (Wald 1999). The MMI Scale is a 12-point scale, ranging from Intensity I, which is rarely felt by people, to Intensity XII, in which damage to structures is total and objects are thrown into the air. In an Intensity IX earthquake damage is considerable in specially designed structures; well-designed frame structures are thrown out of plumb. Damage is great in substantial buildings, with partial collapse and buildings are shifted off foundations (USGS 2009). Seismic design parameters for the site were also determined by Leighton and Associates and are contained in Appendix F3.

Fault Splays on the Project Site



Site Boundary

Alquist-Priolo Earthquake Fault Zones

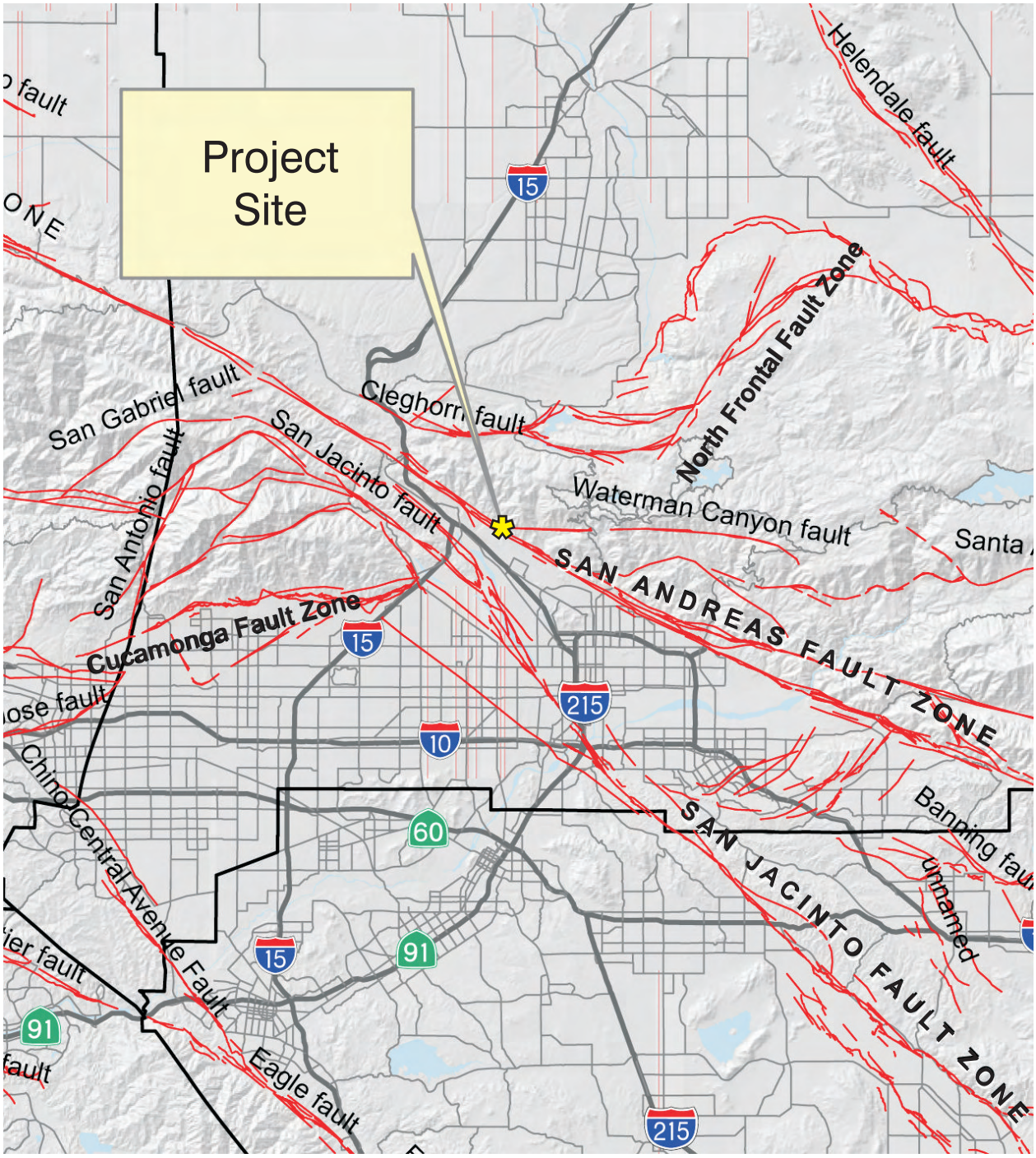
A Splay of San Andreas Fault

0 1,200
Scale (Feet)

Source: Kleinfelder 1997

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Regional Fault Map



Source: Leighton Group 2009

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Liquefaction

Liquefaction is the transformation of a granular material, usually a saturated sand, from a solid state to a weakened or liquefied state as a result of ground shaking. Sand that is shaken tends to become compacted. If water cannot drain from the sand, the compaction tends to increase water pressure in pores between the sand grains to such an extent that the sand loses strength and develops a liquefied state. In general, the more recently sediment has been deposited, the more susceptible it may be to liquefaction. In addition, liquefaction potential is greater in loose, poorly graded sands and silty sands. Other factors influencing susceptibility to liquefaction include shallow groundwater, confining stresses on sediments, soil density, and intensity and duration of ground shaking.

Generally, groundwater levels beneath the site are greater than 50 feet bgs. During the 2000 geotechnical investigation by Kleinfelder, 25 exploratory borings were excavated to depths of up to 40 feet bgs, and 18 test pits were dug to depths of up to 8 feet bgs. Evidence of groundwater was not observed in any of the test pits to depths of up to 8 feet. However, recent alluvial deposits in Cable Canyon and Meyers Canyon (*Qal1* on Figure 5.5-1) contain lush riparian vegetation and very moist soils, indicating shallow groundwater levels in the lower parts of these canyons. Groundwater was found in borings B-22 and B-23 at 20 feet bgs. These borings are in an isolated area in the eastern part of the site along the northeast side of the San Andreas Fault, which acts as a local groundwater barrier within the site.

With the exception of recent alluvial deposits in the southern part of the project site, the site is underlain by older (late Pleistocene to early Holocene age) alluvial/colluvial soils, which, together with probable deep groundwater, indicate a low liquefaction potential. An isolated area in the eastern part of the site along the northeast side of the San Andreas Fault is underlain by variable depths of apparent Holocene silty sands where groundwater is within eight feet of the ground surface. This area is considered susceptible to liquefaction and is shown in Figure 5.5-5, *Areas of Liquefaction Potential*.

Lateral Spreading

Lateral spreading is the downslope movement of surface sediment caused by both gravity and ground shaking and due to liquefaction in a subsurface layer. Such movement can occur on slope gradients of as little as one degree. Lateral spreading typically damages pipelines, utilities, bridges, and structures. The potential for lateral spreading on most of the site is considered to be very low, due to the low potential for liquefaction.

Seismic Settlement

Seismic events can trigger the settlement of soils, thereby lowering the surface elevation. This phenomenon can be increased when the weight of structures adds additional pressure to the ground. The subsurface soils on most of the site are relatively dense and thus are not expected to be prone to substantial seismic settlement.

Earthquake-Induced Landslides

The maximum gradient of the natural slopes on the site approaches 1.2:1 (horizontal:vertical). No surface indications of slope instability or significant “out of slope” geologic bedding conditions were observed. No significant natural slope instability exists.

Other Geologic Hazards

Expansive Soils

Expansive soils shrink or swell as their moisture content increases or decreases; this shrinkage or swelling may cause structures or pavements on such soils to settle or heave. Based on the nature of the soils under the site, the expansion potential of soils is thought to be low to very low.

Corrosive Soils

One sample of near-surface soil from boring B-17 was tested for potential for corrosion to concrete and reinforcing steel. These test results indicate a low to moderate potential for corrosion to concrete, and moderate potential for buried metals.

Collapsible Soils

A collapsible soil shrinks considerably when wetted, when a load is placed atop the soil, or under both conditions. Such shrinkage can damage structures built on the soil, or structures such as pipelines built within the soil. The potential for soil collapse is regarded as low due to the granular nature of the soils.

Ground Subsidence

Ground subsidence is usually a result of the withdrawal of groundwater or oil from an area. Leighton and Associates is not aware of substantial groundwater or oil withdrawals in the area that could lead to subsidence, and the potential for ground subsidence is regarded as low.

Regulatory Setting

State, regional, and local laws, regulations, plans, or guidelines related to geology and soils that are potentially applicable to the proposed project are summarized below.

State

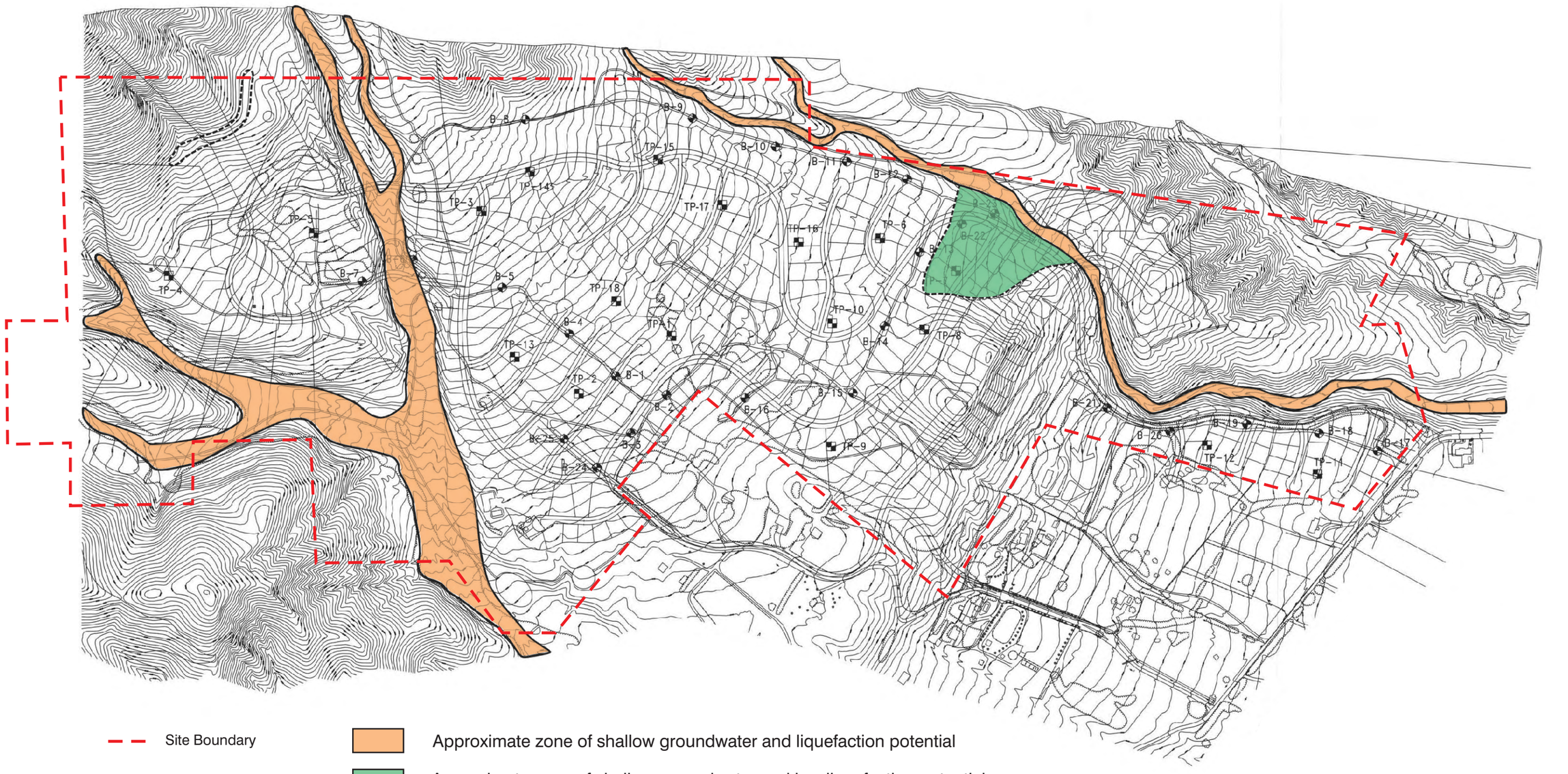
California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972, with its primary purpose to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The act also requires that cities and counties withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was adopted by the state in 1990 for the purpose of protecting the public from the effects of nonsurface fault rupture earthquake hazards, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey prepares and provides local governments with seismic hazard zones maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures.

Areas of Liquefaction Potential



Source: Lilburn Corporation 2006

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Uniform Building Code and California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the CBC within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission and the code is also known as Title 24 of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2007 version of the CBC, often with local, more restrictive amendments that are based upon local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and the public welfare by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system height, and the strength of ground motion with specified probability of occurring at the site.

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a Natural Hazards Disclosure Statement when the property being sold lies within one or more state-mapped hazard areas. If a property is located in a Seismic Hazard Zone, as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers. California law also requires that when houses built before 1960 are sold, the seller must give the buyer a completed earthquake hazards disclosure report and a booklet titled "The Homeowners Guide to Earthquake Safety" by the California Seismic Safety Commission.

General Permit for Stormwater Discharges Associated with Construction Activities

Pursuant to the federal Clean Water Act, in 2009 the State Water Resources Control Board (SWRCB) issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit construction sites with a disturbed area of one or more acres are required to control stormwater discharges by completing and filing a Notice of Intent (NOI) with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared prior to start of grading activities and must be implemented during construction. The SWPPP must list BMPs implemented on the construction site to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. The proposed project encompasses 352.8 acres and is therefore subject to the stormwater discharge requirements of the General Construction Permit. Prior to obtaining any grading permits, the project applicant must provide evidence of compliance with the General Construction Permit by providing a copy of the Waste Discharger's Identification Number to the City's Development Services Department.

City of San Bernardino

San Bernardino Municipal Code Sections 15.04.163 and Section 15.04.210: Grading

Chapter 15.04.163 states that a grading plan and a grading permit shall be required for any grading activity involving more than 50 cubic yards, and that all grading plans shall be prepared by a registered civil engineer. Chapter 15.04.210 incorporates Section 112 of Appendix J of the International Building Code into the City's Municipal Code.

San Bernardino Development Code Chapter 19.15: Foothill Fire Zones Overlay District

Chapter 19.15 of the City of San Bernardino Development Code includes standards for erosion control and for construction and development design, which are required in Foothill Fire Zones Overlay Districts.

San Bernardino Development Code Chapter 19.17: Hillside Management Overlay District

Chapter 19.17 of the City of San Bernardino Development Code includes development performance standards regarding soils and grading, geotechnical conditions, and preservation or reestablishment of vegetation on slopes, including graded slopes. Performance standards in Chapter 19.17 relevant to geotechnical and soils conditions are listed below.

Section 19.17.070 Development Performance Standards

1. Soils and Grading

A. Grading of any site shall conform to the following grading standards, based upon the percent of the natural slope. The City Engineer shall review and make recommendation to the Planning Commission on the proposed grading.

1. 0–15%. Redistribution of earth over large areas may be permitted.

2. 15+–25%. Some grading may occur, but landforms must retain their natural character. Padded building sites may be allowed, but custom foundations, split level designs, stacking and clustering is expected to mitigate the need for large padded building areas.

3. 25+–30%. Limited grading may occur, however, major topographic features shall retain their natural landforms. Special hillside architectural and design techniques are expected in order to conform to the natural land form, by using techniques such as split level foundations of greater than 18 inches, stem walls, stacking and clustering.

4. Greater than 30%. Development and limited grading can only occur in this category if it can be clearly demonstrated that safety, environmental, and aesthetic impacts will be avoided. Use of larger lots, variable setbacks and variable building structural techniques such as stepped or pole foundations are expected. Structures shall blend with the natural environment through their shape, materials and colors. Impact of traffic and roadways is to be minimized by following natural contours or using grade separations.

B. Grading shall be designed to:

1. Conserve natural topographic features and appearances by means of land sculpturing to blend graded slopes and benches with natural topography.

2. Retain major natural topographic features such as canyons and prominent landmarks.

C. All graded areas shall be protected from wind and water erosion through acceptable slope stabilization methods such as planting, walls, or netting. Interim erosion control plans shall be required, certified by the project engineer, and reviewed and approved by the Public Works Department.

D. Slopes created by grading of the site shall not exceed 50 percent or 2:1, without a soils report and stabilization study indicating a greater permissible slope; or shall not exceed 30 feet in height between terraces or benches; except that the Planning Commission may permit slopes

exceeding these dimensions where the slopes will result in a natural appearance and will not create geological or erosion hazards.

2. Geotechnical

1. Any subdivision within the Alquist-Priolo "Special Studies Zone" shall conduct a geologic study in conformance with the requirements of the Zone. This study shall be prepared by a certified engineering geologist.

2. No structure for human occupancy shall be permitted within 50 feet of an active or potentially active fault trace. Sensitive and high occupancy structures as defined in the General Plan shall maintain a minimum 100 foot setback.

3. No emergency facilities, community facilities, or places of general public assembly (not including open space areas) shall be permitted within the Alquist-Priolo Zone.

4. All structures within the trace shall require the seismic features of the structure to be reviewed and approved by a professional engineer specializing in seismic/structural design.

5. The Building Official may require special construction methods of structures where it has been determined to have potential geologic hazards.

6. A statement shall be included at the time of purchase agreement and at the close of escrow to the purchaser of each lot within the development, which informs the prospective owner of the potential for seismic activity, and the potential hazards.

3. Water/Drainage

B. Natural drainage courses should be protected from grading activity.

Laws and Regulations Governing Erosion into Stormwater

Construction of the proposed project would comply with best management practices (BMPs) that have the aim of reducing or eliminating soil erosion from construction sites. Common means of soil erosion from construction sites include water, wind, and being tracked offsite by vehicles. Compliance with these BMPs is required by the federal Clean Water Act and within the City of San Bernardino is administered by the NPDES Division of the City's Department of Development Services, pursuant to Chapter 8.80 of the San Bernardino Municipal Code.

5.5.2 Thresholds of Significance

According to the City of San Bernardino's environmental impact thresholds, a project would normally be determined to have a significant environmental impact related to geology and soils if the project would:

G-1 Involve earth movement (cut and/or fill) based on information contained in the Preliminary Project Description?

G-2 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death including:

i) Rupture of a known earthquake fault within an Alquist-Priolo Earthquake Fault Zone?

ii) Strong seismic ground shaking?

iii) Seismic related ground failure, including liquefaction?

G-3 Be located within an area subject to liquefaction as identified in the City's General Plan?

G-4 Be located within an area subject to landslides, mudslides, subsidence or other similar hazards including areas identified in the City's General Plan?

G-5 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

G-6 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

G-7 Modify any unique geological or physical feature based on a site survey/evaluation?

G-8 Result in erosion, dust, or unstable soil conditions from excavation, grading, fill, or other construction activities?

G-9 Development within Hillside Management Overlay District on slopes in excess of 15 percent?

The Initial Study, included as Appendix A, substantiates that impacts associated with Threshold G-6 would be less than significant; therefore, this impact will not be addressed in the following analysis.

5.5.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant geology and soil impacts of the proposed project. The applicable thresholds are identified in brackets after the impact statement.

In addition to the proposed development of the project site, the proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore the annexation would not contribute to impacts related to geology and soils.

Alternative (Overhead Electric Line) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. Both scenarios are analyzed in this section to assess their respective impacts to geology and soils.

IMPACT 5.5-1: ***THE PROJECT WOULD INVOLVE GRADING ON ABOUT 216.7 ACRES OF LAND, WITH ROUGHLY 3.1 MILLION CUBIC YARDS OF CUT AND 2.8 MILLION CUBIC YARDS OF FILL. PROJECT EARTH MOVEMENT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE EROSION OR DUST IMPACTS. [THRESHOLDS G-1 AND G-8 (PART)]***

Impact Analysis: Proposed site grading is described below in Table 5.5-2 and depicted in Figure 3-5, *Conceptual Grading Plan*, in Section 3, *Project Description*.

Table 5.5-2
Proposed Site Grading

Location	Cut Grading, Cubic Yards	Fill Grading, Cubic Yards[1]	Total Area Graded, Acres	Net Earthwork, Cubic Yards Deficit (–) or Surplus (+)
Project Site	2,700,000	2,700,000	193.0	---
Primary Access Road	171,000	55,000	4.2	+ 116,000
Secondary Access Road	244,000	109,000	19.5	+ 135,000
Total	3,115,000	2,864,000	216.7	+ 251,000

[1] Does not include shrinkage due to compaction of fill soils.

As shown above in Table 5.5-2, in addition to the specified amounts of cut and fill grading, the project would involve roughly 251,000 cubic yards of soil export. This quantity would be the same for the preferred development plan and the alternative (overhead electric lines) development plan since earthwork would be balanced on the project site under either scenario.

Project features are incorporated into the Spring Trails Specific Plan that would minimize soil erosion.

Project Features Regarding Soil Stability

Design Guidelines (Spring Trails Specific Plan)

- All graded slopes shall be stabilized and planted with the approved trees, shrubs, and groundcovers listed in the *Landscape Zones Plant Palette*, Table 3.6 in the Specific Plan Design Guidelines.

Development Standards

The Grading Plan in the Development Standards for the Spring Trails Specific Plan has been devised with overall goals, including minimizing grading quantities, minimizing slope maintenance and water consumption, and providing for stable slopes and building pads. Specific guidelines in the Grading Plan include:

- Minimize grading where possible.
- Avoid grading in areas where slopes exceed an average of 15 percent, to the greatest extent possible.
- Terrace drains and benches shall be added where slope height exceeds 30 feet, in accordance with the Uniform Building Code. In some instances, benches should be widened to provide for dual use as a recreation trail.

- Existing significant drainage courses shall be maintained as much as possible.
- Final grading design shall adhere to the final soils report recommendations.
- Grading shall be performed under the supervision of a registered soils engineer.
- Prepare and process a storm water pollution prevention program prior to grading.
- Preserve the natural terrain as much as possible by focusing development in the development footprint shown on Figure 3-3, *Development Plan*.
- Earth retention systems, where slopes can be planted to blend with the natural terrain, should be used where possible.
- All cut-and-fill slopes shall be revegetated to control erosion.

These guidelines would meet City and state development standards and soil stability would be maintained. In addition, the Safety Plan includes the following requirement pertaining to erosion control:

- Grading for building pads and roads shall conform to specifications of the geologist, based on a soils study and final geotechnical study.

Erosion Control Measures during Project Construction

In addition to the project guidelines and development standards described above, the project would prepare and implement a SWPPP specifying BMPs for minimizing pollution of stormwater during project construction. Categories of BMPs that would be included in the SWPPP include erosion control BMPs that cover and/or bind soil to prevent soil from entering runoff; and sediment control BMPs, such as barriers, that intercept and filter out soil that has been detached and transported by flowing water. Implementation of BMPs specified in the SWPPP would help stabilize project site slopes while vegetation planted by the project grows.

After implementation of project guidelines and development standards, and BMPs for erosion control and sediment control to be specified in the project's SWPPP, project development is not expected to result in substantial erosion.

IMPACT 5.5-2: THE PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO POTENTIAL SUBSTANTIAL ADVERSE EFFECTS FROM RUPTURE OF A KNOWN EARTHQUAKE FAULT. [THRESHOLD G.2i]

Impact Analysis: Five splays, or lineaments, of the San Andreas Fault have been identified onsite. Four of these splays are within Alquist-Priolo Fault Zones. Fault trenching studies onsite found evidence that three lineaments, A, B, and C, are active splays of the fault. The onsite segments of Lineaments A, B, and C are within an Alquist-Priolo Earthquake Fault Zone that covers much of the southern half of the site. The fourth lineament, lineament E, is within a second Alquist-Priolo Earthquake Fault Zone near the northwest corner of the site and part of the fifth lineament, lineament D, partially runs through the eastern edge of the project site, not in an Alquist-Priolo Fault Zone (see Figure 5.5-3, *Fault Splays on the Project Site*). Lineament E and D are not thought to be an active fault splays. Setbacks extending 50 feet from each side of the three active lineaments have been designated so that no structures would be built in the setbacks.

Additional investigation is recommended to confirm findings in Kleinfelder Associates' geotechnical studies (1997, 1998, and 1999), and trenching on the western part of Lineament A where trenching studies were not done previously in 1995.

Setbacks recommended by the project geotechnical consultant (Leighton Group) would be incorporated into the project design; compliance with such recommendations would be required conditions of approval by the City of San Bernardino. However, the proposed project presents potentially significant impacts related to the exposure of people and structures to known earthquake faults under both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.5-3: THE PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO POTENTIAL SUBSTANTIAL ADVERSE EFFECTS FROM STRONG GROUND SHAKING. [THRESHOLD G.2ii]

Impact Analysis: The San Andreas Fault passes through the project site, and several other faults in the region could potentially generate strong ground shaking at the site. The peak horizontal ground acceleration that could affect the site was estimated by Leighton Group. The PHGA that would occur during an earthquake with a 2 percent probability of exceedance in 50 years, that is, an average return period of 2,475 years, is 1.15 g where g is the acceleration of gravity. An acceleration of 1.15 g corresponds roughly to an intensity of IX on the MMI Scale. In an Intensity IX earthquake damage is considerable in specially designed structures; well-designed frame structures are thrown out of plumb. Damage is great in substantial buildings, with partial collapse, and buildings are shifted off foundations. The intensity of ground shaking used for the purpose of structural design is derived from the CBC and is provided in Appendix F3. The California Building Code (Title 14, California Code of Regulations, Part 2) contains seismic safety requirements for structures. Seismic safety provisions in the CBC are developed with the intent that most structures would remain standing during and after an earthquake so that occupants would be able to evacuate. Many structures would be expected to be substantially damaged in a strong earthquake and would require repairs before they would be habitable again (Buchiarelli 2009). This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.



IMPACT 5.5-4: ALTHOUGH PEOPLE OR STRUCTURES COULD BE EXPOSED TO POTENTIAL ADVERSE EFFECTS FROM SEISMIC-RELATED GROUND FAILURE SUCH AS LIQUEFACTION AND SETTLEMENT, THESE HAZARDS ARE LOW BECAUSE THE PROJECT SITE IS NOT IN A MODERATE OR HIGH LIQUEFACTION HAZARD ZONE IDENTIFIED IN THE CITY OF SAN BERNARDINO GENERAL PLAN. [THRESHOLDS G-2iii AND G-3]

Impact Analysis:

Liquefaction

The potential for liquefaction on most of the project site is considered to be low due to older alluvial/colluvial soils underlying the bulk of the site, plus the depth of groundwater, which is thought to be more than 50 feet bgs under most of the site. There are two limited areas of the site that are or may be susceptible to liquefaction: the lower parts of the Cable Canyon and Meyers Canyon drainages in the southern part of the site; and an isolated part of the eastern part of the site along the northeast side of the San Andreas Fault, where groundwater was found at 20 feet bgs in two borings.

The site plan almost entirely avoids placing homes over recent alluvium in the Cable Canyon and Meyers Canyon drainages. The geotechnical feasibility study for the project (Kleinfelder 1997) recommends removal

of loose or soft earth materials and undocumented fill to a depth of two to five feet below existing grades or two feet below the bottom of proposed footing depths, whichever is greater. Deeper removals are anticipated in isolated areas of the site, including the areas susceptible to liquefaction.

Additionally, the project site is not within a liquefaction hazard zone identified in the City of San Bernardino's General Plan.

Seismic Settlement

The subsurface soils under most of the site are relatively dense and thus are not expected to be prone to substantial seismic settlement. Near-surface soils may be settlement prone; however, near-surface soils under the sites of homes, roads, and other improvements would be removed and replaced with compacted fill. Seismic settlement may pose a hazard where loose soils have been found near the San Andreas Fault. However, development in this area would be limited to nonstructural improvements, and settlement-prone soils may be overexcavated to limit seismic settlement.

The analysis pertaining to liquefaction and seismic settlement described above is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.5-5 THE PROJECT SITE IS NOT SUBJECT TO SUBSTANTIAL HAZARDS FROM LANDSLIDES, MUDSLIDES, OR SUBSIDENCE. [THRESHOLD G-4]

Landslides

The maximum gradient of the natural slopes on the site approach is 1.2:1 (horizontal:vertical). No surface indications of slope instability or significant "out of slope" geologic bedding conditions were observed onsite. No significant natural slope instability exists onsite.

Proposed cut-and-fill slopes would be designed at grades of 2:1, with maximum slope heights of 80 feet. Such cut-and-fill slopes have been analyzed and found to be grossly stable. Some surficial slope instability should be anticipated due to onsite materials being generally granular. Cut slopes that expose bedrock will tend to weather over time and would be planted with deep-rooted vegetation.

Mudslides

A mudslide or mudflow is a type of landslide consisting of a mixture of water-saturated rock debris and soil with a consistency of wet cement. Mudflows occur on steep slopes where vegetation is not sufficient to prevent rapid erosion, but can also occur on gentler slopes. The site plan avoids the lower portions of Cable Canyon and Meyers Canyon, which could act as channels for mudflows. The site plan also avoids the steeper slopes near the northern end of the site. All cut-and-fill slopes created by the project would be vegetated, thereby controlling erosion and reducing mudflow hazard.

Subsidence

Ground subsidence is usually a result of the withdrawal of groundwater or oil from an area. Leighton and Associates is not aware of substantial groundwater or oil withdrawals in the area that could lead to subsidence, and the potential for ground subsidence is regarded as low.

The analysis pertaining to landslides, mudslides, and subsidence described above is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.5-6 THE EXPANSION POTENTIAL OF SITE SOILS IS LOW TO VERY LOW, AND PROJECT DEVELOPMENT WOULD NOT CREATE SUBSTANTIAL HAZARDS ARISING FROM EXPANSIVE SOILS. [THRESHOLD G-5].

Expansive soils are generally characterized as having the ability to undergo significant volume change due to increases or decreases in the moisture content of the soil. The Spring Trails site is predominated by relatively recent alluvial deposits (from the Holocene and Pleistocene age). These deposits have led to the existence of sands and sands with gravel in the upper layers (5 to 10 feet deep) and the gravelly sands (sand with silt, cobbles, and occasional boulders) of the lower layers (below 10 feet). These layers are generally medium dense to very dense throughout most of the site and have dry to moist conditions. The geotechnical analysis did not determine these soils to be prone to expansion. Therefore, the expansion potential of soils is low to very low. No specific geotechnical recommendations for expansive soils are required. The potential for expansive soils is the same under both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.5-7 PROJECT DEVELOPMENT WOULD MODIFY PART OF THE SAN ANDREAS FAULT, A UNIQUE GEOLOGICAL FEATURE. [THRESHOLD G-7]

The San Andreas Fault is considered to be a unique geological feature. The fault is a right-lateral strike-slip fault, meaning that motion on the fault is horizontal, with land across the fault appearing to move to the right of the viewer. The fault is a boundary between the North American and Pacific plates of the earth's crust. The Pacific Plate moves northward relative to the North American Plate (Harden 2004). The fault extends over 800 miles, trending northwest-southeast, from offshore of Cape Mendocino to the Mexican Border. Well-known major earthquakes that occurred on the fault include the 1906 San Francisco Earthquake and the 1857 Fort Tejon Earthquake; in addition, the Wrightwood Earthquake of 1812 may have occurred on the fault (SCEC 2009).

Five splays of the San Andreas Fault occur on the site, described in detail above in Section 5.5.1. The majority of the segment of Splay A on the site would remain open space, while the balance of the splay would be graded. Most of Splays B, C, and D would be graded, and most of Splay E would remain open space. The grading on Splays A, B, C, D, and E would not substantially change the physical and geological characteristics of the fault. Since the alternative (overhead electric lines) development plan would not change the grading of the project site, impacts would be the same for either scenario.

IMPACT 5.5-8 PROJECT GRADING AND CONSTRUCTION WOULD BE CONDUCTED SO AS NOT TO RESULT IN SUBSTANTIAL AMOUNTS OF UNSTABLE SOILS. [THRESHOLD G-8 (PART)]

Project features are incorporated into the Spring Trails Specific Plan that would prevent grading and construction activities from creating substantial amounts of unstable soils. For the purposes of this analysis, unstable soils are considered those arising from conditions such as collapsible soils, expansive soils, or seismic settlement. Soil instability related to erosion is analyzed separately under Impact 5.5-1, while impacts from erosion in the form of landslides are discussed in Impact 5.5-5. Soil instability arising from liquefaction is analyzed separately under Impact 5.5-4. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Project Features Regarding Soil Stability

Development Standards

The following development standards in the Grading Plan and Safety Plan of the Spring Trails Specific Plan would aid in preventing the creation of substantial amounts of unstable soils.

- Final grading design shall adhere to the final soils report recommendations.
- Grading shall be performed under the supervision of a registered soils engineer.
- Final grading plans shall be prepared and certified by a registered civil engineer and registered geotechnical engineer in the State of California Board of Professional Registration and approved by the City Engineer.

IMPACT 5.5-9 PART OF THE PROJECT WOULD BE DEVELOPED WITHIN A HILLSIDE MANAGEMENT OVERLAY ZONING DISTRICT. [THRESHOLD G-9]

Roughly 67 percent (133 acres) of the project site is within the Hillside Management Overlay District (HMOD), which covers all areas with slopes of 15 percent or greater. The HMOD contains development performance standards, including standards regarding soils and grading, geotechnical standards, and standards requiring that vegetation on slopes, including graded slopes, be preserved or reestablished; such standards are listed above in Section 5.5.1. Under either the preferred or alternative development plan, the project would be built and operated in compliance with the requirements of the HMOD that are described in Section 5.5.1.

5.5.4 Cumulative Impacts

Impacts to geology and soils are specific to the geologic and soils conditions on a particular project site. Mitigation of geologic, seismic, and soil impacts of development projects would also be specific to each site. Compliance with modern building standards, such as the UBC and CBC, serves to reduce seismic-related risks. Therefore, no adverse cumulative impacts related to soils and geology are anticipated. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.5.5 Existing Regulations and Standard Conditions

State

- California Building Code (Title 14, California Code of Regulations, Part B)
- Alquist-Priolo Earthquake Fault Zoning Act
- Seismic Hazards Mapping Act
- Natural Hazards Disclosure Act
- Statewide General Construction Activity Permit

City of San Bernardino

- Municipal Code Sections 15.04.163 and 15.04.210 (Grading)
- San Bernardino Development Code Chapter 19.17: HM (Hillside Management Overlay) District
- San Bernardino Development Code Chapter 19.15: FF (Foothill Fire Zones Overlay) District

5.5.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.5-1, 5.5-5, 5.5-6, 5.5-7, 5.5-8, and 5.5-9.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.5-2 Project development could expose people and structures to hazards from rupture of a known earthquake fault.
- Impact 5.5-3 Project development could expose people or structures to hazards from strong ground shaking.
- Impact 5.5-4 The project could expose people or structures to hazards arising from seismic ground failure, including liquefaction.

5.5.7 Mitigation Measures

Impact 5.5-2

5-1 Prior to recordation of final maps,additional fault studies shall be conducted to the satisfaction of the geotechnical consultant of record on the project and the City Engineer. These studies shall include:

1. Trenching across Splay E to locate the splay and gauge its activity in order to determine the required width of setbacks from the splay.
2. A trench across Splay A in the western part of the site to confirm the location of the splay in that part of the site and to aid in determining the width of required setbacks from the splay.
3. A trench between Splays A and B in the central part of the site.

If the geotechnical consultant recommends expanded or modified setbacks from faults based on the findings of such additional studies, then the project will be required to comply with such setbacks, and any lots that would not be developable according to the development standards of the Specific Plan will be eliminated prior to recordation of TTM 15576 or the associated phase of TTM 15576.

Impacts 5.5-3 and 5.5-4

5-2 Prior to recordation of final maps, a detailed design-level geotechnical investigation report shall be prepared and submitted with engineering grading plans to further evaluate liquefaction, seismic settlement, lateral spreading, subsidence, collapsible soils, corrosive soils, slope stability including earthquake-induced landslides, and other geotechnical constraints and provide site-specific recommendations to address such conditions, if determined necessary. The geotechnical reports shall be prepared and signed/stamped by a Registered Civil Engineer specializing in geotechnical engineering and a Certified Engineering Geologist. The project will be required to comply with any recommendations that are made in the report of such investigation.

5-3 For each phase of the project, at the completion of grading and before project construction begins, final geotechnical testing for corrosive soils and expansive soils shall be conducted. A final geotechnical report for the relevant phase shall be prepared and signed/stamped by a Registered Civil Engineer specializing in geotechnical engineering and a Certified Engineering Geologist. Such report shall contain recommendations to address corrosive soils and expansive soils, as determined necessary. The project will be required to comply with any recommendations that are made in the report of such investigation.

5.5.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with geology and soils to less than significant. Therefore, no significant unavoidable adverse impacts relating to geology and soils have been identified.

5.6 HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Spring Trails project (proposed project) to result in hazardous impacts in the project area and the City of San Bernardino. The analysis in this section is based in part on the following technical report:

- *Spring Trails Fire Protection Plan*, Fire Safe Planning Solutions, December 15, 2008.

A complete copy of this study is included in the Technical Appendices to this Draft EIR (Volume II, Appendix G).

5.6.1 Environmental Setting

The site of the proposed project is an approximately 352.8-acre hillside site in the unincorporated area of San Bernardino County, northwest of the City of San Bernardino community of Verdemont, and east of Devore. The project site is in the unincorporated sphere of influence of the City of San Bernardino and will be annexed into the City. The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. The area is adjacent to the west of the project site along Meyers Road and currently has four occupied, multiple-acre lots. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels.

Existing Land Uses

The project site is relatively undisturbed and consists of canyons and steep hillsides with gently sloping alluvial benches in between. The east and west forks of Cable Creek flow through the northwest portion of the property. A tributary to Cable Creek cuts across the northern section of the property from east to west. In the central and southwest portions of the property, the site slopes relatively uniformly to the southwest at 10 to 15 percent. The remaining portion of the site has relatively steep terrain (15 to 70 percent slope). The site elevation ranges from 2,010 feet above mean sea level (amsl) in the southern portion to 3,540 feet amsl in the northern portion.

The project site is vacant with the exception of one single-family residence in the western portion, south of Cable Canyon, and 115-kilovolt (kV) Southern California Edison (SCE) transmission lines running north to south across the site. Vegetation on the site has substantially recovered from several fires and supports a diversity of habitat types. The northern portion of the project site is in the San Bernardino National Forest, which is generally undisturbed open space. The site is also potentially seismically active; two segments of the San Andreas Fault cross the southern portion of the project site.

The adjacent 26.4-acre annexation area consists of six rural residential parcels, four of which are occupied with residences and related structures. Access to four of the parcels is from Meyers Road, with the remaining two obtaining access from Martin Ranch Road prior to entering the project site. There is no planned development for this adjacent area.

Fire and Wind Hazards

San Bernardino Foothill Fire Zones Overlay District

Chapter 19.15 of the City's Development Code established the Foothill Fire Zones Overlay District. The purpose of this district is to mitigate the spread of fire, minimize property damage, and reduce risks to public

health and safety. The overlay district consists of four foothill fire zones, which have different degrees of hazard based on slope, type of fuel present, and natural barriers.

- **Fire Zone A (Extreme Hazard)**: Fire Zone A is determined based on slope. Fire Zone A includes areas with slopes of 30 percent or greater.

- **Fire Zone B (High Hazard)**: Fire Zone B is also determined based on slope. Fire Zone B includes areas with slopes between 15 and 30 percent.

- **Fire Zone C (Moderate Hazard)**: Fire Zone C includes those areas with slopes of 0 to 15 percent.

- **Fire Zone C, Abutting Wildlands**: Fire Zone C, Abutting Wildlands, is defined as those lots on the perimeter of a tract that are adjacent to wildlands.

The project site has approximately 121 acres of Fire Zone A, 112 acres in Fire Zone B, and 119 acres in Fire Zone C (see figure 5.8-2 in Section 5.8, *Land Use and Planning*).

The foothill fire zones include applicable standards related to access and circulation, site and street identification, roadside vegetation, water supply, erosion control, and construction and development design. Included in these standards are the accessibility to a site, building construction features that are intrinsically safer in fire conditions, location and siting of structures in areas that are not prone to fire damage, vegetation management, and establishment of wet fuel modification zones (e.g., greenbelts).

Upon annexation of the project site (352.8 acres) and the adjacent 26.4-acre parcel of land into the City, the annexed areas would be detached from the San Bernardino County Fire Protection District and its Valley Service Zone.

Fire History

The project site has been exposed to wildfire due to the steep terrain and highly flammable chaparral vegetation of the foothills of the San Bernardino Mountains, in combination with its susceptibility to high winds. The California Department of Forestry and Fire Protection (CAL FIRE) has records of wildland fires dating to the beginning of the 20th century on the proposed project site. In the past, fire seasons generally had a pattern. In most areas, at least a decade would pass with few fires followed by a decade with many large fires. However, these estimated patterns are no longer used as planning tools due to extended droughts and potential effects of climate change. Large fires continue to occur at all times of the year in areas that have receptive fuel beds, in some cases burning several times every few years. The occurrence of the large fires also corresponds to periods of extremely high wind conditions.

In November 1980, the Panorama Fire burned through the site, leaving only the mature eucalyptus trees and vegetation in the canyon areas. In the fall of 2003, the Verdemont/Devore area, including the proposed project site, was burned by the Old Fire that started in Old Waterman Canyon in north San Bernardino and traveled west to the Interstate 15 (I-15)/Interstate 215 (I-215) interchange, immediately west of the project vicinity. The entire Spring Trails site was burned, with the exception of the extreme northern portion of Cable Canyon, altering the conditions of the site. Wildfires affected these same areas again in October 2007 when a fire at Martin Ranch Road and Meyers Road burned 123 acres (CAL FIRE 2007b).

Fire Plans

National Fire Plan

In 2000, the National Fire Plan was created as a cooperative, long-term effort of the United States Forest Service (USFS), Department of the Interior, and the National Association of State Foresters, to protect communities and restore ecological health on federal lands. A major component of the National Fire Plan was funding for projects designed to reduce fire risks to people and their property. A fundamental step in realizing this goal was the identification of areas that are at high risk of damage from wildfire, especially areas in wildland-urban interface zones. Federal fire managers authorized state foresters to determine which communities were under significant risk for wildland fire on federal lands. CAL FIRE undertook the task of generating the state's list of communities at risk. With California's extensive wildland-urban interface situation, the list of communities extends beyond just those on federal lands. The California Fire Authority identified 1,264 fire-threatened communities in California, including the City of San Bernardino (California Fire Alliance 2009).

California Fire Plan

In 1996, the State Board of Forestry and Fire Protection and CAL FIRE undertook a cooperative effort to create the California Fire Plan (CAL FIRE 2006). Through this effort CAL FIRE and the state board created a system that ranks the fire hazard of wildland areas using four main criteria: fuels, weather, assets at risk, and level of service (which is a measure of a fire department's success in initial-attack fire suppression). The fire hazard severity zone maps are currently being updated to include state responsibility areas and local responsibility areas (CAL FIRE 2009). Individual cells are ranked as having moderate, high, and very high fire hazard. The project site is currently in a Very High Fire Hazard Severity Zone (CAL FIRE 2007a) in a State Responsibility Area (SRA), that is, an area where the state bears financial responsibility for fire suppression. As required by state law, the SRA designation will be removed upon annexation of the site into the City. The City of San Bernardino Fire Department (SBFD) has an automatic aid agreement with the San Bernardino County Fire Department (SBCoFD) and is also a participating agency in the California Master Mutual Aid Agreement, in which participating local and state agencies agree to provide mutual aid in dealing with disasters including wildfire.

Wind Hazards

The project site is located in the foothills of the San Bernardino Mountains in an area that periodically experiences high wind velocities that vary according to season. The City of San Bernardino General Plan designates the project site in this high wind area. Winds in this area are most often driven by the dominant land breeze circulation system. Regional wind patterns are dominated by daytime onshore wind generated by the differences in temperature between the inland deserts and the cold water of the Pacific Ocean. The most significant wind problems occur at the canyon mouths and valleys extending downslope from the San Bernardino Mountains. The highest velocities are associated with downslope canyon and Santa Ana winds, which have been measured at 90 to 100 miles per hour.

The Santa Ana wind conditions are a reversal of the prevailing southwesterly winds and occur regionally during later summer to early fall. The Santa Ana winds are dry, warm winds that flow from the higher desert elevations in the north through the mountain passes and canyons, caused by high pressure systems in the western United States. As the winds converge and are channeled through the canyons, their velocities increase. In addition to damage that may be caused by high winds alone, the high winds also exacerbate brush fire conditions.

Hazardous Materials

Regulatory Setting

Various federal, state, and local regulations and programs regulate the use, storage, and transportation of hazardous materials. These regulations are summarized below.

Federal Regulations

Comprehensive Environmental Response, Compensation and Liability Act. The Comprehensive Environmental Response, Compensation and Liability Act of 1980 is a law developed to protect the water, air, and soil resources from the risks created from past chemical disposal practices. This law is also referred to as the Superfund Act and regulates sites on the National Priorities List, also called "Superfund sites."

Emergency Planning and Community Right-To-Know Act. The primary purpose of the Federal Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 is to inform communities and citizens of chemical hazards in their areas. Sections 311 and 312 of the EPCRA require businesses to report the location and quantities of chemicals stored onsite to state and local agencies. Under section 313 of EPCRA, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, pollution prevention measures, and chemical recycling activities. The EPA maintains the toxic release inventory database, which documents the information that regulated facilities are required to report annually.

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) is the principal federal law that regulates generation, management, and transportation of hazardous waste. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste.

Superfund Amendments and Reauthorization Act. In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title 5 of this regulation requires that each community establish a local emergency planning committee responsible for developing a plan for preparing for and responding to a chemical emergency. The emergency plan is required to include:

- an identification of local facilities and transportation routes where hazardous materials are present,
- the procedures for immediate response in case of an accident (this must include a community-wide evacuation plan),
- a plan for notifying the community that an incident has occurred,
- the names of response coordinators at local facilities, and
- a plan for conducting drills to test the plan.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The certified unified program agency (CUPA) is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with city departments and local and state agencies. The goals are to improve public and private sector readiness and to mitigate local impacts resulting from natural or human-made emergencies.

State Regulations

Hazardous Materials Release Notification. Many state statutes require emergency notification of a hazardous chemical release. These statutes include:

- Health and Safety Codes §§ 25270.7, 25270.8, and 25507
- Vehicle Code § 23112.5
- Public Utilities Code § 7673, (PUC General Orders #22-B, 161)
- Government Code §§ 51018, 8670.25.5 (a)
- Water Codes §§ 13271, 13272
- California Labor Code § 6409.1 (b)10

Requirements for immediate notification of all significant spills or threatened releases cover: owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. In addition, all releases that result in injuries or harmful exposure to workers must be immediately reported to the California Occupational Safety and Health Administration pursuant to the California Labor Code Section 6409.1(b).

Hazardous Materials Disclosure Programs. The unified program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs, which include hazardous materials release response plans and inventories (business plans), the California Accidental Release Prevention (CalARP) Program, and the underground storage tank program. The unified program is implemented locally by CUPAs. The CUPA with responsibility for the San Bernardino area is the San Bernardino County Fire Department.

Hazardous Materials Business Plans. Both federal and state regulations require businesses that handle more than a specified amount (reporting quantity) of hazardous material or extremely hazardous material to submit a hazardous material business plan to its CUPA.

Business plans must include an inventory of the hazardous materials at the facility. Businesses are required to update their business plan at least once every three years and the chemical portion of their plan every year. Also, business plans are required to include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release. In addition, identification of local emergency medical facilities, contact information for all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel are required.

Businesses that handle hazardous materials are required by law to provide an immediate verbal report of any release or threatened release of hazardous materials if there is a reasonable belief that the release or threatened release poses a significant present or potential hazard to human health and safety, property, or the environment. The CUPA is also charged with the responsibility of conducting compliance inspections of regulated facilities in San Bernardino County.

California Accidental Release Prevention Program. CalARP became effective on January 1, 1997, in response to Senate Bill 1889. CalARP aims to be proactive and therefore requires businesses to prepare Risk Management Plans, which are detailed engineering analyses of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of hazardous materials business plans under the unified program, implemented by the CUPA.

Leaking Underground Storage Tanks. Leaking USTs have been recognized since the early 1980s as the primary cause of groundwater contamination from gasoline compounds and solvents. In California, regulations aimed at protecting against UST leaks have been in place since 1983 (Health and Safety Code). This occurred one year before RCRA was amended to add Subtitle I requiring UST systems to be installed in accordance with standards that address the prevention of future leaks. The State Water Resources Control Board has been designated the lead California regulatory agency in the development of UST regulations and policy.

Older tanks are typically single-walled steel tanks. Many of these have leaked as a result of corrosion, punctures, and detached fittings. As a result, the State of California required the replacement of older tanks with new double-walled fiberglass tanks with flexible connections and monitoring systems. UST owners were given a 10-year period to comply with the new requirements. The deadline for compliance was December 22, 1998. However, many UST owners did not act by the deadline, so the state granted an extension for their replacement, ending January 1, 2002. The California Regional Water Quality Control Board in cooperation with the Office of Emergency Services, maintains an inventory of leaking underground fuel tanks in a statewide database.

Existing Conditions

The proposed site for Spring Trails is relatively undisturbed and contains one residential structure. There was some agricultural use on the site from the mid-19th century through 1989, though the site has remained fallow since. There have not been any reports of hazardous materials being used, transported, or released on the site, and it is not found on any lists of hazardous materials (USEPA 2009a; USEPA 2009b).

Emergency Management

The Disaster Mitigation Act of 2000, Section 322 (a–d), requires that local governments, as a condition of receiving federal disaster mitigation funds, adopt a mitigation plan that describes the process for identifying hazards, risks, and vulnerabilities, identifies and prioritizes mitigation actions; encourages the development of local mitigation; and provides technical support for those efforts. In response to this and the requirements of the State of California Office of Emergency Services and the San Bernardino County Office of Emergency Services, the City has prepared the San Bernardino Hazard Mitigation Plan.

The City also has an emergency management plan that details the functional responsibilities and interactions of the federal, state, and local governmental agencies as well as private organizations in the event of natural and/or human-related disasters. Included within the natural disaster category are earthquakes, geologic hazards, floods, and fires. Potential human-related disasters include hazardous materials incident, nuclear attack, and transportation-related accidents.

For response to hazardous materials incidences, the SBFD has a hazardous materials response team specially trained and equipped to handle hazardous materials releases that have adverse effects on lives, the environment, and property within the City of San Bernardino. In the event that the SBFD determines that there is a greater need for response, they may call on the services of the hazardous materials team of the County Environmental Health Department.

Southern California Edison Transmission Line

SCE has three overhead electric transmission lines running in parallel that traverse the western portion of the site in a southerly to northerly direction. Figure 3-3a, *Alternative (Overhead Electric Line) Development Plan* in Chapter 3, *Project Description*, shows the alignment of the lines through the site. All three lines are 115

kilovolts (kV). SCE also has an access easement over the project site to service these transmission lines and uses entry locations along unimproved roads to access and traverse the project site.

Applicable Plans, Policies, and Regulations for Public Infrastructure

Southern California Edison

In the event that the overhead electric lines on the Spring Trails project site are moved underground or relocated within the project site, Southern California Edison requires the following information to proceed with the relocation of their electric transmission facilities:

1. Cover letter stating the scope of the project, owner's or developer's name, contact name, mailing address, and phone numbers.
2. Construction schedules and needed completion date.
3. Third Party Authorization letter from the property owner indicating who has been retained to act on their behalf, if applicable.
4. Six (6) full sets of final approved plans (1"=40') with the following information:
    a. All SCE facilities identified including:
        - Grading
        - Street improvements (including signage. Street improvement plans must include profiles of finished street surface elevations
        - Street lights
        - Traffic signal
        - Utilities (wet and dry)
        - Landscaping and irrigation
    b. Plotted existing SCE poles, including pole numbers, which are located on each pole at eye level on a vertical, aluminum strip
    c. All easements should be clearly identified and marked on the plans. Any SCE easement documents should be provided if available
    d. All pad mounted equipment should be identified.
5. For relocations, SCE required all plan be sent on compact discs using ACAD as the format without cross-referencing drawings. Requests must be accompanied by one of copy of the recorded tract map when it becomes available.
6. Provide a copy of the Storm Water Pollution Prevention Plan (SWPPP).

SCE would continue to require access to the transmission line easement in perpetuity.

California Public Utilities Commission

In the event that the overhead electric lines on the Spring Trails project site are moved underground or relocated within the project site the following CPUC review processes may apply:

- A review of project need and costs is required for relocation of transmission facilities larger than 50kV (CPUC General Order 131D),

- An environmental review for relocations larger than 2,000 feet pursuant to CEQA. The Spring Trails Draft EIR provides a description of an alternative plan for the relocation of SCE's electric transmission facilities and may be exempt from this provision. SCE would review the Draft EIR during the public review period to determine if the Spring Trails project would be exempt.

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-2 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.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

H-5 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 result in a safety hazard for people residing or working in the project area.

H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

H-9 Expose persons or property to significant risk, injury, or death involving high winds.

The Initial Study, included as Appendix A1, substantiates that impacts associated with the following thresholds would be less than significant: H-3, H-4, H-5, and H-6

These impacts will not be addressed in the following analysis.

5.6.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for potentially significant hazard impacts disclosed in the initial study for the proposed project. The applicable thresholds are identified in brackets after the impact statement.

A land use proposal has not been submitted for the adjacent 26.4-acre area to be annexed as a part of this project, and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore the annexation would not contribute to impacts related to hazards or hazardous materials except where specifically stated below.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the SCE overhead electric lines that traverse the western portion of the site will be located underground, In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. Both scenarios are analyzed in this section.

IMPACT 5.6-1: PROJECT CONSTRUCTION AND OPERATION WOULD INVOLVE THE TRANSPORT, USE, AND/OR DISPOSAL OF HAZARDOUS MATERIALS. [THRESHOLDS H-1 AND H-2]

Impact Analysis: The proposed project includes 307 single-family lots. The lots would consist of 306 new single-family lots and one existing single-family residence in the western portion of the site, bordering Cable Canyon Creek to the south. If the existing single-family home were to be demolished prior to project construction, it may result in the need to transport and dispose of hazardous materials. However, it is anticipated to remain during and after development of the proposed project and therefore no demolition activities are anticipated.

In general, the routine transport, use, or disposal of hazardous materials is associated with industrial land uses and not residential land uses. The project would consist only of residential land uses with associated parks and open space. Construction and operation of the new single-family homes may include the use of hazardous substances such as paints, solvents, finishes, and cleaners, but these substances would not be substantially different from other household products.



Additionally, the site has not been included on any state or federal lists of hazardous materials sites so the development of the site would not necessitate the removal or cleanup of any hazardous materials. Therefore, it is not anticipated that construction or operation activities would involve inadvertent exposure to hazardous materials due to their removal from the site. The routine transport, use, and/or disposal of significant amounts of hazardous materials is not expected to occur during the construction or operation of this project. Since there would not be any substantial amount of hazardous materials present on the project site for a significant amount of time during project construction or operation, there would also not be any foreseeable upset or release of hazardous materials.

Potential sources of pollutants from construction activities on the site include construction materials and construction equipment. The use of materials such as fuels, solvents, and paints present a risk to surface water quality due to an increased potential for these materials and related pollutants to contaminate stormwater. Additionally storage, refueling, and maintenance of construction equipment onsite result in the potential for fuels and other substances to contaminate stormwater. The impacts and measures for reducing potential pollution from construction activities are discussed further under Impact 5.7-4 in Section 5.7.3 of this EIR.

This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.6-2: PROJECT DEVELOPMENT WOULD NOT INTERFERE WITH AN EMERGENCY RESPONSE OR EVACUATION PLAN. [THRESHOLD H-7]

Impact Analysis: The City has an emergency management plan and a hazard mitigation plan that outline the potential risks, hazards, and emergency situations that the City may face and the best methods for preventing or managing these situations. The emergency management plan and the hazard mitigation plan, which have been developed in compliance with the Disaster Mitigation Act of 2000, are used by the City to reduce and eliminate the effects of natural and human-caused disasters (San Bernardino 2005a). Spring Trails would follow the guidelines and regulations of the City's emergency and hazard mitigation plans.

In addition, since the site has high potential for fires, there is substantial need for fire emergency access. The Spring Trails Specific Plan includes measures that would allow the site to be accessible during fire emergencies and which can be applicable for other emergencies. These are outlined in the City's Foothill Fire Zone Overlay District requirements, and Spring Trails' compliance with these standards is substantiated in Appendix D of the Specific Plan and in Section 5.14, *Transportation and Traffic* (Table 5.14-7), of this Draft EIR. The adjacent 26.4-acre annexation area would follow the guidelines and regulations of the City's emergency and hazard mitigation plans.

The proposed development and the adjacent 26.4-acre annexation area would not conflict with the City's emergency planning. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.6-3: THE PROJECT SITE IS IN A VERY HIGH FIRE HAZARD ZONE AND COULD EXPOSE STRUCTURES AND/OR RESIDENTS TO FIRE DANGER. TWO LOTS (LOTS 30 AND 233) WOULD NOT HAVE SUFFICIENT SPACE FOR FUEL MODIFICATION. [THRESHOLD H-8]

Impact Analysis: The entire Spring Trails project site and the adjacent 26.4-acre annexation area is in a very high fire hazard severity zone as identified in the California Fire Plan (CAL FIRE 2007a). The City's General Plan also identifies areas of very high and high fire hazards in the areas immediately adjacent to the project site. Since the project site has not yet been annexed to the City, the portions of the fire hazard zones that would lie across the project site and the adjacent 26.4-acre annexation area are not indicated in the General Plan. Periodic wildfire is a normal part of the environment in those areas along the front of the San Bernardino and San Gabriel mountains and in the adjacent San Bernardino National Forest, which surround the northern, western, and eastern portions of the site. When the winds are high, there is a risk of the fire spreading out of control and burning the project residences and existing residences in the adjacent 26.4-acre annexation area. The residences in the 26.4-acre annexation area would be subject to all applicable rules and regulations regarding fire safety found in the San Bernardino Municipal Code. A risk analysis for the project was performed by FireSafe as part of their Fire Protection Plan (Appendix G) and is summarized here. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Fire Threat Analysis

Due to the steep terrain, highly flammable chaparral vegetation of the foothills of the San Bernardino Mountains, and exposure to high-velocity winds, the site has high susceptibility to fire.

Construction of the proposed project would expose future project residents and structures to potentially dangerous wildfire(s) from the wildland to the northeast, northwest, and/or the southwest. The northeast exposure is a mix of chaparral and a few larger trees with a topography that is primarily upslope from the

structures, with only a small amount level or downslope. This area is at risk for fire mainly when a northeast (Santa Ana) wind passes. The topography and fuel would otherwise drive fires away from the project area.

The southeast exposure also consists of mixed chaparral. However, it has no real northern aspects to the topography that would increase fuel loading, and also has no wind shelter. Additionally, this area does not tend to have the old-growth, closed-canopy fuel type found in the other areas adjacent to the project site. Areas within this exposure immediately to the east of the project site that may contain fuels are either in the drainage bottom or would be graded and replanted with appropriate vegetation. Fuels that would remain after project development would be mostly in the downstream drainage of Meyers Canyon and outside of the fuel modification zones that would be created. A northeast wind event would take fire away from the structures in this area. The only potential wind-driven fire in this area that would pose a significant risk would be from a heat-generated onshore wind. While these winds may prevail in this area, they tend to be less intense and generally higher in moisture content.

The southwest exposure runs across a combination of developed and open, undeveloped land. Fires originating offsite in this area would be fueled by mixed native/nonnative grass and shrublands. The fire would approach the project site from the southwest and could spread and intensify if it reached the tree canopies under future conditions if vegetation is not managed. Compliance with current City standards for weed abatement and brush clearance should keep this area safe. The southwest exposure only presents fire issues during a southwest wind event, which, like the southeast exposure, tends to be less intense and generally higher in moisture content.

The northwest exposure is the most significant risk to the project. During a northeast wind, the Cable Creek drainage and Cable Canyon Creek will channel winds and fire down to the area below the project site. This drainage is deep and full of native and nonnative vegetation that has survived through all of the recorded fire history because it tends to receive natural irrigation year-round. However, the vegetation on the sides of the drainage is primarily northern mixed chaparral and Riversidian sage scrub, both of which provide substantial fuel beds.

In addition to the topography and vegetation of the area, two prevailing wind events common to the area also contribute to the fire risk. The Santa Ana winds and winds produced by the thermal heating in the Mojave Desert would both be channeled by canyons in the area, increasing and concentrating the effects of these winds.

Fire Risk Factors

The Computer Fire Behavior Prediction and Fuel Modeling System (BEHAVE) was used to model possible wildland fire behavior that could occur at the project site based on characteristic features, including topography, vegetation, and weather. The model measures the intensity of a fire moving toward the project site. It describes the fire behavior only within the flaming front of the fire and assumes a combination of dead and live fuels in the fire's path. Dead fuels are dry, dead vegetation and live fuels are living vegetation (either herbaceous or woody). Dead fuel less than 0.25 inch in diameter, or fine fuel, is the primary moving force in fires. Live or dead fuels larger than 0.25 inch contribute to fire intensity, but not necessarily to fire spreading. The model bases calculations and descriptions on a wildfire spreading through surface fuels that are on the ground and within six feet of the ground.

The inputs entered into the BEHAVE model to determine fire risk for the proposed project represent a fire with Santa Ana winds reaching 70 miles per hour and a combination of dead and live fuels that would cause the hottest, fastest-moving fire. These conditions would be a worst-case scenario and are detailed in Table 5.6-1.

Table 5.6-1
BEHAVE Model Inputs

One-Hour Fuel Moisture	10-Hour Fuel Moisture	100-Hour Fuel Moisture	Live Woody Moisture	20-Foot Wind Speed Upslope	Air Temperature
3%	4%	5%	60%	70 mph gusts 35 mph Midflame	85° F

Source: Firesafe 2008.
Notes:
One-hour fuel: fuels less than a quarter-inch in diameter
10-hour fuel: fuels between one-quarter and one inch in diameter
100-hour fuel: fuels between one and tree inches in diameter (NWCG 2011)

Table 5.6-2 shows the results of the worst-case wildfire scenario modeled at the maximum slope of 120 percent for the project site. As shown, the maximum anticipated flame lengths would be approximately 100.3 feet. This type of fire occurs in the fall in chaparral vegetation, with approximately 16 tons per acre, at 6 to 10 feet in depth, producing 8,000 British thermal units per pound (BTU/lb) of fuel. Additionally, under worst-case scenario conditions, fire would spread at a rate of 40 feet per second (27.2 miles per hour), and spotting distances would reach approximately 1.4 miles.

Table 5.6-2
BEHAVE Model Results

Flame Length	Rate of Spread	Spotting Distance Downwind	Fireline Intensity
100.3 Feet	27.2 mph (40 feet/sec)	1.4 miles	127,104 btu/ft/s

Source: Firesafe 2008.

Fuel Modification Plan

The project site has a combination of high risk (number of ignitions), high hazard (intensity of fire), and high value (proposed development), requiring significant mitigation measures in order to reduce fire risk. A fuel modification zone would be required to reduce impacts of fire on the proposed project. An important component of a fire protection system is the fuel modification area (building sites adjacent to wildland areas). Fuel modification areas are designed to gradually reduce fire intensity and flame lengths from advancing fire by placing thinning zones, restricted vegetation zones, and irrigated zones adjacent to each other on the perimeter of all structures and adjacent open space areas.

Fuel Modification Zones

Three fuel modification zones have been established within the fuel modification area.

Fuel Modification Zone A (flat): Noncombustible construction

This applies to the 20 to 35 feet of the flat area setback zone near noncombustible construction only. Fuel Modification Zone A should be maintained by the homeowner or the Homeowners Association (HOA). At no time should the Fuel Modification Zone A be less than 20 feet.

Fuel Modification Zone B (wet zone): 100 percent removal of undesirable plant species

Beyond Zone A, Zone B applies to the area that is 50 to 200 feet from the property line. Fuel Modification Zone B shall be permanently irrigated; fully landscaped with approved drought-tolerant, deep-rooted, moisture-retentive material such as container shrub material; or hydroseeded per a plant list approved by the SBFD. All undesirable plants must be removed. A complete list of undesirable plant species is supplied in Appendix G, *Spring Trails Fire Protection Plan*. Hand-seeding of bare areas may need to be performed six months after the hydroseeding establishment period. Fuel Modification Zone B would be maintained by the homeowner, HOA, or landscape maintenance district (LMD) as appropriate.

Fuel Modification Zone C (dry zone): 50 percent thinning of native shrubs

The area 40 to 185 feet from a property line would be Fuel Modification Zone C. This zone would be a nonirrigated area and would require the removal of all flammable undesirable species as listed in Appendix G, *Spring Trails Fire Protection Plan*. Specimen trees should be retained as directed by the owner's representative but must be thinned a minimum of 50 percent. This zone also requires the removal of all low-hanging foliage within three times the height of the understory shrubs or 10 feet, whichever is greater, along with dead or broken branches. All accumulated plant debris on the ground would be removed. Fuel Modification Zone C area should be maintained by the LMD.

A detailed map of the specific location and size of all Fuel Modification Zones in the project is shown on Figure 5.6-1 and Figure 5.6-2, *Fire Protection Plan (North Side)* and *Fire Protection Plan (South Side)*, respectively. A sectional view of Fuel Modification Zones is shown in Figure 5.6-3, *Fuel Modification Examples*. Additional examples are provided in Appendix G of the Spring Trails Fire Protection Plan and in Figures 3.18 through 3.24 of the Spring Trails Specific Plan.



Building Setbacks

The Fuel Modification Zones along the wildland interface must provide a170-foot minimum setback. Buildings not on the wildland interface/fuel modification zones would be set back from the adjacent property lines or any natural area adjacent to the homes by a 25- to 50-foot building setback. This zone would have no combustible construction allowed within it.

There are two lots within Spring Trails that would not be developable due to deficient Fuel Modification distances. These lots are Lot 30 and 233, along the eastern boundary of the project site. Without mitigation, these lots would remain undevelopable.

Systems Approach

The concept behind this and most other fuel modification plans is to create a fuel modification zone in which the fire is systematically deprived of available fuel to reduce the size of the flame and the amount of heat that would be generated. The maximum flame length of 100 feet is achieved at the junction of the wildland and Fuel Modification Zone C. For this reason, Fuel Modification Zone C is a minimum of 100 feet in width (measured on the flat plane not less than 100 feet regardless of the slope). Fuel Modification Zone C would have 50 percent of the available fuel that was in the wildland. It would also have little to no dead materials or fine fuels. This would reduce flame lengths to a manageable size. When the flame front arrives at the junction of Fuel Modification Zones B and C, it should be reduced by 50 percent. Fuel Modification Zone B is a minimum of 50 feet in width and it is irrigated. The combination of the distance and the heat sink effect of the moist vegetation should keep flames from reaching the Fuel Modification Zone A/B junction. In the event that they do, however, a minimum 20-foot setback zone (Fuel Modification Zone A) is established with no

combustible construction being allowed in this fuel modification zone at any time. Additionally, advanced construction features would be used to prevent convection or radiant heat from igniting the structure.

In areas where fuels, topography, slope, and aspect align, additional depth has been added to the fuel modification zones. This occurs on the upper portions of the project, where vegetation is below the structures, and on the east side of the project, where canyon winds may be channeled and thus intensified. The final area for an increased fuel modification zone is on the east side of the project, located on the only cul-de-sac where total alignment can occur. These areas are depicted on Figures 5.6-1, *Fire Protection Plan (North Side),* and 5.6-2, *Fire Protection Plan (South Side)*. See Appendices H1 and H2 for the complete Fuel Modification Plan. The complete plan also includes additional restrictions and guidelines on vegetation management, plant palettes, and maintenance and spacing of vegetation.

Construction Phasing Management Plan

All vegetation management would be done on private lots prior to work beginning on those lots and prior to any combustible construction materials being brought onsite. Vegetation management in all common areas, parks, construction sites, medians, planters, roadsides, etc., would be done as required in this plan at the start of the construction phase and continued throughout the project. Adequate fuel breaks acceptable to the San Bernardino Fire Department would be created around all grading, materials storage areas, laydown areas, site work, and other construction activities in areas adjacent to the vegetation.

Public Education

In addition to the built-in fuel modification zones and construction techniques, the active participation of the homeowners is necessary to adequately protect Spring Trails. Accordingly, the Specific Plan indicates the need for this standard to be followed:

- The fire threat, fuel modification zone requirements, maintenance responsibilities, protection plans, approved plant palette, list of unacceptable plants, preventative measures, and evacuation routes shall be disclosed to potential homebuyers prior to the sale of any residence and readily available to homeowners upon request.

The HOA would sponsor annual clinics conducted by fire professionals to educate residents on the fire threat, fuel modification zone requirements, maintenance responsibilities, protection plans, landscaping requirements, preventative measures, and evacuation routes.

The high fire risk associated with the natural features and conditions of the site causes the proposed development to be at a high fire risk and the impacts would be potentially significant.

Fire Protection Plan (North Side)



Construction Feature Legend

Enhanced Construct on Zone: All structures on lots within 200' of the fuel modification edge shall receive enhanced construction on all four (4) sides per San Bernardino Municipal Code Chapter 15.10.

Roof ng, Venting, and Rain Gutter Requirements: All structures on lots within the project outside 200' from the fuel modification edge shall receive enhanced construction on all four (4) sides per California Building Code Chapter 7A Phase II regarding roofing, venting, and rain gutters only.

Lots 30 and 233: Lots 30 and 233 are currently non-buildable and no development on these lots shall occur unless either the off-site fuel modification is provided with easements for maintenance of if the adjoining property is developed and the off-site fuel modification zone C is not required.

Symbol Legend

Access Point: Fuel modification walk in access point (a non-combustible gate will only be provided where necessary). 350' minimum distance between access points.

Side Yard Maintenance Access Point: Fuel modification walk in access point on sideyards of homeowners lot 12" in width (A non-combustible gate to be provided at the front yard fence and the rear yard fence. 250' minimum distance between access points.

Identificat on Marker: Permanent identification markers shall be constructed to identify the limits of applicable fuel modification zones. Marker design shall be 2" dia. x 8'-0" long galvanized pipe. Embed minimum 2'-6" into solid ground. Stencil top 6" with a letter 'B' or 'C'. Expose pipe 2'-0" above vegetation minimum.

Refer to Figures X.X thru X.X for fuel modification sections

Fuel Modification Zones Legend

Zone A (Flat) – Non-Combust ble Construction: 20'-0" - 35'-0" setback zone for non-combustible construct on only. Zone A shall be maintained by the Homeowner or LLMD.

Zone B – Wet Zone (100% Removal Undesirable Plant Species): First 50'-0" –200'-0" from Zone A. Zone B shall be permanently irrigated, fully landscaped with approved drought tolerant, deep rooted, moisture retentive material. This zone shall be planted with container shrub material and hydroseeded per SBFD approved plant list. Handseeding of bare areas may need to be performed six months after hydroseeding establishment period. Zone B area shall be maintained by LLMD.

Zone C – Dry Zone (50% Thinning Native Shrubs): 40'-0" – 185'-0" Zone C shall be a non-irrigated area. Removal of all flammable undesirable species, specimen and trees shall be retained as directed by the owner's representative but must be thinned a minimum of 50% including removal of all low hanging foliage within (3x) three times the height of the understory shrubs or (10) - ten feet, whichever is greater, along with dead or broken branches. All accumuated plant debris on the ground shall be removed. Zone C area shall be maintained by LLMD

Roadside Brush Clearance: Removal of all undesired plant species and thinning of at least 50% of all vegetation within 20'-0" of curb.

Fuel Modification Plant Palette: Plant material must be on approved plant palette. Plant material on the Plant Removal List is not allowed in this zone. This zone shall be irrigated and be maintained by the LLMD.

Brush Clearance: 50% brush clearance shall consist of removal of all dead and dying shrubs and all plant material on the Plant Removal List located around water tanks.

Irrigated Manufactured Slope: Planted and irrigated manufactured slope, maintained on a year round basis.

Building Setback: 25' - 50' building setback. No combustible construction allowed. Planting material must be from the Fuel Modification Plant Palette.

0 480
Scale (Feet)

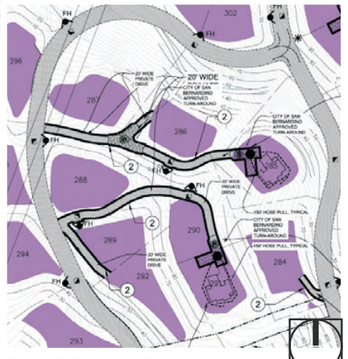
Source: Firesafe Planning Solutions 2009

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Fire Protection Plan (South Side)



ENLARGEMENT 'B'
see Figure 5.6-1



ENLARGEMENT 'A'
see Figure 5.6-1

Construction Feature Legend

Enhanced Construct on Zone: All structures on lots within 200' of the fuel modification edge shall receive enhanced construction on all four (4) sides per San Bernardino Municipal Code Chapter 15.10.

Roof ng, Venting, and Rain Gutter Requirements: All structures on lots within the project outside 200' from the fuel modification edge shall receive enhanced construction on all four (4) sides per California Building Code Chapter 7A Phase II regarding roofing, venting, and rain gutters only.

Lots 30 and 233: Lots 30 and 233 are currently non-buildable and no development on these lots shall occur unless either the off-site fuel modification is provided with easements for maintenance of if the adjoining property is developed and the off-site fuel modification zone C is not required.

Symbol Legend

Access Point: Fuel modification walk in access point (a non-combustible gate will only be provided where necessary). 350' minimum distance between access points.

Side Yard Maintenance Access Point: Fuel modification walk in access point on sideyards of homeowners lot 12" in width (A non-combustible gate to be provided at the front yard fence and the rear yard fence. 250' minimum distance between access points.

Identificat on Marker: Permanent identification markers shall be constructed to identify the limits of applicable fuel modification zones. Marker design shall be 2" dia. x 8'-0" long galvanized pipe. Embed minimum 2'-6" into solid ground. Stencil top 6" with a letter 'B' or 'C'. Expose pipe 2'-0" above vegetation minimum.

Refer to Figures X.X thru X.X for fuel modification sections

Fuel Modification Zones Legend

Zone A (Flat) – Non-Combust ble Construction: 20'-0" - 35'-0" setback zone for non-combustible construct on only. Zone A shall be maintained by the Homeowner or LLMD.

Zone B – Wet Zone (100% Removal Undesirable Plant Species): First 50'-0" –200'-0" from Zone A. Zone B shall be permanently irrigated, fully landscaped with approved drought tolerant, deep rooted, moisture retentive material. This zone shall be planted with container shrub material and hydroseeded per SBFD approved plant list. Handseeding of bare areas may need to be performed six months after hydroseeding establishment period. Zone B area shall be maintained by LLMD.

Zone C – Dry Zone (50% Thinning Native Shrubs): 40'-0" – 185'-0" Zone C shall be a non-irrigated area. Removal of all flammable undesirable species, specimen and trees shall be retained as directed by the owner's representative but must be thinned a minimum of 50% including removal of all low hanging foliage within (3x) three times the height of the understory shrubs or (10) - ten feet, whichever is greater, along with dead or broken branches. All accumuated plant debris on the ground shall be removed. Zone C area shall be maintained by LLMD

Roadside Brush Clearance: Removal of all undesired plant species and thinning of at least 50% of all vegetation within 20'-0" of curb.

Fuel Modification Plant Palette: Plant material must be on approved plant palette. Plant material on the Plant Removal List is not allowed in this zone. This zone shall be irrigated and be maintained by the LLMD.

Brush Clearance: 50% brush clearance shall consist of removal of all dead and dying shrubs and all plant material on the Plant Removal List located around water tanks.

Irrigated Manufactured Slope: Planted and irrigated manufactured slope, maintained on a year round basis.

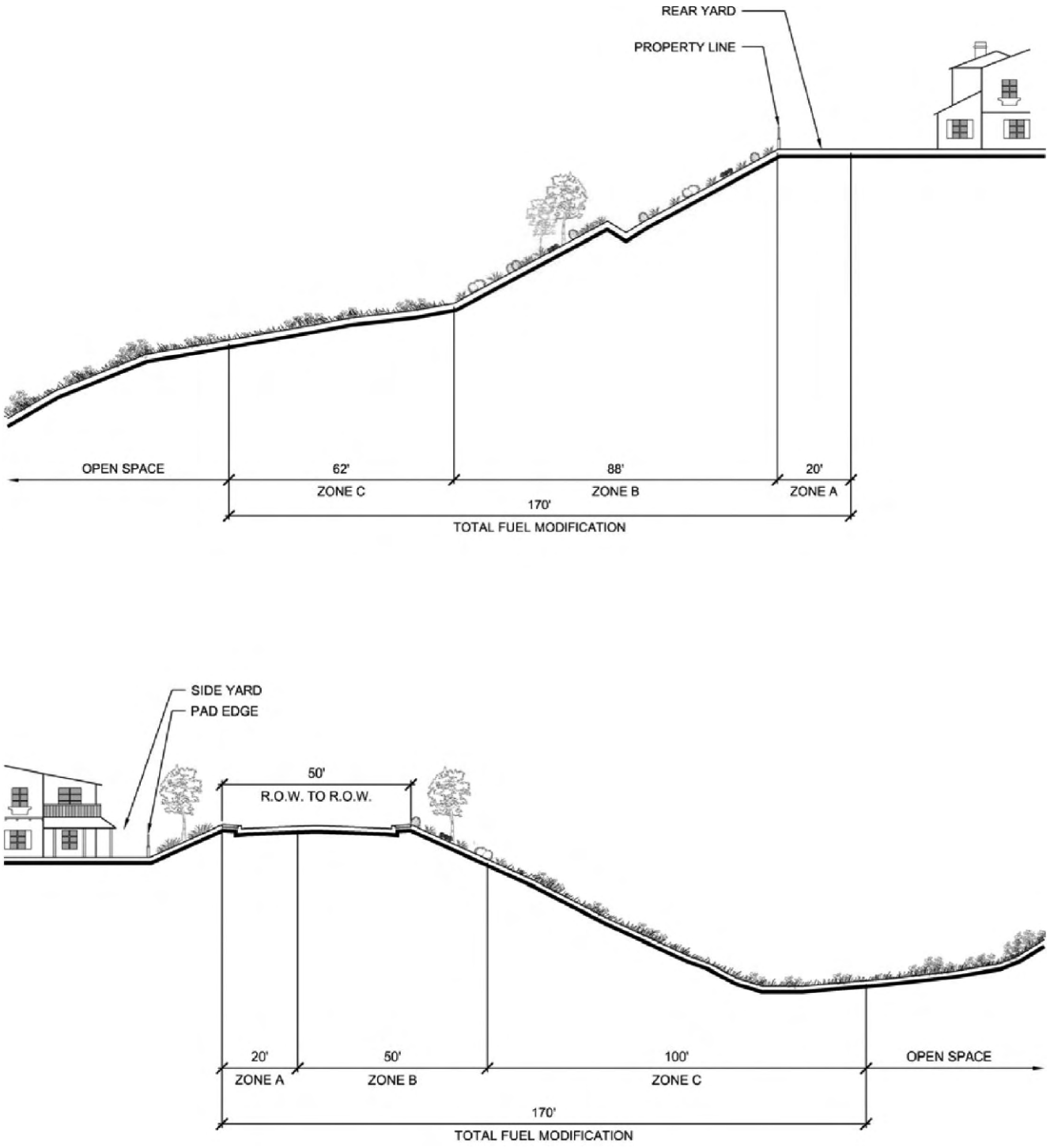
Building Setback: 25' - 50' building setback. No combustible construction allowed. Planting material must be from the Fuel Modification Plant Palette.

0 480
Scale (Feet)

Source: Firesafe Planning Solutions 2009

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Fuel Modification Examples



Source: Firesafe Planning Solutions

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IMPACT 5.6-4: EXPOSE PERSONS OR PROPERTY TO SIGNIFICANT RISK, INJURY, OR DEATH INVOLVING HIGH WINDS. [THRESHOLD H-9]

Impact Analysis: The proposed project would construct residential homes in an area exposed to high winds. Although the City of San Bernardino General Plan has not officially designated the project site or the adjacent 26.4-acre annexation area in the High Wind Area because they are not within the City limits, its location falls in line with areas along the foothills that have been designated in this area. Areas exposed to high winds can potentially experience health and safety issues related, but not limited, to air quality, soil erosion, motor-vehicle accidents due to decreased visibility, wind-driven property damage, and exacerbation of fire hazards.

Project-related construction activities, particularly during site preparation such as grading, could potentially expose soils to wind erosion. This creates potential for windblown dust and soil to migrate offsite, adversely affecting adjacent properties during periods of high wind conditions. Furthermore, windblown dust, particularly during Santa Ana wind conditions, could reduce visibility along I-215, a heavily traveled highway approximately 0.7 mile southwest of the site, affecting travel and increasing the probability of motor-vehicle accidents. In addition to reduced visibility, high winds could also result in property damage and harm to surrounding residences from wind-driven debris picked up from loose onsite construction materials.

Winds would not only have the potential to impact the surrounding area during project development, but also the proposed residences and land uses onsite. Winds have been measured and have the potential to reach in excess of 90 to 100 miles per hour. Winds at these speeds could potentially cause damage to the homes and land uses proposed on the project site. Damage could be caused to roofs, fences, windows, and landscaping. Moreover, high winds are a main contributing factor for the high fire risk hazard in the area. Santa Ana wind conditions significantly increase the fire hazard in the area when combined with the fuels present due to the low moisture content and low relative humidity.



The above analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.6-5: IF THE PROJECT IS BUILT WITH THE SOUTHERN CALIFORNIA EDISON 115 KV TRANSMISSION LINES REMAINING ABOVEGROUND, THE LINES WOULD POTENTIALLY EXPOSE CONSTRUCTION WORKERS AND RESIDENTS TO HAZARDS OF ELECTRIC SHOCK AND/OR ELECTRIC AND MAGNETIC FIELDS. [THRESHOLD H-3 IN PART]

Impact Analysis: As shown in Figure 3-3, *Development Plan*, in Section 3 the plan assumes that the SCE overhead electric lines that traverse the western portion of the site would be located underground. In the event that the overhead electric lines cannot be undergrounded, an alternative plan accommodating the lines above ground is proposed for the site (see Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan*). The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. In this alternative, underneath the central portion of the electric line easement, the land use is designated as Open Space-Controlled. The northern portion of the electric line easement is designated as residential in Figure 3.3A; however, development is not permitted within the electric line easement. The SCE easement will be landscaped in accordance with the approved Fire Protection Plan for Spring Trails. If permitted by SCE, a park and/or equestrian/pedestrian trail may be located under the electric lines as a permitted use; however, they are not assumed in the design of the alternative plan.

The preferred development plan and the alternative development plan with overhead electric lines presents potential hazards related to proximity to future residential uses:

- Although SCE makes provision for earthquakes in the design and construction of overhead transmission lines, extreme seismic shaking and earth rupture on the San Andreas fault may snap lines or topple towers, resulting in live power to the ground.
- During construction, accidental contact with the towers or wires is possible.
- Resident youths may be tempted to play on or climb the towers.
- Residents may be exposed to electric and magnetic fields (EMF).

These lines would pose both construction and operational risks to workers or residents on the site. Contact with the wires by an elevated excavator arm, raised bucket, or other equipment designed for overhead work would have potentially fatal consequences. There is also the risk that residents may be tempted to climb on or vandalize the supporting towers. Though slight, the risk of electrical shock because of such activity does exist. Worker and residents would also be susceptible to electromagnetic fields (EMFs) because of the location of the lines on the project site. The SCE easement does not cross into the adjacent 26.4-acre annexation area.

The project proposes to relocate the 115 kV lines underground prior to site development; therefore, the risks associated with electrical shock and physical contact with the lines would be eliminated. If the 115kV lines cannot be relocated underground, then the project would be built to accommodate the overhead electric lines. This alternative plan is described in Chapter 3, *Project Description*, and is illustrated in Figure 3-3A, *Alternative (Overhead Electric Lines) Development Plan*. Figure 3-3A shows the relationship between the easement and residential lots. Underneath the electric line easement, the land use is designated Open Space-Controlled. The northern portion of the electric line easement is designated residential in Figure 3.3A; however, development is not permitted within the electric line easement.

The concern with proximity to electric transmission lines is exposure of residents to electric and magnetic fields (EMFs). Since EMF emission is not reduced when transmission lines are undergrounded (PPL 2008), this would be a concern in both development scenarios. Over the past 30 years researchers have studied the potential effects of EMF exposure both nationally and internationally in an effort to determine whether EMF exposure is carcinogenic. At the state level, the California Electric and Magnetic Fields Program was established in 1993 for research, education, and technical assistance. At the federal level, the National Institutes of Health, National Institute of Environmental Health Sciences, and the Department of Energy manage a program of research and analysis of EMFs. These agencies are clearinghouses for information and research on this subject.

EMFs are everywhere in modern society. People are exposed to EMFs throughout their daily lives at home, at work, and anywhere they are near electric lighting, appliances, and equipment. We are exposed to EMFs from many sources, including electric transmission lines that carry electricity from generation plants to communities; distribution lines that deliver electricity locally to homes, schools, and workplaces; from wiring in buildings; and electric appliances and equipment.

A magnetic field exists whenever an appliance or piece of equipment is turned on. A magnetic field results from current, and is measured in milliGauss (mG) or microTesla (μT), which is ten times a mG. Magnetic fields in typical homes are usually less than 1 mG in the center of rooms and below 100 mG close to electrical appliances and internal wiring (CDHS 1999). Table 5.6-3 lists examples of common appliances and equipment people may be exposed to every day.

Table 5.6-3
Magnetic Fields of Common Appliances and Equipment (mG)

Appliance/Equipment	At One Foot	At Three Feet
Aquarium Pump	0.35–18.21	0.01–1.17
Can Opener	7.19–163.02	1.3–6.44
Computer Monitor	0.20–134.7	0.01–9.37
Dishwasher	4.98–8.91	0.84–1.63
Fax Machine	0.16	0.03
Microwave Oven	0.59–54.33	0.11–4.66
Radio	0.43–4.07	0.03–0.98
Television	1.8–12.99	0.07–1.11
Vacuum	7.06–22.62	0.51–1.28

Source: California Department of Health Services, EMF Program, 1999.

EMFs from transmission lines increase the closer a person stands to the line. The intensity of a magnetic field generated by a transmission line varies with the time of year and the time of day, due to the amount of electricity surging through the lines. As one moves farther from the lines, the intensity of the magnetic field diminishes to background levels. Beyond about 100 meters from the source, the magnetic field of a transmission line begins to merge with magnetic fields produced by other sources in the built environment (CDHS 1999). Table 5.6-4 shows the magnetic field with distance from the centerline of the transmission line.

Table 5.6-4
Magnetic Field Generated by a 735 kV Line at Varying Distances from the Centerline

Distance from the Centerline (meter)	Magnetic Field (milliGauss)
0	150 mG
20	87 mG
40	27 mG
60	12 mG
80	7 mG
100	4 mG

Source: Electric and Magnetic Fields and Human Health, Hydro Quebec, 2000.

To date there has been no definitive study produced that shows a direct correlation between EMFs generated by transmission or distribution lines and disease in humans (NIEHS 2002). There is no evidence that living near electric transmission lines is any more detrimental to human health than living in a modern house.

5.6.4 Cumulative Impacts

The assessment of potential cumulative impacts with regard to hazards and hazardous materials relates to the ability for impacts to occur offsite. The hazardous materials study area considered for cumulative impacts consisted of (1) the area that could be affected by proposed project activities, and (2) the areas affected by other projects where activities could directly or indirectly affect the presence or fate of hazardous materials on the proposed project site. The land uses surrounding the project site are either vacant or residential.

There would be little chance for a hazardous materials release in the surrounding area that would cause cumulative impacts with the proposed project.

Cumulative analysis for fire and wind hazards is completed with similar parameters. Cumulative impacts could occur when adjacent projects, in combination with the proposed project, would increase the number of people being exposed to fire and wind hazards. At this time no development is planned for the areas adjacent to the proposed project and no cumulative impacts would occur.

The above assessment of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.6.5 Existing Regulations and Standard Conditions

Emergency Management

- San Bernardino Municipal Code, Chapter 2.46, Disaster Council

Fire Hazards

- San Bernardino Municipal Code, Chapter 15.10, Foothill Fire Zone Building Standards
- San Bernardino Municipal Code, Chapter 19.15, Foothill Fire Zones Overlay District
- San Bernardino Municipal Code, Chapter 15.16, Uniform Fire Code
- California Building Code (2007), Chapter 7A, Materials and Construction Methods for Exterior Wildlife Exposure, regarding roofing, venting, and gutters
    - All structures on lots within the project beyond the 200 feet Foothill Fire Zone shall receive "enhanced construction" on all four sides per 2007 California Building Code Chapter 7A regarding roofing, venting, and rain gutters only.
- Fire Protection Plan for Spring Trails, Appendix G, Fuel Modification Zones
- Fire Protection Plan for Spring Trails, Appendix F, Vegetation Management Guidelines
- Fire Protection Plan for Spring Trails, Appendix I, Approved/Undesirable Plant Palette

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.6-1 and 5.6-2.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.6-3 The topography and physical conditions of the proposed project site puts it at high risk for fires, potentially causing damage, injury, or death to property and people on the site. In addition, two lots (Lot 30 and 233) would be undevelopable due to deficient space for fuel modification.

- Impact 5.6-4 Development of Spring Trails in a designated high wind area would place residents, construction workers, and on- and offsite property at risk of injury, death, and/or damage caused by high wind conditions.

- Impact 5.6-5 If the project is built with the Southern California Edison 115 kV transmission lines remaining aboveground the lines would potentially expose construction workers and residents to hazards of electric shock.

5.6.7 Mitigation Measures

Impact 5.6-3

Fire Protection Plan

6-1 The Fire Protection Plan shall be approved by the City of San Bernardino Fire Department prior to commencement of grading. The Fire Marshal shall have the authority to modify, increase, or reduce the necessary size and location of any of the recommended Fire Management Zones and setbacks, based on a lot-by-lot inspection at time of grading. A minimum of 170 feet of fuel modification plus enhanced structural treatments listed in the Fire Protection Plan are needed to provide a safe buffer between the wildland and the structures.

6-2 Prior to introduction of combustible materials on any lot, the developer or builder shall clear all flammable vegetation, including weeds to four inches in height or below (leave enough vegetation to allow for erosion control). All cut and dead vegetation shall be removed from the site. The builder shall maintain each site in this condition until the homeowner takes responsibility and installs irrigation and fire-resistive landscaping as approved by the Homeowners Association. All landscaping must be in compliance with the guidelines in the approved Fire Protection Plan. All manufactured slopes, internal common areas, and open spaces shall comply with the criteria set forth in the Fire Protection Plan and shall not have any vegetation of the type prohibited in this plan (undesirable plant list).



6-3 The Homeowners Association shall assure that all fuel modification on private lots is in accordance with the requirements in the plan.

6-4 An annual inspection of the property for compliance with the approved plan shall be done by the Homeowners Association with a written letter of compliance sent to the San Bernardino Fire Department. Every five years, an approved Wildland Fire Protection consultant funded by the HOA shall inspect the site and a report shall be submitted to the San Bernardino Fire Department.

Onsite Roadway Vegetation

6-5 Vegetation shall be modified and/or cleared, either by the Landscape Maintenance District or the Homeowners Association on each side of any onsite road in accordance with the approved Fire Protection Plan.

SCE Easement

6-6 If the project is built with the Southern California Edison 115 kV transmission lines remaining aboveground, all flammable vegetation within the SCE overhead electric line easement shall be removed, on an ongoing basis, except for that needed for erosion control and soil stability.

Lots 30 and 233

6-7 Development of Lots 30 and 233 shall only occur when the following conditions are met. No development shall occur without the review and approval of the San Bernardino Fire Chief.

- The onsite fuel modification shall consist of irrigated "Zone A" and "Zone B" that will remain within the Spring Trails property. An irrigated "Zone A" shall be a non-combustible setback zone within the pad area between the residential structure and the wildland urban interface area, traditionally the furthest portion of the pad. "Zone B" shall be a landscaped irrigated zone beyond "Zone A" and terminating at the project boundary, with non-combustible construction which will act as a "heat-sink" from an impending wild fire. "Zone C" shall extend offsite as fuel modification. "Zone C" will be a temporary off-site fuel modification until the adjoining property is, or will be, developed. If this is the scenario an easement will be required for maintenance of the "Zone C". If the adjoining property is developed prior to the development of the Spring Trails project, then the off-site fuel modification will not be required for Lots 30 and 233. The total fuel modification distance for lots 30 and 233 will be a minimum of 170 feet.

- For Lot 30, Zone A shall have a minimum/maximum distance of 20 feet, Zone B shall have a minimum distance of 88 feet and a maximum distance of 113 feet, and Zone C shall have a minimum distance of 37 feet and a maximum distance of 62 feet (a total of 15,469 square feet).

- For lot 233, Zone A shall have a minimum/maximum distance of 20 feet, Zone B shall have a minimum distance of 68 feet and a maximum distance of 112 feet in width, and Zone C shall have a minimum distance of 43 feet and a maximum distance of 80 feet (a total of approximately 20,706 square feet).

Impact 5.6-4

6-8 The development of Spring Trails shall follow development guidelines outlined in the San Bernardino General Plan for high wind areas (Policies 10.10.1 through 10.10.8). The building plans must be approved by the building official.

- Policy 10.10.1: Ensure that buildings are constructed and sited to withstand wind hazards.

- Policy 10.10.2: Require that development in the High Wind Hazard Area, as designated in Figure S-8 [of the San Bernardino General Plan], be designed and constructed to withstand extreme wind velocities.

- Policy 10.10.3: Periodically review the structural design requirements for wind in the Building Code to reflect wind conditions and property damage experienced as well as advances to current construction technology.

- Policy 10.10.4: Require that structures be sited to prevent adverse funneling of wind onsite and on adjacent properties.

- Policy 10.10.5: Require that multi-story residential, commercial, and industrial buildings be designed to prevent wind tunnel effects around their base and in passageways.

- Policy 10.10.6: Construct public infrastructure (lighting poles, street lights, bridges, etc.) to withstand extreme wind velocities in High Wind Hazard areas.

- Policy 10.10.7: Maintain police, fire, medical, and other pertinent programs to respond to wind-caused emergencies.

- Policy 10.10.8: Initiate a review of the wind hazard potential as it applies to various parts of the City and, if merited, tailor the design standards accordingly.

6-9 Implementation of Mitigation Measure 2-1 (Section 5-2, *Air Quality*) would reduce construction-related wind-blown dust impacts.

Impact 5.6-5

6-10 If the project is built with the Southern California Edison 115 kV transmission lines remaining aboveground, the development plans shall be drawn to accommodate SCE safety measures including:

- Operators of construction equipment with overhead lift capability, cranes, backhoes, and similar equipment shall abide by state safety clearances and undergo SCE-approved safety training, as needed, before operating the equipment onsite.

- Near residences, a safety strip meeting SCE standards shall be required beside the SCE right-of-way.

- Easements shall be employed as needed to prevent damage to the towers, shield residents from harm, and guarantee SCE maintenance access.

5.6.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with wind hazards, fire hazards, and electric shock to less than significant. Therefore, no significant unavoidable adverse impacts relating to hazards have been identified. No mitigation measures are proposed for EMFs because no studies have shown that there is an impact.

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5.7 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts to hydrology and water quality conditions from implementation of the proposed Spring Trails Specific Plan. Although the project is within an unincorporated area of San Bernardino County, it is within the City of San Bernardino's sphere of influence (SOI). It is assumed that implementation of this project would include annexation to the City of San Bernardino. Therefore, this section discusses hydrology and water quality issues associated with the project in accordance with the City of San Bernardino's regulations and guidelines.

Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface and groundwater. Surface water includes lakes, rivers, streams, and creeks. Groundwater is below the surface of the earth.

- *Water Quality Management Plan (WQMP) for Compliance with Santa Ana Regional Water Quality Control Board Order Number R8-2002-0012 (NPDES Permit No. CAS618036) for Spring Trails, Tr. 15576,* Rick Engineering Company, May 20, 2009.

- *Hydrologic and Water Quality Report in Support of the Environmental Impact Report and Tentative Tract Map 15576 for the Spring Trails Project,* Rick Engineering Company, revised January 4, 2010.

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendices I1 and I2).

5.7.1 Environmental Setting

Regulatory Framework

Clean Water Act

The federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) is the principal statute governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the EPA the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to regulate all direct and indirect discharges into the nation's waters and to restore, maintain, and preserve the integrity of those waters. The CWA sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as the dredging and filling of wetlands. The CWA also funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. The following CWA sections assist in ensuring water quality in surrounding water bodies:

- Section 208 of the CWA requires the use of best management practices (BMPs) to control discharge of pollutants in stormwater during construction.

- Section 303(d) requires creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies;[1] and preparation of plans to improve the quality of these water bodies. Water bodies on the list do not

[1] Impaired water bodies are water bodies that do not meet, or are not expected to meet, water quality standards.

meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution-control technology. Section 303(d) also establishes the total maximum daily load (TMDL) process to guide the application of water quality standards.

- Section 401 of the CWA requires any project that needs a federal permit (such as a Section 404 permit) which allows discharge to waters of the United States also to obtain state certification that the activity would not violate water quality standards.

- Section 402(p) regulates point-source discharges to surface waters under the National Pollutant Discharge Elimination System (NPDES) permit program, administered by the United States Environmental Protection Agency (EPA). In California, the State Water Resources Control Board (SWRCB) is authorized to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCB). Point-source discharges are readily identifiable, discrete inputs where waste is discharged to the receiving waters from a pipe or drain. Nonpoint discharges occur over a wide area and are associated with particular land uses (such as urban runoff from streets and stormwater from construction sites).

- Section 404 authorizes the US Army Corps of Engineers (Corps) to require permits for projects that will discharge dredge or fill materials into waters of the United States, including wetlands.

National Pollutant Discharge Elimination System

New development projects, industrial facilities, and construction sites are regulated by the SWRCB through general stormwater permits. Cities and counties are regulated through permits issued by the RWQCBs. Since 1990, operators of large storm drain systems such as the City of San Bernardino have been required to:

- Develop a stormwater management program designed to prevent harmful pollutants from being dumped or washed by stormwater runoff into the stormwater system, then discharged into local waterbodies.

- Obtain a NPDES permit.

The NPDES permit programs in California are administered by the SWRCB and by nine regional boards that issue NPDES permits and enforce regulations within their respective region. The City of San Bernardino lies within the jurisdiction of the Santa Ana RWQCB.

Municipal discharges of stormwater runoff are regulated under the NPDES General Permit for Municipal Small Storm Sewer Systems (MS4). In April 2002, the SWRCB issued an MS4 Permit (NPDES No. CAS618033) to the San Bernardino County Flood Control District (SBCFCD) as the principal permittee and the County of San Bernardino and 16 incorporated cities within San Bernardino County as copermittees. The MS4 Permit requires permittees to develop and implement their own programs for stormwater management. The San Bernardino County's MS4 Permit also requires implementation of design standards for BMPs. The purpose of the requirements is to minimize, to the maximum extent practicable, the discharge of pollutants from new development and renovation projects.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the SWRCB has ultimate control over state water rights and water quality

policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality and groundwater supplies in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The project site is in the Santa Ana River Basin, Region 8, in the Upper Santa Ana Watershed. The water quality control plan for the Santa Ana River Basin was adopted in 1995 and updated in 2008. This plan gives direction on the beneficial uses of the state waters within Region 8, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the plan standards.

Applicable Plans and Programs

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2001 the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, construction sites with a disturbed area of one or more acres are required to control stormwater discharges by completing and filing a Notice of Intent (NOI) with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared prior to start of grading activities and must be implemented during construction. The SWPPP must list BMPs implemented on the construction site to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters for sediment. The proposed project encompasses 350.6 acres and is therefore subject to the stormwater discharge requirements of the General Construction Permit. Prior to obtaining any grading permits, the project applicant must provide evidence of compliance with the General Construction Permit by providing a copy of the Waste Discharger's Identification Number to the City's Development Services Department.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). The most recent FIS and FIRM were completed and published for San Bernardino on August 28, 2008. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

The Flood Disaster Protection Act (FDPA) requires owners of all structures in identified SFHAs to purchase and maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally subsidized flood insurance to property owners in communities that adopt and enforce floodplain management ordinances that meet minimum criteria established by FEMA. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System for

crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing erosion hazards.

The City of San Bernardino, under NFIP, has created standards and policies to ensure flood protection. These policies address development and redevelopment, compatibility of uses, required predevelopment drainage studies, compliance with discharge permits, enhancement of existing waterways, cooperation with the Corps and SBCFCD for updating, and method consistency with the RWQCB and proposed BMPs.

San Bernardino County Stormwater Program

The Santa Ana RWQCB requires postconstruction BMPs to be implemented for new development. In addition, stormwater BMPs for construction activities are required, as per the statewide Construction General Permit. To comply with these requirements, the County of San Bernardino has issued the Model Water Quality Management Plan to guide permittees and developers in implementing programs to minimize the detrimental effects of urbanization on the beneficial uses of receiving waters. The proposed project is considered to be a Category Project (i.e., subdivision of 10 or more units and hillside development of $\geq$10,000 square feet), which requires development and implementation of a water quality management plan (WQMP) for review and approval. The WQMP must incorporate and implement all site design BMPs, all source control BMPs, and all treatment control BMPs. The combination of BMPs must address all identified pollutants and hydrologic conditions of concern. Operation and maintenance requirements for the BMPs and the funding source to implement the operation and maintenance requirements also must be included. The preliminary WQMP for this project is provided in Appendix I1. The procedures described in the San Bernardino County Hydrology Manual (1986) were used to calculate the pre- and postdevelopment peak flow rates and sediment yield analyses. The hydrologic and water quality report prepared by Rick Engineering Company is provided in Appendix I2.

The City of San Bernardino's stormwater regulations can be found in Chapter 8.80 of the San Bernardino Municipal Code. Prior to the issuance of grading permits, the project applicant must submit to the City Engineer and have approved a stormwater quality management plan (SWQMP; referred to as a WQMP by the County Stormwater Program).

Existing Conditions

Regional Drainage

The project site is in the Santa Ana River Watershed that covers 2,800 square miles of mountains, foothills, and valleys in southwestern California, including parts of Los Angeles, Riverside, San Bernardino, and Orange Counties. The Santa Ana River originates in the San Bernardino Mountains and flows in a generally southwesterly direction for over 100 miles until it discharges into the Pacific Ocean. The site is in the Upper Santa Ana River Watershed, which includes much of the San Bernardino Mountains and San Bernardino Valley (CNRA 2007; Cal/EPA 2007).

Local Surface Waters and Drainage

More specifically, the project site is within the Bunker Hill hydrologic subarea of the Upper Santa Ana River watershed. The project site drains into Cable Canyon and ultimately into Cable Creek; Cable Canyon passes through the site. Existing drainage from the site is by surface flow. Cable Creek begins as an unimproved watercourse at the mouth of Cable Canyon east of the interchange of Interstate 215 and Interstate 15, flowing south to the Cable Creek Spreading Grounds, then continuing southeast for about three miles before discharging into the Devil Creek Diversion Channel (see Figure 5.7-1, *Local Drainage*). Devil Creek Diversion Channel flows south roughly 1.4 miles to Lytle Creek Wash, which flows in turn about 2.9 miles southeasterly where it discharges into a flood control basin. Drainage continues into Lytle Creek Channel for about 2.8 miles southeastward to its confluence with Warm Creek, then flows southward for roughly one mile before joining with the Santa Ana River. The junction of Warm Creek with the Santa Ana River is within Reach Four of the Santa Ana River.

The project site plus the area of the Cable Creek Watershed that drains onto the site total roughly 2,638 acres. These are divided into four drainage areas, as shown in Figure 5.7-2, *Existing Site Drainage,* and described in Table 5.7-1, *Existing Drainage, Project Site, and Tributary Area*.

Table 5.7-1
Existing Drainage, Project Site, and Tributary Area

Drainage Area	Area, Acres			Q100 (CFS)
	Onsite	Offsite	Total	
A	148.8	1881	2029.8	5,773
B	51.6	12.1	63.7	107
C	128.4	69.8	198.2	398
D	21.8	324.0	345.8	708
Total	**350.6**	**2,286.9**	**2,637.5**	**6986**

Source: Rick Engineering 2009.
Q_{100} – 100-year, one-hour peak flow rate

- Drainage area "A" on Figure 5.7-2 consists of 148.9 acres of onsite drainage and 1,881 acres of offsite drainage. The offsite drainage area is made up of the west and east forks of Cable Canyon and a unnamed blue-line stream that drains into the project from the northeast. The 100-year, one-hour peak flow rate produced from Cable Canyon and its tributary areas as it exits the project site is 5,773 cubic feet per second (cfs).

- Drainage Area "B" consists of 51.6 acres of onsite drainage area and 12.1 acres of offsite drainage. The 100-year, one-hour peak flow rate generated by drainage area "B" is 107.1 cfs.

- Drainage Area "C" consists of 128.4 acres of onsite drainage and 69.8 acres of offsite drainage area. The 100-year, one-hour peak flow rate produced by drainage area "C" is 398 cfs.

- Drainage Area "D" consists of 21.8 acres of onsite drainage area and 324 acres of offsite drainage that includes drainage area from Meyers Canyon. Drainage Area "D" produces a 100-year, one-hour peak flow rate of 708 cfs.

Surface Water Quality

As previously stated, the project site is within the Upper Santa Ana River Watershed. More specifically, runoff from the project site would discharge to Cable Creek and ultimately into the Santa Ana River. The present or potential beneficial uses of Cable Creek are:

- MUN Municipal and domestic supply
- GWR Groundwater recharge
- REC1 Recreation activities involving body contact with water where ingestion of water is reasonably possible
- REC2 Recreation activities close to water, but not normally involving body contact with water where ingestion of water would be reasonably possible
- WARM Warm freshwater habitat
- COLD Cold freshwater habitat
- WILD Wildlife habitat

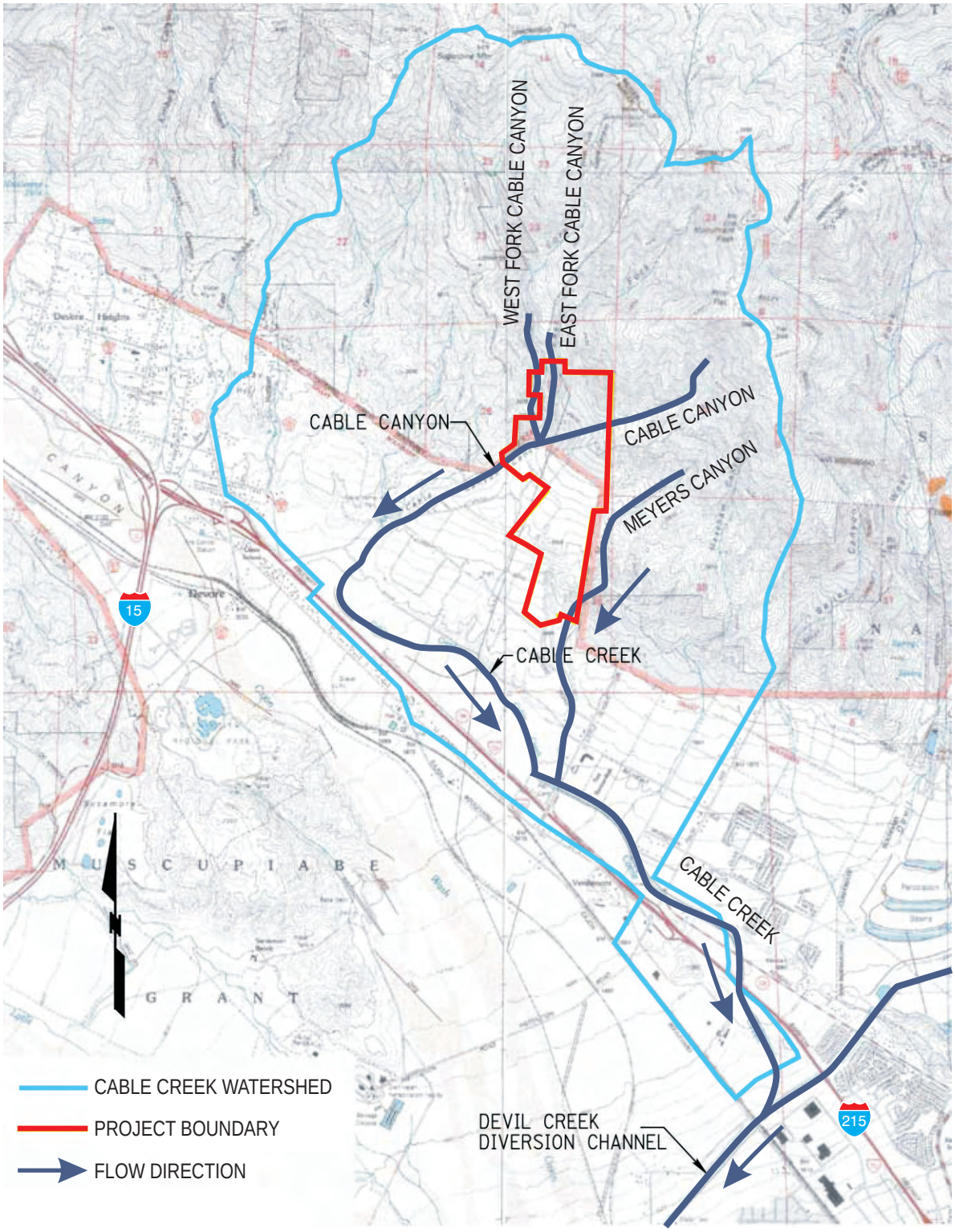
Water quality objectives have been prescribed in the Santa Ana River Basin Water Quality Control Plan (2008). The water quality objective for Cable Creek is a total dissolved solids (TDS) concentration of 325 mg/l (milligrams per liter).

Under Section 303(d) of the Clean Water Act, California maintains a list of Water Quality Limited Segments, that is, water bodies that do not meet water quality standards even after point sources of pollution have installed the minimum required levels of pollution control technology. TMDLs, that is, maximum amounts of a pollutant that can be discharged into a water body, are developed for water quality limited segments. Cable Creek is not listed as impaired on the 303(d) list of water quality limited segments approved by the EPA in 2007; however, the downstream receiving water body, Lytle Creek, is listed as impaired for pathogens. In addition, Reach Four of the Santa Ana River is listed as impaired for pathogens from a nonpoint source, for which a TMDL is planned.

Potential Historical Pollutant Sources on the Project Site

There are no known pollutants of concern on the project site. However, the site was used for agriculture until about 1980, producing barley and grapes, and then was used for sheep grazing between about 1980 and 1989. Thus, agricultural pesticides may have been applied in the past and residual concentrations may still be present onsite. Illegal dumping is also a potential onsite pollutant source.

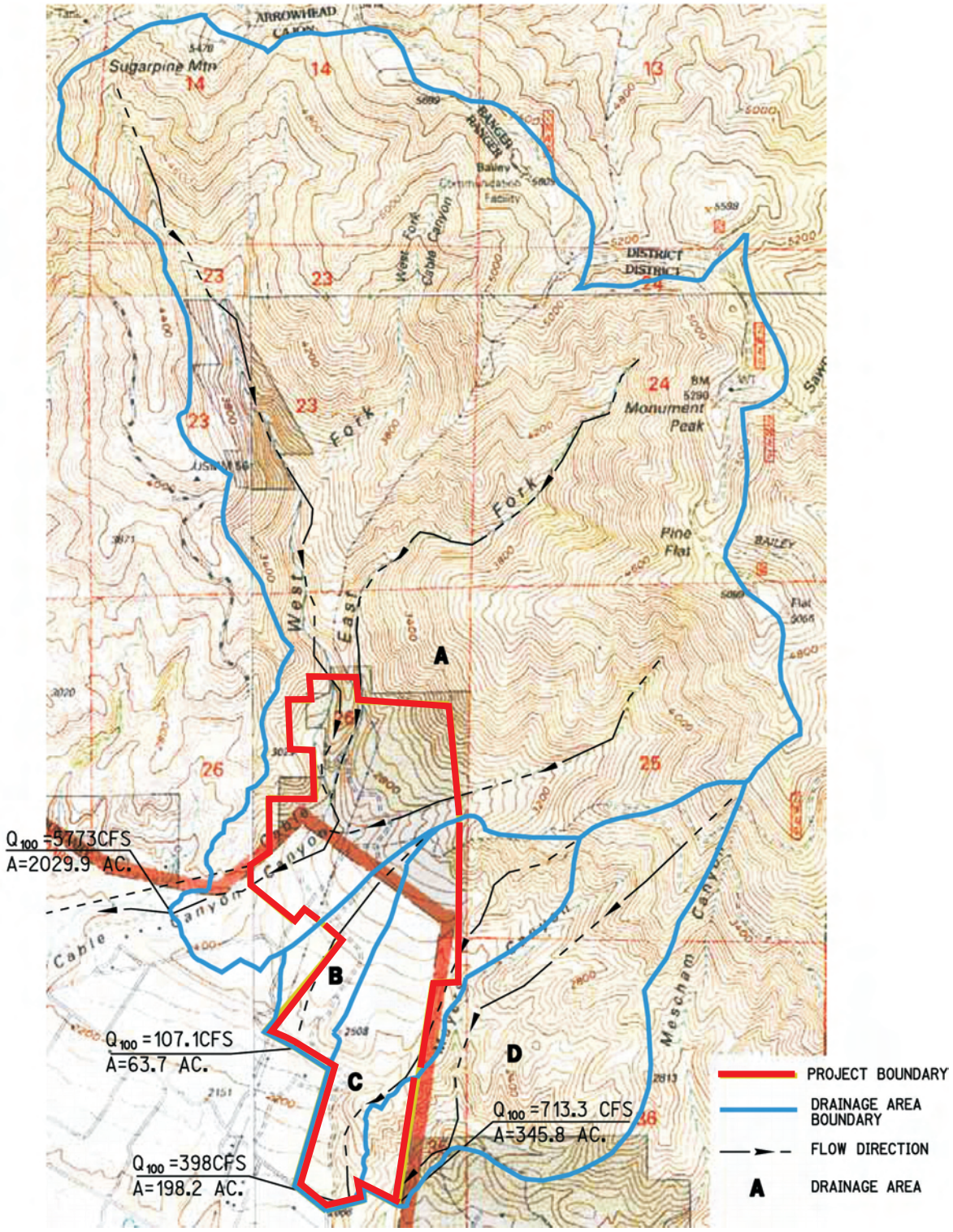
Local Drainage



Source: Rick Engineering Company 2009

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Existing Site Drainage



Source: Rick Engineering Company 2009

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Groundwater

The groundwater underneath the project site lies just within the Bunker Hill Groundwater Basin (Basin), which spans part of the northwestern San Bernardino Valley, as shown in Figure 5.7-3, *Bunker Hill Groundwater Basin*. The Basin is replenished naturally by local precipitation and by stream flow from rain and snow melt in the San Bernardino Mountains. Groundwater is also artificially recharged by rerouting stream flows to recharge percolation basins. San Bernardino Municipal Water Department's water supply is extracted from the Basin. The nearest municipal groundwater well (the City of San Bernardino Cajon Well No. 1) is located approximately a mile southwest of the site. Based on geotechnical investigations conducted at the site, groundwater depth beneath the project site is greater than 50 feet. Groundwater was found at 20 feet below ground surface (bgs) in two borings in an isolated area on the eastern part of the site along the northeast side of the San Andreas Fault, which acts as a local groundwater barrier.

Groundwater Quality

The present and potential beneficial uses for the Bunker Hill Groundwater Management Zone, as reported in the Santa Ana River Basin Plan (RWQCB 2008) are:

- MUN Municipal and domestic supply
- AGR Agricultural supply
- IND Industrial service supply
- PROC Industrial process supply[2]

Water quality objectives for the Bunker Hill Groundwater Management Zone include a TDS concentration of 310 mg/l and nitrate as nitrogen level of 2.7 mg/l.

The intermittent beneficial uses designated for the Mountain Reaches of streams tributary to the Bunker Hill Groundwater Basin consist of MUN (municipal and domestic supply), plus the five beneficial uses listed previously (GWR, REC1, REC2, COLD, and WILD).

Water Quality Objectives for the Mountain Reaches of streams tributary to the Bunker Hill Groundwater Basin are the same as those previously listed for Cable Creek. Groundwater sampling over the 20-year period (1984–2003) yielded average TDS concentrations of 320 mg/l and average nitrate concentrations of 4.3 mg/l. While these levels are above the Water Quality Objectives for the respective substances, they are below the USEPA's MCLs for these two substances—1,000 mg/l and 10 mg/l, respectively (SBMWD 2008; USEPA 2003).

The proposed project site is not within a groundwater management zone. Although groundwater within the Bunker Hill Groundwater Basin is of excellent mineral quality, with TDS concentrations less than 350 mg/l, portions of the Basin are impaired with one or more of the following contaminants: trichloroethylene (TCE), perchloroethylene (PCE), 1,2-dibromo-3-chloropropane (DBCP), perchlorate, nitrates, and fluoride. Drinking water standards are met by treatment of the contaminants, blending of water to reduce contaminant levels, and pumping in noncontaminated areas (SBMWD 2005).

[2] Industrial service supply waters are used for industrial activities not dependent on water quality, including cooling water supply and hydraulic conveyance. Industrial process supply waters are used for industrial activities dependent on water quality, including manufacturing and food processing.

Flood Hazards

Designated Flood Zones

The project site is in FEMA Zone X, meaning that it is outside of the 100-year and 500-year floodplains, according to Flood Insurance Rate Maps Map Nos. 06071C7910H and 06071C7930H.

Seismically Induced Dam Inundation

There are no dams on or upstream from the project site that could pose a hazard of seismically induced dam inundation.

Inundation from Aboveground Water Storage Reservoirs

There are no existing aboveground water storage tanks or reservoirs on or upstream from the project site that could pose an inundation hazard to the site.

Seiches

A seiche is a surface wave created when an inland body of water is shaken, usually by earthquake activity. There are no existing surface water bodies on or upstream of the site that could cause an inundation hazard to the site.

Mudflows and Debris Flows

Mud and debris flows are mass movements of dirt and debris that occur after intense rainfall, earthquakes, and severe wildfires. The speed of the slide depends on the amount of precipitation, steepness of the slope, vibration level, and alternate freezing and thawing of the ground. The project site is in a hilly area subject to forest fires and loss of vegetation, which makes it susceptible to debris' or mudflows. Much of the project site is on the lower slopes of the San Bernardino Mountains. The adjacent watersheds may be subject to large debris flows, especially in years after a fire. Debris volume calculations were performed and drainage culverts were sized to convey the bulked flows from a 10-year storm one year after a fire. The results are provided in the *Hydrologic and Water Quality Report* in Appendix I.

5.7.2 Thresholds of Significance

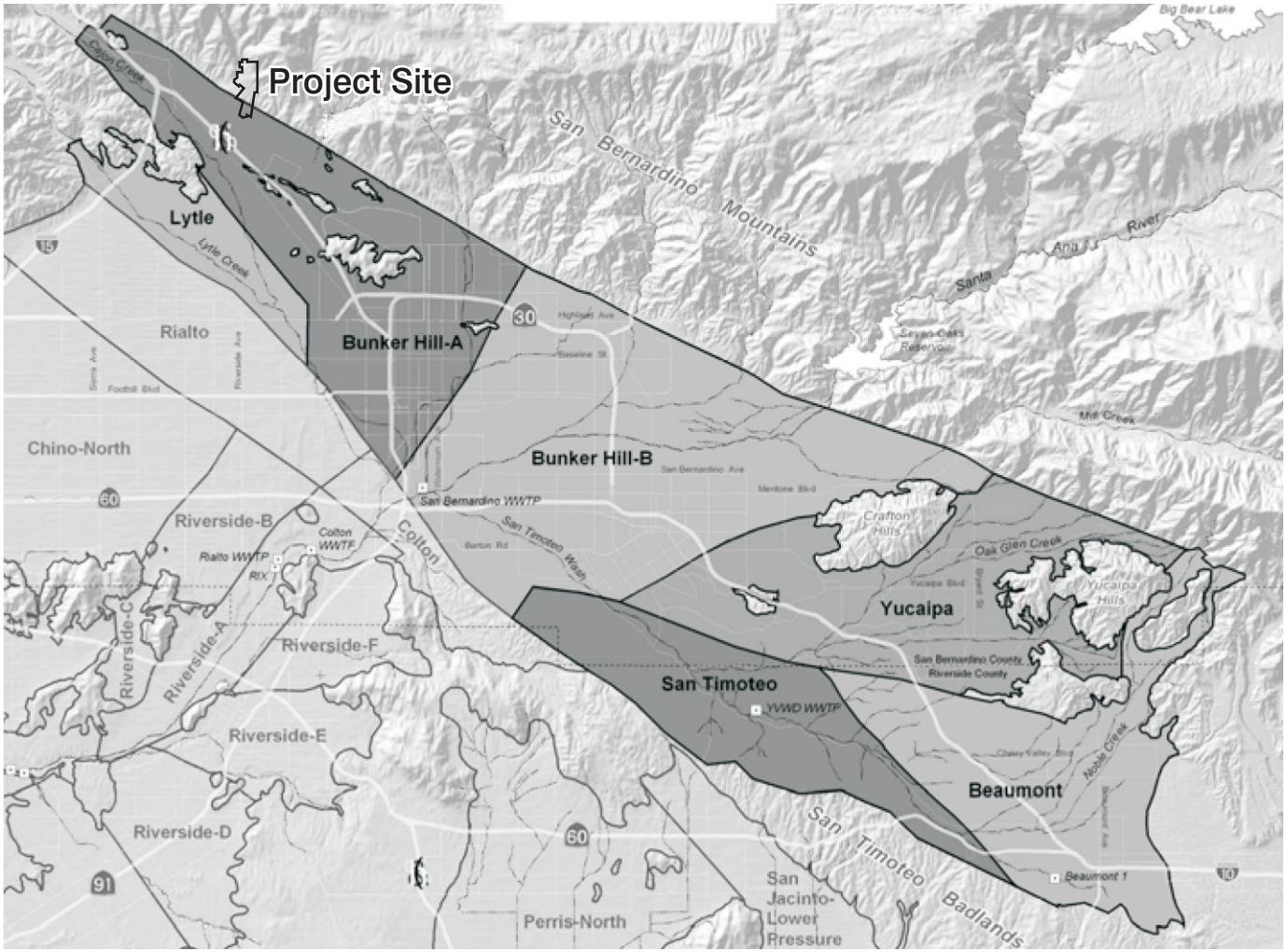
According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

HYD-1 Violate any water quality standards or waste discharge requirements.

HYD-2 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)?

HYD-3 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 a substantial erosion or siltation on- or offsite during construction?

Bunker Hill Groundwater Basin



0 4.75
Scale (Miles)

Source: Rick Engineering Company 2009

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HYD-4 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 offsite.

HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff, such as from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor areas?

HYD-6 Otherwise substantially degrade water quality.

HYD-7 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.

HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

HYD-9 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.

HYD-10 Inundation by seiche, tsunami, or mudflow.

5.7.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. Flood hazards due to tsunamis (part of HYD-10) were found to be less than significant in the Initial Study, included as Appendix A1 of this DEIR. The applicable thresholds are identified in brackets after the impact statement.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. Therefore the annexation would not contribute to impacts related to hydrology and soils.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground, In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground is proposed for the project site, as shown in Chapter 3, *Project Description*, in Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan*. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above-ground electric lines and the number of residential lots. Both scenarios are analyzed in this section to assess their respective impacts to hydrology and water quality.

IMPACT 5.7-1: DEVELOPMENT PURSUANT TO THE PROPOSED PROJECT WOULD INCREASE THE AMOUNT OF IMPERVIOUS SURFACES ON THE SITE AND WOULD THEREFORE INCREASE SURFACE WATER FLOWS INTO DRAINAGE SYSTEMS WITHIN THE WATERSHED. [THRESHOLDS HYD-4 AND HYD-5 (PART)]

Impact Analysis: Runoff from the project site in its existing condition as well as postdevelopment condition was modeled using the FloodSCX computer program and following the Unit Hydrograph methodology specified in the 1986 San Bernardino County Hydrology Manual. Since the preferred and alternative development plans would both result in similar amounts of impervious surface, the following analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Drainage from Offsite

At project completion, offsite drainage would enter the project site from the north and east. Two drainage courses within Drainage Area A that flow into the site from the north are Cable Canyon West and East Forks. These two drainages, which merge onsite, would remain undisturbed and would exit the west side of the site as they do now. Four drainages would enter the site from the east. The northerly two of these drainages are tributaries to Cable Canyon and are in Drainage Area A (see Figure 3-8, *Conceptual Drainage Plan*). These two drainages would pass through a culvert under proposed Street "A", merge and continue flowing westerly, pass through a culvert under proposed Street "DD", then continue to the southwest before merging with the West and East forks of Cable Canyon. This combined drainage then flows to the west and exits the site into Cable Creek. South of the project site the Cable Creek drainage would pass through culverts under the Secondary Access Road. The third drainage course that enters the site from the east would be collected in a proposed brow ditch north of proposed Street "O" and west of proposed Street "W". This drainage would then be conveyed around the water reservoir tank and discharged to an existing flow line. The last drainage course entering the site from the east consists of Meyers Canyon and tributary areas in Drainage Area D; Meyers Canyon enters the site near its southeast corner. A culvert crossing is proposed under the Primary Access Road (Street "A"). The routing of drainage from offsite through the project site is shown on Figure 3-8, *Conceptual Drainage Plan*.

Drainage from Onsite

Drainage from the site at project completion would be conveyed in a series of storm drain systems that would route water into three Extended Detention Basins for treatment and detention. Drainage areas onsite at project completion are described in Table 5.7-2 and shown in Figure 3-8, *Conceptual Drainage Plan*.

Table 5.7-2
Drainage Areas at Project Completion

Drainage Area	Area, Acres		
	Onsite	Offsite	Total
Drainage Area A			
Cable Canyon, West Fork	13.9	967.1	981.1
Cable Canyon, East Fork	24.2	551.5	575.7
Developed area north of Cable Canyon[1]	38.9	0.4	39.3
Cable Canyon (East)	22.1	295.7	317.8
Developed area south of Cable Canyon	40	0	40
Cable Canyon downstream of West and East Forks	17.8	34.9	52.7
Downstream of Basin A	1.3	30.4	31.7
Subtotal	**158.2**	**1880**	**2038.3**
Drainage Area B			
Area tributary to Basin B	23.4	0	23.4
Downstream of Basin B	4.6	0	4.6
Offsite drainage crossing "I" Street	4.9	12.6	17.5
Subtotal	**32.9**	**12.6**	**45.5**
Drainage Area C			
Area tributary to Basin C	89	0	89
Offsite drainage parallel to Street "A"	49.4	69.7	119.1
Subtotal	**138.4**	**69.7**	**208.1**
Drainage Area D			
Culvert crossing (Meyers Canyon, East Branch)	19.3	324	343.3
Total	**350.6**	**2286.3**	**2635.2**

[1] Developed areas 17.3 and 22 acres

Drainage Area A consists of Cable Canyon, including the west and east forks of Cable Canyon and tributary areas. In Drainage Area, A 35.6 acres of developed area onsite would drain into extended detention basin A, with the Q_{100} generated by such drainage being 127.4 cfs. Drainage from the two northernmost residential areas, north of Cable Canyon, would not be routed into an extended detention basin, but routed instead into media filtration vaults where the water quality volume would be treated, after which the runoff would be discharged into Cable Canyon. Water quality volumes for each detention basin that would be built as part of the project are listed in Table 5.7-3. One of these areas is 17.3 acres, while the second is 22.0 acres. Basin "A" compensates for this discharge from the site into Cable Canyon by overdetaining runoff from other parts of Drainage Area A onsite.

Table 5.7-3
Extended Detention Basins: Total Capacities and Water Quality Treatment Capacities

Basin	Watershed Area, Acres	$Q_{100\text{-}24}$ in (cfs)[1]	$Q_{100\text{-}24}$ out (cfs)	Water Quality Volume (acre-feet)	Total Volume (acre-feet)
A	40	77.9	19.4	2.63	6.69
B	23.4	46	25.1	1.47	2.37
C	89	168.2	66.4	5.90	11.85

[1] $Q_{100\text{-}24}$ is the maximum flow rate in a 100-year, 24-hour storm in cubic feet per second.

Drainage Area B, 45.5 acres in area, is divided into two subareas. Subarea 1 would be the developed area onsite of 21.8 acres that would be routed into basin "B" plus the 1.6-acre basin and 4.6 acres of open space downstream of the basin outlet. Subarea 2 would be 17.5 acres of onsite and offsite undeveloped area that would cross under Street "I" and then discharge into an existing flow line.

Drainage Area "C" consists of 209.8 acres, roughly 89.0 acres of which would be in the developed area onsite and would drain into basin "C". The remaining 107.8 acres would be onsite and offsite undeveloped areas that would be collected north of Street "H". The Q_{100} that would be produced by the 89.0 acres is 295.1 cfs that would outlet basin "C".

Drainage Area "D" consists of 339.3 acres: 319.8 acres offsite and 19.5 onsite. Drainage from Area "D" would enter the site near the southeastern site boundary, flow through a culvert under the proposed Primary Access Road (Street "A"), and then exit the site. This drainage would not be directed into a detention basin or media filtration vault.

Surface flows from the secondary access road will be conveyed into a 5-foot concrete drainage ditch located within a 13-foot graded shoulder on both sides of the road. The runoff will then be collected in storm drain inlets and conveyed through a storm drain underneath the secondary access road where it will be discharged into Cable Creek.

Detention Basin Capacities

Drainage volumes and rates from developed portions of the site would be increased compared to existing conditions due to the increase in impervious surfaces onsite. The three proposed detention basins would be local detention facilities maintained by the owner or homeowners association. The maximum capacity of each of the detention basins is designed to store onsite runoff from the drainage area tributary to the respective basin in order to lower the rate of outflow from the basin to the predevelopment rate in a 100-year, 24-hour storm. Each basin would also be equipped with water quality treatment features and would provide treatment for runoff. The total capacity and water quality treatment capacity of each of the three basins is listed in Table 5.7-3.

Emergency spillways are proposed for each of the three basins to convey the 1,000-year peak flow for the respective basin's tributary watershed. Emergency spillway discharges and dimensions are described in more detail in the Hydrology and Water Quality Report, included as Appendix I1.

Debris Flows and Culvert Sizes

The project site is in the foothills of the San Bernardino Mountains. Therefore, large debris flows may occur in watersheds in the area, especially in years after a fire. Debris flows would increase the volume of material flowing down drainages. Culverts in the project were designed to accommodate estimated debris flow volumes that would occur in a 100-year storm four years following a fire. Details of such calculations are presented in the project's Hydrology and Water Quality Report, included as Appendix I1. Recommended culvert sizes are listed in Table 5.7-4.

Table 5.7-4
Recommended Culvert Sizes

Drainage	Proposed Street Overcrossing	Recommended Culvert Size
Cable Canyon, East Branch	Streets "A" and "DD"	Five 8-foot by 16-foot reinforced concrete boxes (RCB)
Hillside area tributary to Street "A"	Street "A"	72-inch reinforced concrete pipe (RCP)
Hillside area tributary to Meyers Canyon, West Branch		84-inch RCP
Meyers Canyon, West Branch	Street "G"	Two 8-foot by 16-foot RCBs
Meyers Canyon, West Branch	Street "A"	Three 8-foot by 12.5-foot RCBs
Meyers Canyon, East Branch	Street "A"	Six 8-foot by 16-foot RCBs
Cable Creek	Secondary Access Road	Eight 26.5-foot by 14-foot Arch Culverts

Project drainage features would meet requirements of the San Bernardino County Hydrology Manual and would limit runoff from the site at project completion to existing levels.

IMPACT 5.7-2: DEVELOPMENT PURSUANT TO THE PROPOSED PROJECT WOULD INCREASE THE AMOUNT OF IMPERVIOUS SURFACES ON THE SITE. PROJECT DEVELOPMENT WOULD NOT SUBSTANTIALLY REDUCE GROUNDWATER RECHARGE COMPARED TO EXISTING CONDITIONS. [THRESHOLD HYD-2]

Impact Analysis: Project development would increase impervious surfaces on the project site. The resulting increase in drainage from most of the developed parts of the site would be conveyed to three extended detention basins. Stormwater would infiltrate into underlying sediment through the bottoms of the basins. The project would not include substantial infiltration zones except for the basins. The infiltration rate in the three basins would total roughly 2.01 cfs. At project completion, onsite groundwater recharge of stormwater from a two-year, 24-hour storm would be reduced about 1.3 percent compared to recharge from the same size storm in existing conditions (Cronquist 2009). Project development would not substantially reduce groundwater recharge from the site. Since the preferred and alternative development plans would have similar amounts of impervious surface, this analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.7-3: THE PROJECT SITE IS NOT WITHIN A 100-YEAR FLOOD HAZARD AREA. [THRESHOLDS HYD-7 AND HYD-8]

Impact Analysis: The entire project site is in FEMA flood hazard zone X, meaning that it is outside of both 100-year and 500-year flood plains. Project development would not result in flood hazards to people or structures or redirect flood flows within a 100-year flood hazard area. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.7-4: DURING THE CONSTRUCTION PHASE OF THE PROPOSED PROJECT, THERE IS THE POTENTIAL FOR SHORT-TERM UNQUANTIFIABLE INCREASES IN POLLUTANT CONCENTRATIONS FROM THE SITE. AFTER PROJECT DEVELOPMENT, THE QUALITY OF STORM RUNOFF (SEDIMENT, NUTRIENTS, METALS, PESTICIDES, PATHOGENS, AND HYDROCARBONS) MAY BE ALTERED. [THRESHOLDS HYD-1, HYD-5 (PART), AND HYD-6]

Impact Analysis:

Pollutants of Concern

Pollutants of concern are those for which receiving waters are listed as impaired on the 303(d) Water Quality Limited Segments list. Lytle Creek is listed as impaired by pathogens from an unknown nonpoint source, and Reach Four of the Santa Ana River is listed as impaired by pathogens from a nonpoint source.

Potential Historical Pollutant Sources

Potential existing sources of water pollutants onsite are pesticides from past agricultural use and illegal dumping.

Construction Phase

Potential sources of pollutants from construction activities on the site include exposed soil, construction materials, and construction equipment. Clearing, grading, excavation, and construction activities associated with Spring Trails may impact water quality due to sheet erosion of exposed soils and subsequent deposition of particles and pollutants in drainage ways. Grading activities in particular lead to exposed areas of loose soil, as well as sediment stockpiles, that are susceptible to uncontrolled sheet flow. The use of materials such as fuels, solvents, and paints also present a risk to surface water quality due to an increased potential for these materials and related pollutants to contaminate stormwater. Additionally, storage, refueling, and maintenance of construction equipment onsite result in the potential for fuels and other substances to contaminate stormwater. Since grading activities would be similar for both the preferred and alternative development plan, this construction analysis is applicable to both scenarios.

Storm Water Pollution Prevention Plan

Measures for reducing potential pollution from construction activities would include obtaining coverage under the General Construction Permit for discharges of stormwater runoff from the construction site. The General Construction Permit is the coverage issued by the SWRCB that allows the discharges of stormwater to waters of the United States from the construction project. In order to get coverage under the General Construction Permit, the discharge should be in compliance with NPDES and implement a Storm Water Sampling and Analysis Strategy for monitoring of construction site runoff. In order to obtain coverage under the General Construction Permit, the project owner would be required to submit a Notice of Intent to the SWRCB to file for permit coverage, and prepare and implement a SWPPP onsite. The NOI must be filed and the SWPPP must be prepared prior to commencement of soil-disturbing activities at the project site. The SWPPP must contain a site map(s) showing the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography before and after construction, and drainage patterns across the project. The SWPPP must list BMPs that would be used to protect stormwater runoff and describe the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program and a chemical monitoring program for "nonvisible" pollutants to be implemented if there is a failure of the BMPs.

Typical temporary BMPs that would be used during construction include good housekeeping practices and erosion and sediment control measures. Good housekeeping practices include street sweeping, waste disposal, vehicle and equipment maintenance, concrete washout area, materials storage, minimization of hazardous materials, and proper handling and storage of hazardous materials. Several categories of construction BMPs are described further below:

Erosion Control BMPs protect the soil surface by covering and/or binding it, thus preventing soil from entering stormwater runoff. These BMPs include soil stabilization measures such as erosion control mats, tackifier, or hydroseed. Similar BMPs are used to reduce wind erosion from construction sites.

Sediment Control BMPs are designed to intercept and filter out soil that has been detached and transported by flowing water. Typical sediment control BMPs include:

- Barriers such as silt fences, fiber rolls, gravel bags, temporary desilting basins, velocity check dams, temporary ditches or swales, and stormwater inlet protection.
- Street sweeping in areas where sediment can be tracked from the project site onto paved streets or roads.

Tracking Control BMPs stabilize construction entrance/exit points, as well as all construction roadways, to reduce the tracking of sediments onto paved streets and roads by construction vehicles.

Non-stormwater Discharges are discharges from a municipal stormwater conveyance that do not originate from precipitation events. BMPs that can be implemented in the proposed project's SWPPP to avoid or minimize nonstormwater discharges include conducting vehicle cleaning, fueling, and maintenance activities in designated areas that are sufficiently protected and contained; conducting paving and grinding operations during the dry season, where possible; and promptly reporting and cleaning up any illegal connections or illegal dumping.

Materials and Waste Management includes implementing procedural and structural BMPs for collecting, handling, storing, and disposing wastes generated by a construction project to prevent the release of waste materials into stormwater discharges. Materials and waste management BMPs that can be incorporated into the project's SWPPP include:

- All materials with the potential to contaminate stormwater runoff, including stockpiles of sediment, should be stored covered and in designated areas surrounded by berms or other barriers.
- Chemicals, drums, and bagged materials should be stored on pallets and not directly on the soil.
- Personnel should also be trained on the proper use of these materials.
- Spill cleanup procedures and kits should be made readily available near hazardous materials and waste.
- Solid waste should be collected on a regular basis and stored in designated areas.

Monitoring Program included in the SWPPP outlines storm event inspections of the site and a sampling plan in accordance with the General Construction Permit. The monitoring program would:

- Identify areas contributing to a stormwater discharge.
- Evaluate whether BMPs are effective in achieving the pollution reduction required by the General Permit.
- Evaluate whether additional control measures are needed.

- A sample of discharge shall be collected and analyzed upon the detection of any breach, malfunction, leakage, or spill that could result in the discharge of pollutants to surface waters that would not be visually detectable in stormwater.

Design standards for the BMPs are set forth by the County of San Bernardino and the California Storm Water Management handbooks. Construction BMPs for this project would be selected, constructed, and maintained so as to comply with all applicable ordinances and guidance documents.

Upon implementation BMPs as specified in the project's SWPPP, project construction would not result in substantial pollution of receiving waters.

Operations Phase

Pollutant sources that are expected to be generated by project operation are sediment/turbidity, nutrients, trash and debris, oxygen-demanding substances, bacteria and viruses, oil and grease, and pesticides. The builtout condition of the project site would be similar for both the alternative and preferred development plan and this analysis can be applied to both scenarios.

The residences surrounding the project site are reliant upon well water for their potable water usage. In some cases, these wells are relatively shallow, with a water table of approximately 50 feet or more. Although historical farming uses and the related fertilizers and other amendments have not had an impact on the water table, BMPs (see Tables 5.7-5 through 5.7-7) would be used to reduce contaminants in runoff from the project site, lessening any potential impacts to potable drinking water to nearby residences. Site design, source control, and treatment control BMPs as dictated by the County and City Stormwater management plans would be implemented. The project-specific WQMP would be required by the City of San Bernardino to address management of urban runoff from the project site, and specifically address site design, source control, and treatment control BMPs to minimize the impact of urban runoff from the project.

As described in Table 5.7-5, site design BMPs would be used to control and filtrate runoff from residential uses for collection in detention basins located at strategic points on the project site. On- and offsite stormwater would be collected and routed through a series of catch basins, inlets, and storm drain systems that would convey water to three extended detention basins for water quality treatment and detention. These systems would be designed and constructed in accordance with the City of San Bernardino and the San Bernardino County Flood Control District standards. Properly engineered basins reduce infiltration issues by adsorbing common residential chemicals into basin linings.

Table 5.7-5
Site Design BMPs Specified in Project WQMP

Requirement	Included Measure
1. Minimize Stormwater Runoff, Minimize Project's Impervious Footprint, and Conserve Natural Areas	
Conserve natural areas. This can be achieved by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	Offsite drainage courses entering the site would remain undisturbed, and 24 percent of the site area would remain undisturbed.
Construct walkways, trails, patios, overflow parking lots, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.	Hiking trails are proposed for the site. The trails would be constructed of decomposed granite (DG).
Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought-tolerant trees and large shrubs.	It is recommended that drought-tolerant plants be used in the landscape design. Where applicable, native trees and shrubs are to be preserved onsite.
Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	Decorative concrete would not be utilized in the landscape design. Landscape would be done in accordance with the City of San Bernardino landscaping design criteria.
Use natural drainage systems.	Infiltration would be used on the extended detention basins.
Construct onsite ponding areas, rain gardens, or retention facilities to increase opportunities for infiltration, while being cognizant of the need to prevent the development of vector breeding areas.	There are three extended detention basins proposed for the Spring Trails project. The outlet structure of the basins would be sized to match preproject condition peak flow rates, volume, velocities, and flow durations. The use of rain gardens (bioretention) would be utilized in the lots north of Cable Canyon.
2. Minimize Directly Connected Impervious Areas	
Where landscaping is proposed, drain rooftops into adjacent landscaping prior to discharging to the storm drain.	Roof drains draining into a landscape area/planter would be incorporated into the site design BMPs.
[Requirements for treating street runoff]	For locations where the residential development cannot be routed into an extended detention basin, combination of rain gardens and media filtration devices to treat the street runoff are proposed for the residential lots located north of Cable Canyon.
[Requirements for drainage from driveways and parking areas on residential lots]	Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under tires); or drain into landscaping prior to discharging to the municipal storm drain system.

Source: Rick Engineering Company 2009.

Table 5.7-6 describes the source control BMPs included in the site-specific WQMP. Successful implementation of these controls would reduce the amount of contaminants in surface flow and groundwater by controlling the contaminants at the source. In addition, it is unlawful for household hazardous chemical wastes to be disposed of in or on to a household property. The County of San Bernardino provides recycling centers nearby where these chemicals can be properly disposed.

Table 5.7-6
Source Control BMPs Specified in Project WQMP

BMP	Included Measure
Education of Property Owners	Education is necessary for the proper cleaning and disposal of debris, nutrients, metals, pesticides, and oil and grease that can wash into the watershed. Educational materials from San Bernardino County are included in WQMP, Attachment E. The Spring Trails owner shall distribute additional copies of handouts and posters. Property owners must familiarize themselves with the educational materials.
Activity Restrictions	Activities that would significantly impact receiving waters shall not be performed. Trash bin lids shall be closed at all times. Sweeping, blowing, dumping or hosing debris into the surrounding streets or storm drains is not allowed at any time. Conditions, covenants and restrictions in regards to water quality are to be developed by the HOA. Any additional activity restrictions shall require prior approval from appropriate governmental agencies regarding any activity that may affect surrounding areas or the downstream receiving waters.
Street Sweeping Private Street and Parking Lots	Responsibility of the HOA to sweep streets once a month.
Common Areas Catch Basin Inspection	Responsibility of the HOA.
Landscape Planning	Drought-resistant plants would be used when appropriate.
Hillside Landscaping	Fuel modification would be implemented into project design.
Roof Runoff Controls	Roof runoff would be directed to the surrounding landscape.
Efficient Irrigation	Water-conserving irrigation measures shall be used in the landscape to avoid washing nutrients off the site. Similar plants shall be grouped together, and irrigation should be used to minimize runoff form the project site due to overwatering. Maintenance of landscape shall be in accordance with the City of San Bernardino design guidelines or approved equivalent. Additionally, flow reducers or shutoff valves should be used in the irrigation to help in the case of a broken line or sprinkler.
Protect Slopes and Channels	Engineered slopes would be landscaped.
Storm Drain Signage	Inlets would be signed with a "No Dumping-Drains to River."
Inlet Trash Racks	Inlet trash racks would be used to prevent debris/trash from flowing downstream.
Energy Dissipaters	Rip-rap would be used to minimize erosion.
Trash Storage Areas and Litter Control	Trash storage areas would be provided in common areas.

Source: Rick Engineering Company 2009.

Water Quality Management Plan

A WQMP (Appendix I1) was prepared for the project and specifies site design, source control, and treatment control BMPs as required by the San Bernardino County Stormwater Program Model Water Quality Management Plan Guidance. The combination of site design BMPs, source control BMPs, and treatment control BMPs incorporated into the project plans must address the potential pollutants for the project, identified above. The WQMP includes BMPs that would be implemented during both design and operation of the project, such as:

Site Design BMPs reduce the volume and rate of runoff, thus reducing the amount of stormwater that must be treated, by such means as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas. Site design BMPs that would be included in the proposed project are specified in Table 5.7-5.

Source Control BMPs reduce the potential for urban runoff and pollutants from coming into contact with one another. Source control BMPs specified in the WQMP for inclusion in the project are listed in Table 5.7-6.

Treatment Control BMP is any engineered system designed and constructed to remove pollutants from urban runoff onsite before the pollutants can enter the receiving waters. The primary pollutants of concern for the receiving waters are pathogens. Treatment control BMPs that would be incorporated into the project are:

- **Extended Detention Basin:** An extended detention basin is a water quality basin designed to detain and slowly release the design volume in at least 48 hours. The design of extended detention basin should be such that half of the design volume drains out in not less than 24 hours and the total volume drains out in less than 72 hours to avoid vector breeding. The design of the basin should incorporate a slope toward the outlet, vegetation at the bottom, and slopes to allow for infiltration while avoiding groundwater contamination. The extended detention basin can also work as flood control measure by addition of flood detention storage. Outlet of such basins should be protected against erosion and debris flow by proper protective measures. Extended detention basins are simple to construct and operate; they also remove sediments and the toxics associated with particulates.

- **Bioretention (Rain Garden):** The bioretention BMP functions as a soil- and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. The facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The runoff velocity is reduced when it passes over or through the buffer strip and is subsequently distributed evenly along a ponding area. Exfiltration of the stored water from the bioretention area planting soil into the underlying soils occurs over a period of days. The vegetation provides shade and wind breaks, absorbs noise, and improves an area's landscape.

- **Water Quality Inlets:** A water quality inlet is a device that works on sedimentation of coarse materials and separation of free oil from stormwater. It removes oil and grit from stormwater runoff before the water enters the storm drain system. According to Filterra—a company that makes water quality filters—the pollutant removal for their "water quality inlets/bioretention system ranges from Medium to High, following ratings based on Caltrans Treatment Technology Report (April 2008)."

The WQMP describes long-term operation and maintenance requirements for BMPs, as listed in Table 5-7-7. The project applicant would be responsible for carrying out all BMP operations and maintenance activities.

Table 5.7-7
BMP Operations and Maintenance Requirements

BMP	Operations and Maintenance Activities	BMP Start Date	Frequency
Storm Drain Signage	Inspect system signage for fading or vandalism and repair/replace if needed. "NO DUMPING – DRAINS TO RIVER"	At the installation of storm drains	The signage shall be monitored yearly.
Trash Storage Areas	Wastes (debris, vegetation, etc) shall be properly disposed of in a hazardous waste facility. After a storm event, the trash areas should be monitored for vector habitats.	At project completion	Trash areas shall be checked before and after a major storm event, as well as on a monthly basis to reduce debris.
Landscaping and Irrigation	Inspect landscaping and irrigation systems and repair/replace if needed.	At project completion	The landscaping and irrigation systems shall be monitored monthly.
Education of Property Owners	Educational materials, from San Bernardino County, are included in the WQMP, Attachment E. The HOA shall distribute additional copies of handouts.	At project completion	The educational material provided shall be reviewed yearly as well as when there is a change in ownership.
Activity Restrictions	Any activity that may affect surrounding areas or the downstream receiving waters (such as car washes or leaving trash bin lids open) is strictly prohibited.	At project completion	Trash areas shall be checked before and after a major storm event, as well as on a monthly basis to reduce debris.
Street Sweeping	A street sweeper shall clean the privately maintained streets and parking areas to reduce debris.	After site is cleared and streets are paved	A street sweeper shall clean monthly and before any known storm event.
Extended Detention Basin	Maintain the basin floor and inlets/outlets free of debris, silt, and trash.	At project completion	At least every 6 months and before the rainy season stars.
Media Filtration System	Units shall be inspected for sediment and oil buildup and these pollutants shall be removed and disposed of per the manufacturer's recommendations, with a recommended inspection once a year and actual media replacement every 3 to 4 years depending on rainfall.	At project completion	At least every 12 months and before the rainy season stars.

Source: Rick Engineering Company 2009.

Prior to building or grading permit closeout or the issuance of a certificate of occupancy or certificate of use, the applicant shall demonstrate: that all structural BMPs have been constructed and installed in conformance with approved plans and specifications; that the applicant is prepared to implement all nonstructural BMPs described in the approved project-specific WQMP; and that an adequate number of copies of the approved project-specific WQMP are available for the future owners/occupants.

After implementation of site design, source control, and treatment control BMPs, as specified in the project's WQMP, project operation would not cause substantial pollution of receiving waters.

IMPACT 5.7-5: THE SITE WOULD NOT BE SUBJECT TO INUNDATION BY SEICHE OR DAM FAILURE. DEVELOPMENT OF THREE RESERVOIRS ONSITE AS PART OF THE PROJECT WOULD NOT CREATE SUBSTANTIAL FLOODING HAZARDS DUE TO SEICHES. [THRESHOLDS HYD-9 AND HYD-10 (PART)]

Impact Analysis: There are no dams or enclosed bodies of water upstream from the project site that could pose a hazard of flooding to the site due to a seiche or the failure of a dam. The project would involve construction and operation of three reservoirs onsite; the locations of the reservoirs are shown in Figure 3-9, *Conceptual Drainage Plan*. The reservoirs would have capacities of 900,000 gallons, 900,000 gallons, and 2,500,000 gallons. The reservoirs would be enclosed tanks (O'Neill 2009b), the design and construction of which would comply with existing seismic safety regulations. The reservoirs that would be developed as part of the project would not pose a substantial risk of flooding due to seiches. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.7-6: PROJECT DEVELOPMENT WOULD NOT PLACE HABITABLE STRUCTURES OR ROADWAYS IN THE PATHS OF DEBRIS FLOWS EXPECTED TO OCCUR IN A 100-YEAR STORM. [THRESHOLD HYD-10 (PART)]

Impact Analysis: Much of the project site is on the lower slopes of the San Bernardino Mountains. Large debris flows may occur in local watersheds, especially in years after a fire. After project development, debris flows originating upstream of the project site may flow through drainages crossing the site; debris flows are not expected to originate onsite (O'Neill 2009a). Culverts where drainages on the site would cross under roadways have been designed to accommodate the increase in volume due to sediment that would occur in a debris flow. All proposed improvements, including building pads, roads, and reservoirs, would be outside of the area that would be flooded by debris flows during a 100-year storm (Figueroa 2009). Project development is not expected to create substantial hazards to persons arising from debris flows. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.7.4 Cumulative Impacts

Runoff and Storm Drainage Capacity

The related projects are development projects that would increase the amount of impervious surfaces and consequently cause increased runoff within the Santa Ana River Watershed. Each related project would be required to include project features that would detain onsite any increase in runoff from 100-year storm events until after the storm. After the construction and operation of required drainage features within related projects, substantial cumulative impacts to the capacity of the storm drainage system in the region are not expected to occur. Given that the proposed project would also be required to include drainage features so that the proposed project would not cause a net increase in runoff into the existing storm drainage system in the region, the proposed project is not anticipated to have a cumulatively considerable adverse impact on storm drainage capacity. This analysis of cumulative impacts to runoff and drainage is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Water Pollutants

Reach Four of the Santa Ana River, downstream from the vicinity of the project site, is included on the 303(d) list as impaired by pathogens (bacteria and viruses). Therefore, pathogens are pollutants of concern in the vicinity of the project site.

Other projects in the Santa Ana Watershed can be expected to increase the amounts of contaminants that could enter stormwater. However, other projects would be required to comply with the same NPDES regulations for minimizing water pollution as would the proposed project. Related projects would be required to prepare and implement SWPPPs and WQMPs, specifying BMPs that would be used to minimize contaminants discharged into receiving waters. After compliance with existing regulations, cumulative impacts to water quality are not expected to be substantial, and the proposed project is not anticipated to have cumulatively considerable impacts on water quality. This analysis of cumulative impacts to water quality is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.7.5 Existing Regulations and Standard Conditions

Federal

- Clean Water Act
    - National Pollutant Discharge Elimination System
- Safe Drinking Water Act
- National Flood Insurance Program

State

- Porter-Cologne Water Quality Act

San Bernardino County

- San Bernardino County Hydrology Manual
- San Bernardino County Stormwater Program Model Water Quality Management Plan Guidance

5.7.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.7-1, 5.7-2, 5.7-3, 5.7-4, 5.7-5, and 5.7-6.

5.7.7 Mitigation Measures

No significant impacts have been identified, and no mitigation measures are required.

5.7.8 Level of Significance After Mitigation

No significant impacts have been identified.

5.8 LAND USE AND PLANNING

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts to land use in the City of San Bernardino and its sphere of influence (SOI) from implementation of the proposed Spring Trails Residential Project and the annexation of an adjacent 26.4-acre area into the City.

The analysis in this section is based in part on the following technical reports:

- *Spring Trails Fire Protection Plan*, Fire Safe Planning Solutions, December 15, 2008
- *Precise Fuel Modification Plan*, Firesafe Planning Solutions, February 28, 2009

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendices G, H1, and H2).

Land use impacts can be either direct or indirect. Direct impacts are those that result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other sections of this DEIR.

5.8.1 Environmental Setting



Applicable Land Use Plans, Policies, and Regulations

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG is the federally recognized Metropolitan Planning Organization (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region's MPO, SCAG cooperates with the Southern California Air Quality Management District (SCAQMD), the California Department of Transportation (Caltrans), and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives. The plans most applicable to the proposed project are discussed below.

The proposed project is not considered a project of regionwide significance pursuant to the criteria outlined in SCAG's Intergovernmental Review Procedures Handbook (November 1995) and Section 15206 of the CEQA Guidelines, as it does not encompasses more than 500 residential units. However, this section addresses the project's consistency with applicable regional planning guidelines and policies for informational purposes.

Regional Comprehensive Plan

The 2008 Regional Comprehensive Plan (RCP) is a major advisory plan prepared by SCAG that addresses important regional issues like housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in southern California for their information and voluntary use for preparing local plans and handling local issues of regional significance.

The RCP presents a vision of how southern California can balance resource conservation, economic vitality, and quality of life. The RCP identifies voluntary best practices to approach growth and infrastructure challenges in an integrated and comprehensive way. It also includes goals and outcomes to measure southern California's progress toward a more sustainable region. The proposed project's consistency with the advisory and voluntary goals and policies of the 2008 RCP is analyzed in detail later in Table 5.8-2.

Regional Transportation Plan

SCAG has also adopted the Regional Transportation Plan (RTP) to help coordinate development of the region's transportation improvements. On May 8, 2008, SCAG adopted the 2008 Regional Transportation Plan: Making the Connections. The 2008 RTP is a $531.5 billion plan that emphasizes the importance of system management, goods movement, and innovative transportation financing. It provides a regional investment framework to address the region's transportation and related challenges, and looks to strategies that preserve and enhance the existing transportation system and integrate land use into transportation planning. The 2008 RTP is based on Compass Blueprint 2% Strategy land use projections, which are not consistent with San Bernardino County and city General Plan Land Use Elements. The proposed project's consistency with the applicable RTP policies is analyzed in detail later in Table 5.8-3.

Compass Growth Vision

In 2004, SCAG adopted the Compass Growth Vision (CGV), which is a response, supported by a regional consensus, to the land use and transportation challenges facing southern California. SCAG developed the CGV in an effort to maintain the region's prosperity, continue to expand its economy, house its residents affordably, and protect its environmental setting as a whole. The CGV is a framework that assists local jurisdictions address growth management cooperatively and also helps coordinate regional land use and transportation planning. The CGV is driven by four key principles:

- Mobility. Improve mobility for all residents
- Livability. Foster livability in all communities
- Prosperity. Enable prosperity for all people
- Sustainability. Promote sustainability for future generations

To realize these principles on the ground, the CGV encourages:

- Focusing growth in existing and emerging centers and along major transportation corridors
- Creating significant areas of mixed-use development and walkable communities
- Targeting growth around existing and planned transit stations
- Preserving existing open space and stable residential areas

In conjunction with the CGV, SCAG also adopted the Compass Blueprint 2% Strategy, which is the part of the 2004 regional growth forecast policy that attempts to reduce emissions and increase mobility through strategic land use changes. The 2% Strategy is a guideline for how and where the CGV for southern California's future can be implemented. Through extensive public participation and land use and transportation modeling and analysis, the program has resulted in a plan that identifies strategic growth

opportunity areas (2% Strategy Opportunity Areas). These opportunity areas are roughly 2 percent of the land area in the southern California region, where cities and counties can reap the maximum benefits from regional planning implemented in cooperation and partnership with the local community. Goals for the 2% Strategy Opportunity Areas include locating new housing near existing jobs and new jobs near existing housing, encouraging infill development, promoting development with a mix of uses, creating walkable communities, providing a mix of housing types, and focusing development in urban areas. The project site is not within any designated Compass 2% Strategy Opportunity Areas (SCAG 2009). Although the CGV is an advisory policy and cities are not required to be consistent with it, an analysis of the proposed project's consistency with the advisory CGV policies is provided later in Table 5.8-4.

San Bernardino National Forest Land and Resource Management Plan

The northern portion of the project site (approximately 160 acres) is located within the boundaries of the San Bernardino National Forest (SBNF). Long-range goals and objectives for management of the SBNF are set forth in the San Bernardino National Forest Land and Resource Management Plan, adopted in 1988. The forest plan establishes the management and associated long-range goals and objectives for the SBNF; specifies standards, guidelines, approximate timing, and vicinity of the practices necessary to achieve that direction; and establishes monitoring and evaluation requirements and standards needed to ensure that the direction is carried out and to determine how well outputs and effects were predicted.

Although the project site is partially within the SBNF, the land is privately owned and is not part of the forest plan. The Record of Decision of the San Bernardino National Forest Land Management Plan, written by the Regional Forester for the Pacific Southwest Region, establishes the land to be included in the forest plan. The decision "…applies only to the San Bernardino National Forest and does not apply to any other federal, state, or private lands, although the effects to these lands and the effects of [the] decision on lands surrounding the national forest have been considered."

Forest Service Roadless Area Conservation Plan

In 1999 the US Forest Service (USFS) proposed to prohibit road construction and reconstruction in inventoried roadless areas within national forests. The service determined that areas without roads have inherent values and characteristics that are becoming scarce in an increasingly developed landscape. The inventoried roadless areas provide significant opportunities for dispersed recreation, sources of public drinking water, and large undisturbed landscapes that provide privacy and seclusion. In addition, these areas serve as bulwarks against the spread of invasive species, often provide important habitat for rare species, and provide opportunities for monitoring and research. Therefore, the purpose of the proposed roadless area conservation rule was: 1) to immediately stop activities that have the greatest likelihood of degrading desirable characteristics of inventoried roadless areas, and 2) to ensure that ecological and social characteristics of inventoried roadless areas are identified and considered through local forest planning efforts.

That portion of the SBNF surrounding the project site (at the project boundary), and continuing in the northwesterly direction is identified as an inventoried roadless area. The project site is not in an inventoried roadless area. See Figure 5.8-1, *Inventoried Roadless Areas.*

Local

County of San Bernardino General Plan

The project site and the adjacent 26.4-acre annexation area is in San Bernardino County and in the City of San Bernardino's unincorporated sphere of influence. The site is currently subject to County of San

Bernardino's General Plan and Zoning Code. As shown in Figure 4.6, *Land Use Designations*, under the County's General Plan, the northern portion of the site, approximately 160 acres, is designated as private unincorporated land within the San Bernardino National Forest. All public national forest land surrounding the northern portion of the site is designated as Resource Conservation (RC) in the County's General Plan. Since the site is privately owned, it is not designated RC. The southern portion of the site, approximately 190.6 acres, is designated Rural Living (RL-5), which allows up to one dwelling unit per five acres. The northern portion of the adjacent 26.4-acre annexation area is designated Rural Living (RL-5) and the southern portion of the annexation area is designated Single Residential (RS-1), which allows up to one dwelling unit per acre.

City of San Bernardino General Plan

Since the project site and the adjacent 26.4-acre annexation area are within the City of San Bernardino's SOI, the entire project site and annexation area is currently prezoned by the City as Residential Estate (RE), allowing one dwelling unit per acre.

Future development of all land within the City of San Bernardino is guided by the City's General Plan. The General Plan consists of a series of state-mandated and optional elements to direct the City's physical, social, and economic growth. Elements within the City of San Bernardino General Plan (adopted in 2005) are Land Use, Housing, Economic Development, Community Design, Circulation, Public Facilities and Services, Parks, Recreation and Trails, Utilities, Safety, Historical and Archeological Resources, Natural Resources Conservation, Energy and Water Conservation, and Noise. A description of these elements and their components are described below. The proposed project's consistency with the various elements of the City of San Bernardino General Plan is addressed later in this section.

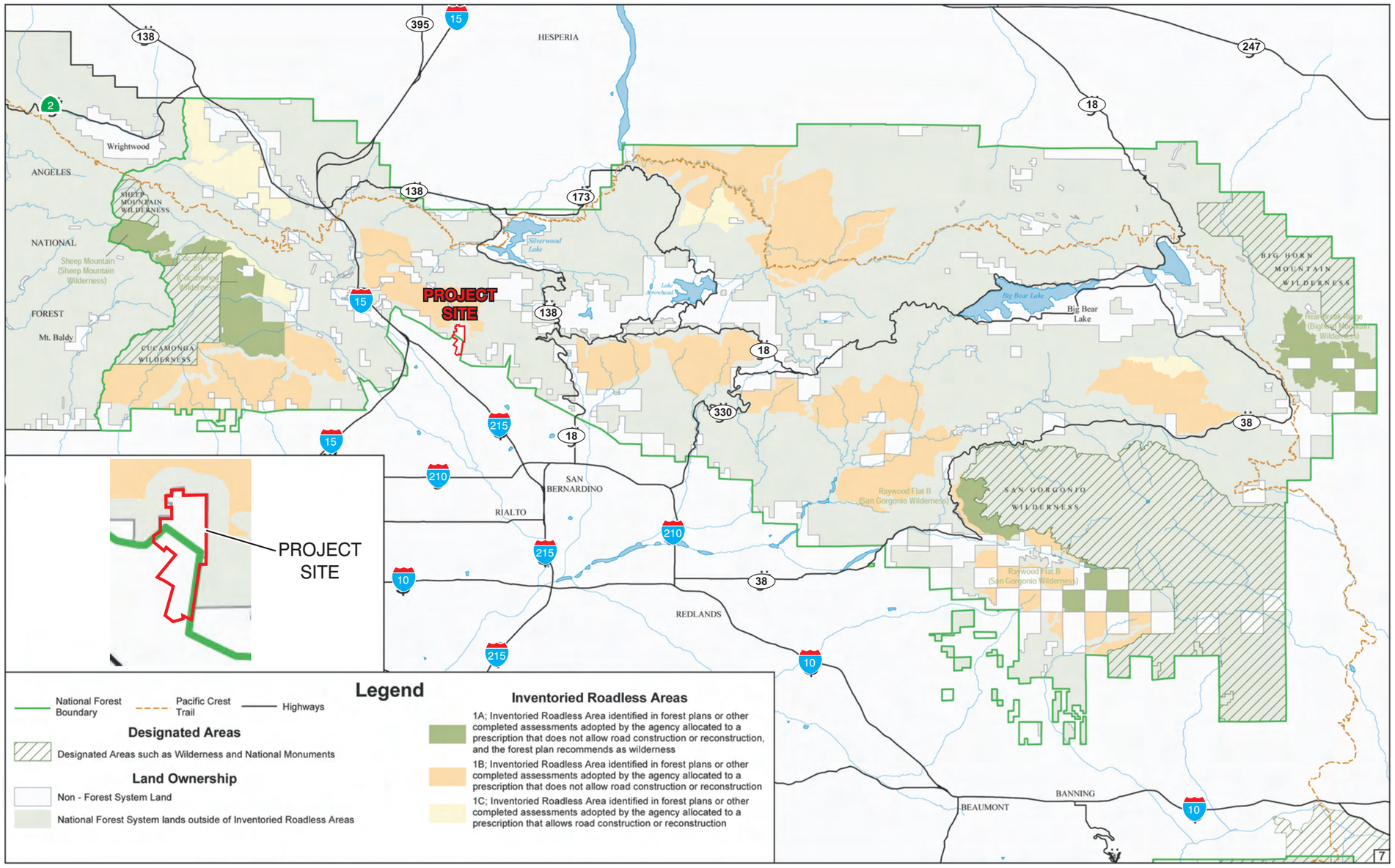
Land Use Element: The Land Use Element functions as a guide to planners, the general public, and decision makers as to the ultimate pattern of development. It designates general site development standards and the distribution, location, and extent of land uses, such as housing, business, industry, open space, natural resources, recreation, and public/quasi-public uses. The Land Use Element also discusses the standards of residential density and nonresidential intensity for the various land use designations.

Housing Element: The purpose of the Housing Element is to identify current and projected housing needs in San Bernardino and set forth goals, policies, and programs that address those needs. The Housing Element has been prepared to meet the requirements of state law and local housing objectives. In addition, the revised Housing Element updates the previous Housing Element by incorporating new information and reflecting community concerns related to housing in the City of San Bernardino.

Economic Development Element: The purpose of the Economic Development Element is to guide the City in expanding the local economy, which provides jobs, attracts and retains businesses, supports diverse and vibrant commercial areas, and brings in sufficient revenue to support local programs and services. To achieve a balanced and healthy economy, the Economic Development Element sets forth the goals and policies necessary to ensure a prosperous economic future and maintain the quality of life within the community.

Community Design Element: This element provides policy guidance that respects San Bernardino's diverse context while seeking to unify the City through carefully crafted design policies. This element addresses aesthetic issues related to community wide design issues, district or neighborhood aesthetic consideration, and individual land use design considerations.

Inventoried Roadless Areas



Source: United States Department of Agriculture, Forest Service, September 2005

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Circulation Element: The major purpose of this Element is to design and improve a circulation system to meet the current and future needs of all its residents. Such a system should have the following three components: equity, efficiency, and foresight. It should be accessible to all economic segments of the City to make their lives more convenient and practical. It should make use of existing infrastructure wherever practical. Finally, it should preserve important transportation routes for future planning needs.

Public Facilities and Services Element: The Public Facilities and Services Element identifies the City's goals, policies, and programs concerning the provision of public facilities and services, including Fire Protection and Emergency Services, Police Services, Schools, Community Centers, Libraries, and Cultural Facilities. It supports the Land Use Element by establishing the service standards necessary to support a growing population.

Parks, Recreation and Trails Element: The Parks, Recreation and Trails Element provides policy guidance that addresses the acquisition, development, maintenance, and standards for our recreation and trail resources.

Utilities Element: The Goals and Policies in this element are intended to maintain and/or improve the level of utility services provided to existing and future residents. The goals and policies governing utilities in San Bernardino are also intended to ensure that utility services in the City keep pace with new development.

Safety Element: This element specifically addresses the way in which the City will prepare and respond to fire hazards, geologic and seismic hazards, and flood hazards. The Safety Element provides background information related to each issue and identifies hazard locations within the City, risk-reduction strategies, and hazard abatement measures that can ultimately be used by decision makers in their review of projects. Policies also address ways to minimize any economic disruption and accelerate the City's recovery following a disaster.

Historical and Archeological Resources Element: This element provides policy guidance that addresses the preservation and reuse of the City's historical and archaeological resources.

Natural Resources Conservation Element: The Goals and Policies in this element are intended to maintain, improve, or preserve the quality and supply of the City's natural resources. This Element addresses biological, sources, natural features, mineral resources, and air quality.

The Spring Trails project site lies in one of the biological resource management areas, which are detailed in this element of the general plan. The policies affecting development in these areas are detailed in Section 5.3, *Biological Resources*.

Energy and Water Conservation Element: The Energy and Water Conservation Element provides policy guidance that addresses the efficient use and conservation of our valuable energy and water resources.

Noise Element: The Noise Element provides policy guidance that addresses the generation, mitigation, avoidance, and the control of excessive noise. Specifically, this Element addresses the following issues:

- Land use
- Transportation related noise generated from roadways, passenger and freight railroad operations, and air flights

- Spillover noise from activities such as construction, leaf blowers, and commercial/industrial operations.

City Sphere of Influence

The Spring Trails site was placed in the City of San Bernardino's Sphere of Influence in September 1996, when the Local Agency Formation Commission approved a sphere of influence expansion for the City of San Bernardino. A sphere of influence, as defined by California Government Code, is a "plan for the probable physical boundaries and service area of a local agency as determined by the Commission." While the land is in the sphere of influence, the county retains land use authority. Under the County of San Bernardino's authority, the County General Plan designated approximately 160 acres in the northern portion of the site as private unincorporated land and approximately 190.6 acres in the southern portion of the site Rural Living (RL-5), which allowed up to one dwelling unit per five acres.

The proposal includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. The area is adjacent to the west of the project site along Meyers Road and currently has four occupied, multiple-acre lots. As shown in Figure 4.6, the parcels are currently designated Single-Family Residential (RS-1) and RL-5 under the County. The 26.4-acre area adjacent to Spring Trails is being included in the annexation element of the proposed project to prevent the creation of a county island within the City of San Bernardino. The creation of an island is not allowed under regulations governing the Local Agency Formation Commission. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant.

The proposed project includes a request for annexation of the project site and adjoining parcels (a total of approximately 377 acres) into the City of San Bernardino. The annexation process would begin pending approval of the project application by the San Bernardino Common Council.

City of San Bernardino Development Code

The City's Development Code is the primary tool for implementing the General Plan; it provides development standards, identifies allowed uses, and specifies other regulations. The Development Code provides detailed guidance for development based on and consistent with land use policies established in the General Plan.

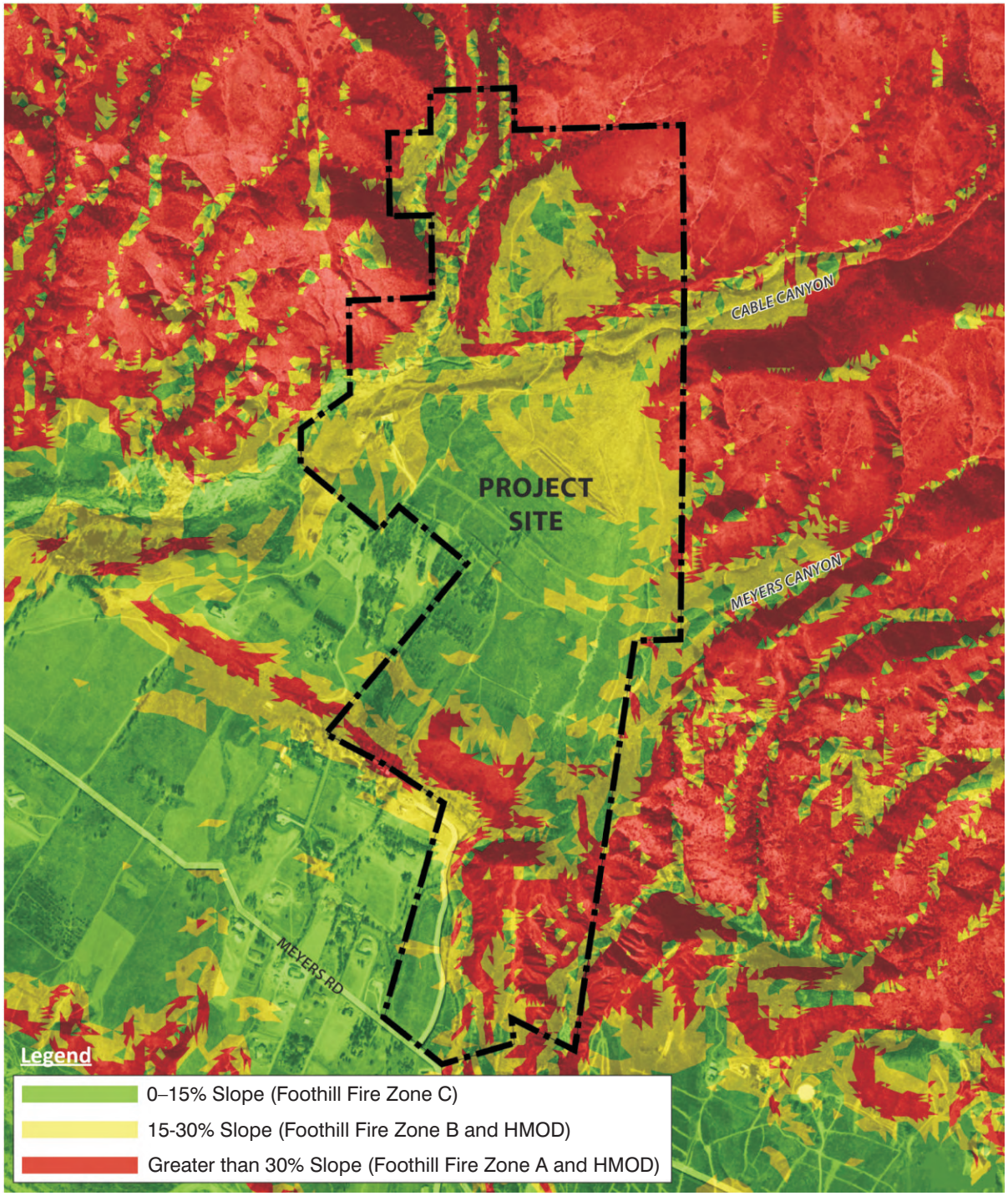
Foothill Fire Zone Overlay District (Chapter 19.15)

The entire project site is within Very High Hazard Severity Zone as designated by the California Department of Forestry and Fire Protection (CAL FIRE). Once annexed to the City, it would also be in the Foothill Fire Zone Overlay District (FF District). The overlay district designates three zones within the wildland interface:

- Fire Zone A (Extreme hazard) – characterized by slopes over 30 percent
- Fire Zone B (High Hazard) – characterized by slopes 15–30 percent
- Fire Zone C (Moderate Hazard) – characterized by slopes less than 15 percent

As shown on Figure 5.8-2, approximately 121 acres are in Fire Zone A, 112 acres in Fire Zone B, and 119 acres in Fire Zone C. The FF Overlay District specifies development standards for all new development relating to access and circulation, site and street identification, roadside vegetation, water supply, erosion control, construction and development design, and miscellaneous items.

Topography (Fire Zones and Hillside Management Overlay)



NOT TO SCALE

Source: Google Earth

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Hillside Management Overlay District (Chapter 19.17)

The purposes of the Hillside Management Overlay District (HMOD) is to provide for low-density residential development in City hillside areas. The foothill area is defined as having a 15 percent or greater slope. The intent is to encourage environmentally sensitive residential development that complements the natural and visual character of the hillsides. The HMOD specifies maximum density based on topography and a slope-density formula. In addition to density, development standards in Chapter 19.15 regulate setbacks, building height, ingress and egress, and street design. The HMOD also includes performance standards. The intent of the HMOD is to encourage a sensitive form of development while allowing for residential uses that complement the natural and visual character of the City and its hillsides. HMOD standards apply to average slopes of 15 percent or greater. Slopes less than 15 percent at the base of the hillsides are excluded from the density and development provisions of the Overlay. Figure 5.8-2 shows the areas within Spring Trails with slopes greater than 15 percent and currently within the HMOD.

City of San Bernardino Municipal Code

City of San Bernardino Tree Ordinance (Municipal Code Section 19.28.090)

The City of San Bernardino has adopted an ordinance that is designed to conserve important tree resources. The text of the ordinance is:

> Removal of healthy, shade providing, aesthetically valuable trees shall be discouraged. In the event that more than five trees are to be cut down, uprooted, destroyed or removed within a 36 month period, a permit shall first be issued by the Department of Parks, Recreation and Community Services.
>
> Prior to any permit issued for tree removal, all existing trees onsite shall be surveyed by the Department of Parks, Recreation and Community Services at the developer's expense. Unless there is a preapproved tree replacement plan, each tree that is removed in a new subdivision and is considered to be of significant value by the Department shall be replaced with a 36-inch box specimen tree in the subdivision, in addition to any other required landscaping. Such a plan does not necessarily require a tree-for-tree replacement provision. Commercial tree farms, City government projects, and individual, single-family residential lots less than one acre shall be exempt from this provision.



Existing Onsite Land Uses

The project site is on the northern edge of the City of San Bernardino in the foothills of the San Bernardino Mountains. The site is approximately 1.5 miles east of the unincorporated community of Devore and the junction of I-215 and I-15. Spring Trails is bounded by the San Bernardino National Forest on three sides and Verdemont on the southern side. The northern portion of the project site is in the San Bernardino National Forest, which is typically undisturbed natural open space. See Chapter 4, *Environmental Setting*, Figure 4-3.

The project site is vacant with the exception of one single-family residence in the western portion, south of Cable Canyon. Vegetation on the site has substantially recovered from several fires and again supports a diversity of habitat types. The adjacent 26.4-acre annexation area consists of six rural residential parcels, four of which are occupied with residences and related structures. Access to four of the parcels is from Meyers Road, with the remaining two obtaining access from Martin Ranch Road prior to entering the project site. There is no planned development for this adjacent area.

Three 115-kilovolt Southern California Edison (SCE) transmission lines traverse the western portion of the site from north to south. SCE also has an access easement over the project site to service these transmission lines.

Existing Surrounding Land Uses

The general vicinity of the site is rural in character, and the northerly portion of the site is within the SBNF, which is typically undisturbed natural open space. The area abutting the southwesterly and southerly boundaries are characterized by estate residential development along Martin Ranch Road and Meyers Road. Development near Little League Drive and Belmont Avenue consists of the Belmont Elementary School and tract development in the Low Residential density (up to three dwelling units per acre). Photographs of the site and surrounding land uses are included in Figures 4.1 through 4.5.

North. Federally managed land in the SBNF (designated as Resource RC in the County of San Bernardino General Plan).

East. Federally managed land in the SBNF (RC in county general plan).

South. General Plan Land Use within the City is Residential Estate (RE) and Residential Low (RL), with a Hillside Management Overlay District (HMOD). Parcels ranging in size from three to five acres characterize existing development along Meyers Road, and single-family residential and accessory agricultural uses are predominant. Further to the southeast along Little League Drive, parcel sizes average one acre (zoned RE); along Palm Avenue parcels average 10,800 square feet (zoned RL); and continuing to the east along Olive and Walnut avenues, parcels average approximately 7,200 square feet (zoned RS).

West. The General Plan Land Use within the City limits is Residential Estate (RE), and those portions within the County are generally zoned Rural Living (RL). The northerly boundary of the project site is within the National Forest Boundary (County- zoned RC). Lands within the National Forest are undisturbed open space. Estate-sized parcels are prevalent along Martin Ranch Road. Lots range in size from 2.5 acres along Martin Ranch Road, to over 5 acres further east and along Cable Canyon Road. Continuing west, within the community of Devore (County Land Use designation RS-1), rural single-family residences and associated agricultural activities (primarily animal keeping) are predominant, and lot size varies from approximately 0.5 acre to over 5 acres.

The adjacent 26.4-acre area that is part of the proposed annexation is designated by the County as RL-5 on the upper portion and RS-1 on the lower portion. Under these designations, the area could be developed with up to 21 single-family lots. There are currently four homes in this area.

5.8.2 Thresholds of Significance

According to the City of San Bernardino CEQA Checklist and Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

LU-1 Physically divide an established community.

LU-2 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.

LU-3 Conflict with any applicable habitat conservation plan or natural community conservation plan.

LU-4 Be developed within the Hillside Management Overlay District.

LU-5 Be developed within Foothill Fire Zones A and B, or C as identified in the City's General Plan.

LU-6 Be developed within the Airport Influence Area as adopted by the San Bernardino International Airport Authority.

The Initial Study, included as Appendix A1, substantiates that impacts associated with the following thresholds would be less than significant: LU-1 and LU-6.

These impacts will not be addressed in the following analysis.

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development would occur on these parcels as part of the proposed project. Therefore the annexation would not contribute to impacts related to land use in the City and its SOI.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the SCE overhead lines that traverse the western portion of the site will be located underground. In the event the lines cannot be located underground, an alternative plan accommodating the lines above ground is proposed for the project site, as shown in Chapter 3, *Project Description*, in Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan*. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above-ground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units (303 new units and 1 existing residence. A statistical analysis of the alternative plan is provided in Chapter 3 in Table 3-1A, Alternative *Land Use Summary.* Both scenarios are analyzed in this section to assess their respective impacts to land use in the City and its SOI.

IMPACT 5.8-1: PROJECT IMPLEMENTATION WOULD NOT CONFLICT WITH APPLICABLE PLANS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. [THRESHOLD LU-2]

Impact Analysis:

General Plan and Zoning

The project would be consistent with the City of San Bernardino General Plan. Under the existing General Plan designation of RE, the maximum density is 1 dwelling unit per acre. The project would require a General Plan Amendment to change the existing land use designation to Residential Low (RL), allowing 3.1 dwelling units per acre, an increase of 2.1 dwelling units per acre. The project would be annexed into the City of San Bernardino and zoned RE (consistent with existing prezoning). The project's overall density over the 352.8-

acre site would be 0.87 dwelling units per acre. The density on the developed area (241.5 acres) would be 1.27 dwelling units per acre. Development is focused, or clustered, onto approximately 241.5 acres, or 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space. The average lot size in Spring Trails is 29,000 square feet. The largest lots are on the northern portion and upper elevations of the site, and the largest lot measures 18.3 acres. The smallest lots are on the lower elevations and southern portion of the project, and the smallest lot measures 10,801 square feet. It is important to note that in many instances the legal lots extend beyond the buildable area and include graded slopes, fuel modification zones, steep slopes, and open spaces. See Figure 3-4, *Zoning Map,* in Chapter 3.

The alternative (overhead electric lines) development plan is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. In this respect the alternative plan differs from the preferred plan in that it would provide 126 acres of internal slopes and fuel modification zones and 70 acres would be attributable to residential lots. The alternative plan contains 304 single-family detached units and the overall density over the 352.8-acre site would be 0.86 dwelling units per acre. The density on the developed area (241.5 acres) would be 1.26 dwelling units per acre.

The project would exceed County General Plan designation RL-5 of one dwelling unit per five acres. However, once annexed into the City of San Bernardino, the project would be consistent with the General Plan and Zoning Code.

Specific plans are required to be consistent with the goals and policies of the governing general plan. The General Plan Consistency Analysis, included in Table 5.8-1, discusses how the project implements and exemplifies the goals and policies of the City of San Bernardino General Plan. All conclusions in Table 5.8-1 regarding the consistency of the Spring Trails project with the goals and policies of the City's General Plan are applicable to both the preferred development plan and the alternative (overhead electric lines) development plan. Future development within the Spring Trails Specific Plan area must be consistent with this Specific Plan (Government Code, Sections 65455, 66473.5, 65860, and 65401). All projects that are found to be consistent with this Specific Plan will likewise be deemed consistent with the City's General Plan.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
LAND USE ELEMENT	
Goal 2.1 Preserve and enhance San Bernardino's unique neighborhoods.	
Policy 2.1.1: Actively enforce development standards, design guidelines, and policies to preserve and enhance the character of San Bernardino's neighborhoods (p. 2-34).	***Consistent.*** The Spring Trails Specific Plan provides development standards and criteria for architecture, landscaping, entry monumentation, walls and fences, and other design elements in order to ensure a high quality development and strong community character. The entire site was designated based on slope studies, the Hillside Management Overlay and Foothill Fire Zone, and both the City's General Plan and Zoning maps. The Residential Estate designation permits one dwelling unit per acre. Through the Spring Trials Specific Plan, development would be clustered into the most appropriate areas so that, when taken individually, certain lots exceeded the one unit per acre density limit yet on a gross basis still complied with the overall density restrictions of the Residential Estate land use designation. Development is focused, or clustered, onto approximately 241.5 acres, or 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space. The following elements of the Specific Plan promote the land use goals of the General Plan: • Providing approximately 236.4 acres of permanent open space (111.3 acres of natural and 125.1 acres of controlled open space). • Carefully weaving Spring Trails into its physical surroundings by clustering development on the gentle slopes; avoiding steep slopes, ridgelines, and physical hazards; and preserving significant drainage ways. • Including guidelines and standards that address unique entries, tailored landscaping, and detailed design factors that would help make Spring Trails a unique neighborhood in San Bernardino. Future development within the Spring Trails Specific Plan area must be consistent with this Specific Plan.
Policy 2.1.2: Require new development with potentially adverse impacts on existing neighborhoods or residents such as noise, traffic, emissions, and storm water runoff, be located and designed so that quality of life and safety in existing neighborhoods are preserved (p. 2-34).	***Consistent.*** See Policy 2.1.1 above. The project's design and accompanying Specific Plan account for the potential impacts of the hazards posed by seismic activity, flooding, and wildland fires. In addition, Spring Trails is designed to minimize the impacts of light intrusion and spillover. California State University, San Bernardino (CSUSB) is building an observatory on the nearby Badger Hill. To help preserve a dark nighttime sky, this Specific Plan includes controls on the type and design of lighting.
Policy 2.1.3: Encourage future development to provide public spaces that foster social interaction (p. 2-34).	***Consistent.*** The 352.8-acre residential development is in the foothills of the San Bernardino Mountains. Spring Trails accommodates 307 residences situated in several neighborhoods, which are separated by open space corridors, drainage ways, and slope areas and interconnected by a series of trails and roadways. The development footprint of Spring Trails is focused on the gently sloping alluvial benches between canyons, steep hillsides, and the Cable Canyon and Meyers Canyon drainageways. The project provides new living opportunities in San Bernardino to take advantage of the surrounding mountains and foothills, valley views, San Bernardino National Forest (SBNF), proximity to CSUSB, and onsite recreational amenities and open spaces. Spring Trails provides parks and open space that serve multiple functions: as recreational

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	opportunities, as buffers, as visual landmarks, and as an interconnecting system of trails. The parks and open space are easily accessible to every resident in Spring Trails. Parks are located to ensure that all homes are within three-quarters of a mile of a park and are interconnected by a diverse and comprehensive system of trails, which is an integral part of Spring Trails. The interconnected system would allow residents to walk or hike to neighborhood parks and within open space. The varied designs and scenic locations of planned trails would encourage trail use, help to reduce automobile use within the community, and promote healthier lifestyles. The planned trail system consists of a community trail, equestrian/pedestrian trails, and hiking trails. The trail system is also expected to connect to future and existing regional and City trails. All trail connections would be planned in coordination with the Parks and Recreation Department and the Development Services Department.
Goal 2.2: Promote development that integrates with and minimizes impacts on surrounding land uses.	
Policy 2.2.1: Ensure compatibility between land uses and quality design through adherence to the standards and regulations in the Development Code and policies and guidelines in the Community Design Element. (LU-1)	***Consistent.*** See Policy 2.1.1.
Policy 2.2.2: Require new uses to provide mitigation or buffers between existing uses where potential adverse impacts could occur, including, as appropriate, decorative walls, landscape setbacks, restricted vehicular access, enclosure of parking structures to prevent sound transmission, and control of lighting and ambient illumination. (LU-1)	***Consistent.*** See Policy 2.1.1, 2.2.4, and 2.8.2.
Policy 2.2.3: Sensitively integrate regionally beneficial land uses such as transportation corridors, flood control systems, utility corridors, and recreational corridors into the community. (LU-1 and CD-1)	***Consistent.*** See Sections 5.7, *Hydrology and Water Quality,* and 5.15, *Utilities and Service Systems*, of this DEIR. **Drainage and Flooding.** Because Spring Trails sits on an alluvial plain on the slopes of the San Bernardino Mountains, flooding and drainage are critical factors. On a regional perspective, the drainage area to which Spring Trails belongs flows east into Cable Canyon, then into Cable Creek, and eventually into the Santa Ana River. The site itself consists of four major drainage patterns: • Drainage area A. A 2,029.8-acre drainage area (148.9 acres onsite and 1,881 acres offsite) that includes the west and east forks of Cable Canyon, which flow south through the northeastern corner of the property and meet at a tributary flowing from the east. • Drainage area B. A 63.7-acre watershed (51.6 acres onsite and 12.1 acres offsite) comprises surface flow drainage that flows southwesterly through the center of the site and ultimately into Cable Canyon.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	• Drainage area C. A 198.2-acre watershed (128.4 acres onsite and 69.8 acres offsite) that consists of offsite surface flows and a defined drainage course that run onto the site and exit through the southeastern part of the project. • Drainage area D. A 345.8-acre drainage area (21.8 acres onsite and 324.0 acres offsite) that includes Meyers Creek. Spring Trails is designed to either maintain natural drainage courses or capture both on- and offsite stormwater flows and route them through a series of catch basin inlets and storm drain systems that convey water to three onsite detention basins where it is treated and discharged at a controlled rate into Cable Canyon. Portions of Cable Canyon and Meyers Canyon are identified as 100-year flood zones, which are constrained to the deep channels of the creeks, and development is located to avoid these areas and minimize road crossings. Southern California Edison (SCE) has three overhead electric transmission lines running in parallel, that traverse the western portion of the site in a southerly to northerly direction. SCE also has an access easement over the project site to service these transmission lines and uses entry locations along unimproved roads to access and traverse the project site. As shown in Chapter 3 in Figure 3-3 the Spring Trails plan assumes that the SCE overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is described in the Spring Trails Specific Plan. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above-ground electric lines and the number of residential lots. In this alternative, underneath the central portion of the electric line easement, the land use is designated as Open Space-Controlled. The northern portion of the electric line easement is designated as residential in Figure 3.3A; however, development is not permitted within the electric line easement. The SCE easement will be landscaped in accordance with the approved Fire Protection Plan for Spring Trails. If permitted by SCE, a park and/or equestrian/pedestrian trail may be located under the electric lines as a permitted use; however, they are not assumed in the design of the alternative plan. Within Spring Trails, the developer(s) would be responsible for constructing/funding their fair share of required on- and offsite infrastructure improvements, such as water lines, sewers, storm drains, recycled-water lines, and streets. All infrastructure improvements would be developed in conjunction with the roadway improvements.
Policy 2.2.4: Hillside development and development adjacent to natural areas shall be designed and landscaped to preserve natural features and habitat and protect structures from the threats from natural disasters, such as wildfires and floods.	***Consistent.*** Spring Trails is envisioned as a high-quality, residential living environment that is sensitively integrated into its physical surroundings. The project is designed to account for the potential impacts of the hazards posed by seismic activity, flooding, and wildland fires. Spring Trails is in the Foothill Fire Zone and a fire protection plan has been woven into the design of the community to ensure its long-term safety. The

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	project's design preserves significant watersheds, severely sloped areas, and seismic hazard areas, incorporating them into the land plan as open space. The Specific Plan also prohibits residential development in the fault zones.
Goal 2.3 Create and enhance dynamic, recognizable places for San Bernardino's residents, employees, and visitors.	
Policy 2.3.3: Entries into the City and distinct neighborhoods should be well defined or highlighted to help define boundaries and act as landmarks.	***Consistent.*** The Specific Plan provides unique entries that create a recognizable character and sense of arrival. The primary entry monument would be located off the primary entry road near Neighborhood Park I. The landscaping at the primary entry, in concert with the signage, lighting, and hardscape elements, would form the scenic gateway into Spring Trails. In addition to the primary entry monument, Spring Trails would feature a smaller monument located where the secondary entry road intersects the western project boundary.
Policy 2.3.4: Develop a cohesive theme for the entire City as well as sub-themes for neighborhoods to provide identity, help create a sense of community and add to the City's personality.	***Consistent.*** The Spring Trails Specific Plan contains Design Guidelines that provide general criteria for architecture, landscaping, entry monumentation, walls and fences, and other design elements in order to ensure a high-quality development and strong community character. The overall goal of these Design Guidelines is to create an attractive and distinct community within the City of San Bernardino and adhere to Verdemont Area Plan policies in the General Plan. The Design Guidelines are intended to be flexible and work in concert with the Development Standards contained in Section 3 of the Specific Plan. Variation and customization within the context of the guidelines is encouraged in order to achieve individually distinctive neighborhoods complemented by recreational amenities. The Design Guidelines are arranged to first address aspects at the community-wide level and then at the residential level. The community-wide design guidelines address the layout and design of the entire community including common landscape and streetscape treatment. At the residential level, the guidelines address details such as orientation, massing, and architectural treatment. These guidelines shall be followed in the design and buildout of the community—they shall not be viewed as voluntary. These guidelines shall be implemented through the review of development plans through the building permit process.
Goal 2.5 Enhance the aesthetic quality of land uses and structures in San Bernardino	
Policy 2.5.4: Require that all new structures achieve a high level of architectural design and provide a careful attention to detail.	***Consistent.*** See Policy 2.3.4.
Policy 2.5.6: Require that new developments be designed to complement and not devalue the physical characteristics of the surrounding environment, including consideration of: a. The site's natural topography and vegetation; b. Surrounding exemplary architectural design styles; c. Linkages to pedestrian, bicycle, and equestrian paths; d. The use of consistent fencing and signage; e. The provision of interconnecting greenbelts and community amenities, such as clubhouses, health clubs, tennis courts, and	***Consistent.*** See Policy 2.3.4. The Specific Plan area would include upscale residential housing with recreation and open space uses and would enhance the aesthetic quality of land uses for the project area. The Spring Trails Specific Plan document ensures that development would comply with the design potions of this goal and these policies.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
swimming pools; f. The use of building materials, colors, and forms that contribute to a "neighborhood" character; g. The use of extensive site landscaping; h. The use of consistent and well designed street signage, building signage, and entry monumentation; i. A variation in the setbacks of structures; j. The inclusion of extensive landscape throughout the site and along street frontages; k. The articulation of building facades to provide interest and variation by the use of offset planes and cubic volumes, building details, balconies, arcades, or recessed or projecting windows, and other techniques which avoid "box"-like structures; l. The integration of exterior stairways into the architectural design; m. The screening of rooftop mechanical equipment; n. The use of a consistent design through the use of unifying architectural design elements, signage, lighting, and pedestrian areas; o. The provision of art and other visual amenities; p. The inclusion of awnings, overhangs, arcades, and other architectural elements to provide protection from sun, rain, and wind; and q. The location of parking at the rear, above, or below the ground floor of non-residential buildings to enhance pedestrian connectivity. (p.2-41)	
Goal 2.6 Control development and the use of land to minimize adverse impacts on significant natural, historic, cultural, habitat, and hillside resources.	
Policy 2.6.1: Hillside development and development adjacent to natural areas shall be designed and sited to maintain the character of the City's significant open spaces and historic and cultural landmarks.	***Consistent.*** Spring Trails is envisioned as a high-quality, residential living environment that is sensitively integrated into its physical surroundings. The project is designed to account for the potential impacts of the hazards posed by seismic activity, flooding, and wildland fires. It preserves significant watersheds, severely sloped areas, and seismic hazard areas, incorporating them into the land plan as open space. It minimizes the development footprint and area of grading and disturbance through clustered residential development in the flatter portions of the site and prohibiting residential development in significant ridgelines. The project also uses lighting systems that respect habitat in the adjacent SBNF.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
Policy 2.6.2: Balance the preservation of plant and wildlife habitats with the need for new development through site plan review and enforcement of CEQA.	***Consistent.*** See Section 5.4, *Biological Resources* of this DEIR.
Goal 2.7 Provide for the development and maintenance of public infrastructure and services to support existing and future residents, businesses, recreation, and other uses.	
***Policy 2.7.1*:** Enhance and expand drainage, sewer, and water supply/storage facilities to serve new development and intensification of existing lands.	***Consistent.*** See Sections 5.7, *Hydrology and Water Quality,* and 5.15, *Utilities and Service Systems*, of this DEIR. Spring Trails has been designed with careful attention to the provision of services and infrastructure. According to initial studies, there are adequate supply, capacity, and facilities to accommodate the buildout of Spring Trails. **Dry Utilities**. Spring Trails would be served with electric, gas, solid waste collection, telephone cable, and Internet (data) from companies serving the City of San Bernardino. The utility providers, including the Gas Company, Southern California Edison, Verizon, and Charter Communications, have indicated the ability to provide service to Spring Trails. **Water.** The City of San Bernardino Municipal Water Department (SBMWD) would provide water services to Spring Trails. Water would be supplied to Spring Trails from lower elevations by a combination of expanding and improving the offsite water system and providing onsite reservoirs and transmission lines. A detailed water system improvement plan and supply analysis have been prepared and demonstrate that adequate water supply and service are available to accommodate the buildout of Spring Trails. **Drainage.** Spring Trails maintains the significant drainage courses onsite to carry most of the offsite water through the site to existing drainage facilities. The drainage concept for Spring Trails is designed to either maintain natural drainage courses or capture both on- and offsite stormwater flows and route them through a series of catch basin inlets and storm drain systems that convey water to three onsite detention basins where it is treated and discharged at a controlled rate into Cable Canyon. The drainage system and detention basins would reduce stormwater runoff from the site to levels below those that existed prior to the project. **Sewer**. The Spring Trails project lies within the City of San Bernardino sanitary sewer service area. Spring Trails would connect to the City's existing 10-inch sewer line that ends at Little League Drive and Meyers Road, which is then connected to the south to a major interceptor system and is eventually treated in the San Bernardino Water Reclamation Plant. Existing capacity is available in the sewer system to serve the buildout population within the City. The sewer facilities would be designed and constructed in accordance with the City of San Bernardino standards and specifications and in accordance with the Standard Specifications for Public Works Construction (latest edition). In addition, the infrastructure that crosses earthquake faults is carefully designed to handle earthquakes and surface ruptures. Within Spring Trails, the developer(s) would be responsible for constructing/funding their fair share of required on- and off-site infrastructure improvements, such as water lines, sewers, storm drains, recycled-water lines, and streets. All infrastructure improvements would be developed in conjunction with the roadway improvements.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
Policy 2.7.5: Require that development be contingent upon the ability of public infrastructure to provide sufficient capacity to accommodate its demands and mitigate its impacts.	***Consistent.*** See Policies 2.2.3 and 2.7.1.
Goal 2.8 Protect the life and property of residents, businesses, and visitors to the City of San Bernardino from crime and the hazards of flood, fire, seismic risk, and liquefaction.	
Policy 2.8.1: Ensure that all structures comply with seismic safety provisions and building codes.	***Consistent.*** See the analysis in section 5.5, *Geology and Soils*, of this DEIR. Spring Trails includes three traces of the San Andreas Fault, which runs in an east–west direction through the northern and southern portions of the project site. These faults were precisely located through detailed geologic investigations to establish safe structural setback limits. Development in Spring Trails is sited to avoid the fault and comply with the Alquist-Priolo requirements. Development is required to comply with the latest building codes, which are designed to resist damage from seismic shaking.
Policy 2.8.2: Ensure that design and development standards appropriately address the hazards posed by wildfires and wind, with particular focus on the varying degrees of these threats in the foothills, valleys, ridges, and the southern and western flanks of the San Bernardino Mountains.	***Consistent.*** See Policy 2.2.4 above and analyses throughout Chapter 5 of this DEIR. Most foothills (areas of 15 percent average slope or greater) within Spring Trails have been preserved as open space. Development and use in the areas with an average slope of 15 percent or greater shall comply with Chapters 19.15 and 19.17 of the Development Code. Spring Trails contains several significant natural features that have made safety a special concern in the design of the community. Significantly, the San Andreas Fault system runs through the project, natural drainage courses cut through the project, and wildland fire is a threat. **Wildland Fire**. Because of the adjacent SBNF, steep slopes, and high winds, the Spring Trails area is at risk from wildland fires. To ensure the safety of lives and property, a detailed fire analysis was conducted and an extensive fire protection plan was developed for Spring Trails that would protect development from wildland fires. Significant provisions of the fire protection plan include: • The protection of structures through the use of noncombustible exterior building materials, restriction on the use of cornice and eave vents, fire sprinklers, and compliance with the most current fire codes. • Greater levels of structure protection on the perimeters of the project. • Placement of streets on the perimeter of the project to provide a firebreak and a first line of defense against fires. • Adequate access and maneuverability for fire protection vehicles. • Careful placement of fire hydrants and design of structures to facilitate fire suppression efforts and fire hose access. • Strict landscape and use zones, called fuel modification zones, which include private yards and extend approximately 170 to 230 feet from structures. Within the fuel modification zones, there are restrictions on the type, spacing, irrigation, and maintenance of landscaping. • Clear disclosure to potential homebuyers of the fire threat, preventative measures, and individual responsibilities. • Clear delineation of and maintenance responsibilities for the fuel modification zones.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	• An aggressive program to educate residents on the fire threat, landscaping requirements, and maintenance responsibilities. **High Winds**. The City of San Bernardino experiences periods of high winds, especially in the Cajon Pass and at the bottom of canyons. Spring Trails is included in the City's designated High Wind Area, which has certain appropriate building standards. Development in Spring Trails is required to comply with the building standards for this area and would be designed and oriented to avoid the creation of wind tunnels that concentrate gusts in corridors.
HOUSING ELEMENT	
Goal 3.1 Facilitate the development of a variety of types of housing to meet the needs of all income levels in the City of San Bernardino.	
Policy 3.1.1: Accommodate the production of new housing units on currently vacant or underutilized land at densities and standards designated in the Land Use Element of the General Plan.	***Consistent.*** See Policy 2.1.3.
COMMUNITY DESIGN ELEMENT	
Goal 5.4: Ensure individual projects are well designed and maintained.	
***Policy 5.4.1*:** Aggressively apply and enforce citywide landscape and development standards in new and revitalized development throughout the City.	***Consistent.*** The overall goal of the Specific Plan is to create an attractive and distinct community within the City of San Bernardino. The Spring Trails Specific Plan provides development standards and criteria for architecture, landscaping, entry monumentation, walls and fences, and other design elements in order to ensure a high quality development and strong community character. In addition, Spring Trails is designed to enhance the aesthetic quality of San Bernardino through: • The compact design of Spring Trails limits the development footprint so that open lands are maximized; natural drainage ways are maintained and incorporated into the design of the project as open space amenities and landscaping; and hazards are avoided or mitigated. • Unique entries that create a recognizable identity and sense of arrival. • Avoiding development on ridgelines and steep slopes so that views of the mountains are not impacted. • An interconnected system of open spaces that serve multiple purposes as drainage courses, pedestrian pathways, recreational and visual amenities, and separations between neighborhoods. Distinctively designed residences would be set among a system of unified lighting, streetscape, landscape, and parks. Maintenance assessment district(s) would be responsible for maintaining the long-term aesthetic quality of Spring Trails. Maintenance responsibilities may be divided among a master homeowners association, neighborhood associations, landscape and lighting maintenance district(s), and/or other maintenance mechanisms.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
Policy 5.4.2: Ensure that the design of all public facilities fits well into their surroundings and incorporates symbolic references to the City, including its past and/or present, as appropriate.	***Consistent.*** See Policy 5.4.1.
Goal 5.5: Develop attractive, safe, and comfortable single-family neighborhoods.	
Policy 5.5.1: Require new and in-fill development to be of compatible scale and massing as existing development yet allow the flexibility to accommodate unique architecture, colors, and materials in individual projects.	***Consistent.*** See Policy 2. 3.4, 2.5.6 and 5.4.1.
Policy 5.5.2: Improve the pedestrian atmosphere of the street by orienting new homes to the street with attractive front porches, highly visible street facades, and garages located in the rear of the property.	***Consistent.*** To avoid the monotony of projects that employ the same garage placement (e.g., all front-entry garages), a variety of garage placements and orientations is required. Standard garage placement is a front-loaded garage set in from the front property line. Alternative garage orientation and placement are required on 33 percent of the units. The following are potential alternative garage placements pursuant to the Specific Plan: • Side-entry garage • Split garage • Garage in courtyard or driveway with a porte cochere • Straight-in garage in rear two-thirds of the lot
Policy 5.5.3: Maintain, improve and/or develop parkways with canopy street trees, providing shade, beauty and a unifying identity to residential streets.	***Consistent.*** See Policy 5.4.1.
Policy 5.5.4: Setback garages from the street and minimize street frontage devoted to driveways and vehicular access.	***Consistent.*** See Policy 5.5.2.
Policy 5.5.5: Provide continuous sidewalks and links to nearby community facilities and retail centers.	***Consistent.*** Lighted walkways would be included in the circulation system of the Spring Trails Specific Plan. Walkways would follow the primary and secondary local access streets and cul-de-sacs. An onsite trails system is also proposed to connect to proposed offsite City trails, which would lead to City amenities. The distance of Spring Trails from the City may limit the amount of walking residents may do on the trails to access City amenities, but bike use on the community trails to access City locations would be encouraged.
Policy 5.5.6: Ensure a variety of architectural styles, massing, floor plans, façade treatment, and elevations to create visual interest.	***Consistent:*** Development Standards outlined in the Spring Trails Specific Plan ensure that the community would be attractive and visually interesting. Accordingly, single-family residential neighborhoods would include a variety of product types and design styles. The Specific Plan states that: • There should be a minimum of three different material and color palettes. No two single-family detached homes with identical color or materials palettes shall be adjacent to or directly across the street from one another. • There shall be a minimum of three elevation/facade designs. No two homes with identical

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	elevation/façade designs shall be adjacent to or directly across the street from one another. • There shall be a minimum of three primary roof materials and roof designs. No two homes with identical roof designs and materials shall be adjacent to or directly across the street from one another.
Policy 5.5.7: In residential tract developments, a diversity of floor plans, garage orientation, setbacks, styles, building materials, color and rooflines shall be preferred over more uniform design patterns.	See Policies 5.5.2 and 5.5.6 above.
CIRCULATION ELEMENT	
Goal 6.2: Maintain efficient traffic operations on City streets	
Policy 6.2.1: Maintain a peak hour level of service D or better at street intersections.	***Consistent.*** Without improvements, the proposed project would contribute enough vehicle trips to future traffic volumes to cause project area intersections to function with an LOS worse than D (I-215 freeway northbound ramps and southbound ramps at Palm Avenue). However, as shown in Section 5.14, *Transportation and Traffic*, Table 5.14-8, project area intersections would operate at LOS D or better in future conditions with roadway improvements.
Policy 6.2.2: Design each roadway with sufficient capacity to accommodate anticipated traffic based on intensity of projected and planned land use in the City and the region while maintaining a peak hour level of service (LOS) "C" or better.	***Substantially Consistent.*** The proposed single-family residential development would generate about 3,149 total average daily traffic (ADT). During the AM peak hour, the project would generate about 247 trips and during the PM peak hour, it would generate about 333 trips. The project would increase daily traffic volumes mainly on Little League Drive, Belmont Avenue, Palm Avenue, I-215, and the frontage road, as discussed in Section 5.14, *Transportation and Traffic*. A significant impact to intersections is realized when the LOS is equal to E or less. For freeway mainlines, a significant impact occurs when the LOS is equal to F or worse, unless the segment is identified as LOS F already. Under both future conditions (year 2013 and 2035) with and without the project, the intersections of Palm Avenue at both the I-215 freeway northbound ramps and southbound ramps would operate at an unacceptable LOS (E or worse). However, improvements to the Palm Avenue /I-215 Freeway northbound and southbound ramps are programmed for installation by Caltrans. These improvements would increase the LOS to D or better at these intersections during both morning and evening peak hour traffic on the northbound and southbound ramps. Under future conditions for year 2035 with and without the project, the intersection of Palm Avenue at Kendall Drive would operate at an unacceptable LOS (E or worse). Mitigation measure 14-1 in Section 15, *Transportation and Traffic*, requires the proposed project to improve this intersection prior to issuance of occupancy permits if it has not already been improved by another project. Without improvements, four freeway segments are projected to operate at an unacceptable LOS for year 2035 during the morning peak hour and a total of six freeway segments are projected to operate at an unacceptable LOS for year 2035 during the evening peak hour.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
	With improvements, two freeway segments are projected to operate at an unacceptable LOS for year 2035 during the morning peak hour and four freeway segments are projected to operate at an unacceptable LOS for year 2035 during the evening peak hours. Per the SANBAG/Caltrans "I-15/1-215 Devore Interchange Reconfiguration Project Study Report" (January 2009), the following freeway improvements have been proposed:[1] • I-215 (between Palm Avenue and Devore Road) o Add one general use lane in northbound and southbound directions • I-215 (between Devore Road and I-15 Freeway) o Add one general use lane in northbound and southbound directions • I-15 (between Glen Helen Parkway and I-215) o Add two general use lanes in northbound and southbound directions A portion of the funding for the SANBAG/Caltrans I-15/I-215 improvements would be from the State Highway Operations and Protection Program. The balance would be sought from other federal, state, and local funding sources, including Measure I, the half-cent sales tax for transportation improvements in San Bernardino County (SANBAG 2011). Since there is no funding mechanism currently in place, the proposed project would not be able to provide funding for these improvements.
Policy 6.2.3: Keep traffic in balance with roadway capacity by requiring traffic studies to identify local roadway and intersection improvements necessary to mitigate the traffic impacts of new developments and land use changes.	***Consistent.*** See Policies 6.2.1 and 6.2.2 above.
Policy 6.2.4: Review the functioning of the street system as part of the Capital Improvement Program to identify problems and address them in a timely manner.	***Consistent.*** See Policy 6.2.2 above.
Policy 6.2.5: Design roadways, monitor traffic flow, and employ traffic control measures (e.g. signalization, access control, exclusive right and left turn-turn lanes, lane striping, and signage) to ensure City streets and roads continue to function safely within our Level of Service standards.	***Consistent.*** See Policies 6.2.1 and 6.2.2 above.

[1] A portion of the funding for the SANBAG/Caltrans I-15/I-215 improvements would be from the State Highway Operations and Protection Program. The balance would be sought from other federal, state, and local funding sources, including Measure I, the half-cent sales tax for transportation improvements in San Bernardino County (SANBAG 2011).

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
Policy 6.2.6: Improve intersection operations by modifying signal timing at intersections and coordinating with other signals, as appropriate.	***Consistent.*** See Policies 6.2.1 and 6.2.2 above.
Policy 6.2.7: Install new signals as warranted.	***Consistent.*** For opening year 2013 and horizon year 2035, roadway improvements have been identified that would eliminate deficiencies for local study area intersections. The project would pay its fair share cost contribution as discussed in Section 5.14.
Goal 6.3: Provide a safe circulation system.	
Policy 6.3.1: Promote the principle that streets have multiple uses and users, and protect the safety of all users.	***Consistent:*** Spring Trails also includes a system of bicycle and pedestrian trails that interconnects all neighborhoods and provide connections to the surrounding areas and region. In addition, several natural drainage ways and sloped areas are used as open space corridors and pathways.
Policy 6.3.2: Discourage high speeds and through traffic on local streets through traffic control devise such as signage, speed bumps, etc. as acceptable by the local neighborhood.	***Consistent:*** Spring Trails consists of a hierarchy of streets, including collector and local roads, that provides a comprehensive and connected street network and is designed to the specifications of the City of San Bernardino.
Policy 6.3.3: Require that all City streets be constructed in accordance with the Circulation Plan and the standards established by the Development Services Director.	***Consistent:*** Spring Trails is designed with an efficient multimodal circulation system that provides safe and efficient internal and external connectivity. The Mobility Plan, as detailed in the Development Standards of the Spring Trails Specific Plan, describes the network of streets and multiuse trails within Spring Trails that provide a range of options for vehicular, pedestrian, equestrian, and bicycle mobility.
Policy 6.3.4: Require appropriate right-of-way dedications of all new developments to facilitate construction of roadways shown on the Circulation Plan.	***Consistent***: See Policy 6.3.3.
Policy 6.3.5: Limit direct access from adjacent private properties to arterials to maintain an efficient and desirable quality of traffic flow.	***Consistent***: Primary access to the project would be provided via a new roadway extended from the existing terminus of Little League Drive to the southeast of the project site. A secondary access road would be extended directly south of the project site and connect to the frontage road along I-215.
Policy 6.3.6: Locate new development and their access points in such a way that traffic is not encouraged to utilize local residential streets and alleys.	***Consistent***: The primary access to the project would be provided via a new roadway extended from the existing terminus of Little League Drive to the southeast of the project site. A secondary access road would be extended directly south of the project site and connect to the frontage road along I-215. The project's access points were designed in response to public comments, particularly regarding the primary and secondary road alignments and their traffic impacts on Meyers Road and on the community of Devore. The currently proposed access roads and road design discourage future Spring Trails residents from utilizing Meyers Road, thus avoiding the concerns of the previous project.
Policy 6.3.7: Require that adequate access be provided to all developments in the City including secondary access to facilitate emergency access and egress.	***Consistent***: The project would meet safe circulation and emergency access conditions through the implementation of the Foothill Fire Zones Emergency Access Design Standards, as described in Section 5.14, Table 5.14-7.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
PARKS, RECREATION, AND TRAILS ELEMENT	
Goal 8.1: Improve the quality of life in San Bernardino by providing adequate parks and recreation facilities and services to meet the needs of our residents.	
Policy 8.1.2: Provide a variety of park "experiences", including those developed for intense recreational activity, passive open space enjoyment, and a mixture of active and passive activities.	***Consistent***: See Section 5.13, *Recreation,* of this DEIR. Spring Trails provides a system of pathways that would connect the residences with neighborhood parks and natural open spaces. Spring Trails would provide 245.4 acres of public and private parkland, open space, trails, and recreational amenities on the project site. More specifically, 9 of the 245.4 acres would be designated as public and private parks: 2 acres of private parks and 7 acres of public parks. Therefore, the project would exceed the City requirements by 3.87 acres of parkland. Additionally, the project responds to the City's Parks, Recreation, and Trails Element Goals 8.1 and 8.3 by providing parks and creating a trail system that would connect to future and existing regional and City trails. The dog park would be a private, 1.6-acre park that is conceptually envisioned to consist of a completely enclosed play area for dogs and an adjacent unenclosed family picnic area that includes view benches and a group picnic structure.
Policy 8.1.3: Pursue the development of portions of the Santa Ana River, Lytle Creek, and flood control drainages and detention basins for recreational uses that will not inhibit flood control purposes or be adversely impacted by flooding.	***Consistent***: See Policy 8.1.2. The two neighborhood parks that are proposed for Spring Trails would be dual-use parks that would also serve as water detention basins. On- and offsite stormwater flows would be collected and routed through a series of catch basin inlets and storm drain systems that convey water to onsite detention basins, which double as parks. These parks would be designed to withstand the water storage when used as detention basins. For more information regarding the detention basins, refer to Section 5.7, *Hydrology and Water Quality*.
Policy 8.1.5: Integrate parks and recreation facilities with the Master Plan for Trails and Bikeways.	***Consistent:*** Maximum buildout of Spring Trails would accommodate 307 units and a population of approximately 1,025 residents. Based on the City's standard of 5 acres of parkland per 1,000 residents, full buildout of the project would result in the need to provide 5.13 acres of parkland or an equivalent fee in lieu of dedicated parkland. Spring Trails exceeds the City's requirement and provides approximately 245.4 total acres of on- and offsite natural open space and parkland, including 9 acres of improved parkland. Spring Trails would be integrated and linked both internally and with surrounding uses via trails and bike lanes. The open space and parks would be maintained by homeowners associations and/or lighting and landscape maintenance districts.
Goal 8.2: Design and maintain our parks and recreation facilities to maximize safety, function, beauty, and efficiency.	
Policy 8.2.5: Design and develop parks to complement and reflect their natural environmental setting and maximize their open space character.	***Consistent***: See analysis in Goal 8.1. Spring Trails provides parks and open space that serve multiple functions: as recreational opportunities, as buffers, as visual landmarks, and as an interconnecting system of trails. The parks and open space are easily accessible to every resident in Spring Trails. Parks are located to ensure that all homes are within three-quarters of a mile of a park and are interconnected by a comprehensive system of trails.

Table 5.8-1
General Plan Consistency Analysis

Applicable City of San Bernardino General Plan Policies	Specific Plan Consistency
Goal 8.3: Develop a well-designed system of interconnected multi-purpose trails, bikeways, and pedestrian paths.	
Policy 8.3.2: Establish a multi-purpose trail system, as shown on Figure PRT-2, along the foothills of the San Bernardino Mountains, Santa Ana River, Cajon and Lytle Creeks, and interconnecting linkages in collaboration with the U.S. Forest Service, County of San Bernardino, City of Highland, Loma Linda, and other adjacent communities.	***Consistent***: See analysis in Goal 8.1 and Section 5.13, *Recreation,* of this DEIR. A diverse and comprehensive trails system is an integral part of Spring Trails. The interconnected system would allow residents to walk or hike to neighborhood parks and within open space. The varied designs and scenic locations of planned trails would encourage trail use, help to reduce automobile use within the community, and promote healthier lifestyles. The trail system is also expected to connect to future and existing regional and City trails. All trail connections would be planned in coordination with the Parks and Recreation Department and the Development Services Department. Appropriate access and use restrictions should be determined prior to construction of any trail connections. The planned trail system consists of a community trail, equestrian/pedestrian trails, and hiking trails, as shown on Figure 3.9, Trails, Parks, and Open Space Plan, of the Spring Trails Specific Plan.
Policy 8.3.9: Separate bikeway and trail systems from traffic and roadways wherever possible	***Consistent***: See Policy 8.3.2.
Policy 8.3.10: Provide clear separation of hikers, joggers, and equestrians where possible.	***Consistent***: See Policy 8.3.2.

SCAG RCPG Consistency Analysis

Table 5.8-2 provides an assessment of the proposed project's relationship to pertinent policies and growth visioning principals contained in various chapters of SCAG's Regional Comprehensive Plan and Guide (RCPG). The analysis contained in Table 5.8-2 concludes that the proposed project would be consistent with the applicable SCAG RCPG policies. Therefore, implementation of the proposed project would not result in significant land use impacts related to relevant SCAG policies, goals, and principles.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	*Project Compliance*
Land Use And Housing Action Plan	
Policy LU-4: Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-4.1: Local governments should adopt and implement General Plan Housing Elements that accommodate housing needs identified through the Regional Housing Needs Assessment (RHNA) process. Affordable housing should be provided consistent with RHNA income category distributions adopted for each jurisdiction. To provide housing, especially affordable housing, jurisdictions should leverage existing State programs such as HCD's Workforce Incentive Program and density bonus law and create local incentives (e.g., housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and transit villages) and partnerships with non-governmental stakeholders.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-5: Local governments should leverage federal and State and local funds to implement the Compass Blueprint.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-5.1: All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-5.2: Subregional organizations should leverage the federal transportation planning funds available at the subregional level, to complete projects that integrate land use and transportation planning and implement Compass Blueprint principles.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-6: Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan, and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-6.1: Local governments should take a comprehensive approach to updating their General Plans, keeping General Plans up-to-date and providing progress reports on updates and implementation, as required by law.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy LU-6.2: Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, EnergyStar Homes, Green Point Rated Homes, and the California Green Builder Program.	***Consistent:*** The environmental design and sustainability measures outlined in Chapter 5, Sustainability, of the Specific Plan include provisions for energy efficiency and conservation through site design, building design, and landscaping measures. Several of these measures have been carried through as mitigation measures in Section 5.16, *Greenhouse Gas Emissions*. Following is a description of some of the sustainability measures outlined in the Specific Plan. *Site and Building Design Measures:* As outlined in the Specific Plan, site and building design measures include the use of 20 percent locally manufactured and produced building materials; the use of rapidly renewable or recycled building materials and products such as bamboo, wheatboard, cork, and recycled-content ceramic tiles; the installation of radiant barriers to reduce summer heat gain and winter heat loss; the installation of insulation with at least 75 percent recycled content. Required measures include the installation of water- and energy-saving fixtures and appliances, such as showerheads, toilets, washing machines, clothes dryers, refrigerators, and dishwashers; the installation of only low-water-consumption, EnergyStar®-compliant appliances and fixtures. Other provisions include the use of architectural features that increase daylighting into interior spaces; the use of light-colored roofing materials; and the use of products with low-emitting volatile organic compounds. *Landscaping Design Measures:* As outlined in the Specific Plan, landscaping measures include the use of plant materials and species that are native, drought-tolerant, and heat-resistant; the installation of high-efficiency, xeriscape irrigation systems to reduce the amount of water devoted to landscaped areas, such as drip and bubbler irrigation and low-angle, low-flow nozzles on sprayheads; the use of high-efficiency irrigation systems; the diversion of runoff into detention basins to allow water recharge; the collection of rainwater onsite through the use of stormwater management practices such as the incorporation of infiltration basins and bioswales; the use of pervious or open-grid paving for driveways, walkways, plazas, and parking areas to facilitate groundwater recharge; and the use of swales with native or drought-tolerant grasses to collect and filter water runoff. *Other Measures*: A number of mitigation measures related to the construction and operational phases of the proposed project are outlined in Section 5.16. For example, Mitigation Measure 16-1 requires that project applicants submit evidence to the satisfaction of the Community Development Director that the project uses recycled materials for at least 5 percent of construction materials. Mitigation Measure 16-6 states that prior to the issuance of a building permit for residential development, plans shall be required to demonstrate that the project exceeds 2008 Building and Energy Efficiency Standards (Title 24) for energy efficiency by 15 percent.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy LU-6.3: Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy LU-6.4: Local governments and subregional organizations should develop adaptive reuse ordinances and other programs that will enable the conversion of vacant or aging commercial, office, and some industrial properties to housing and mixed-use with housing.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Open Space and Habitat – Community Open Space Action Plan	
Policy OSC-7: Local governments should prepare a Needs Assessment to determine the adequate community open space level for their areas.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy OSC-8: Local governments should encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.	***Generally Consistent:*** As outlined in Chapter 3, Project Description, of the Specific Plan, the proposed project would consist of up to 307 single-family residential dwelling units that would require the construction of new roads and water, sewer, and other utility and infrastructure systems. However, many of the provisions outlined in Chapter 5, Sustainability, of the Specific Plan would help reduce the need of and impacts on infrastructure costs and existing facilities. For example, to help minimize the impacts on costs and use of existing water and drain facilities, measures in the Specific Plan include the diversion of runoff into detention basins to reduce drainage runoff; the use of pervious paving materials to reduce stormwater runoff; the installation of moisture sensors and other similar irrigation technology to reduce water needs; and the use of water-saving landscaping techniques, such as drip irrigation systems and drought-tolerant plant species. To help minimize the use of electricity facilities, measures in the Specific Plan include the installation of insulation with at least 75 percent recycled content; the use of low-voltage fixtures and energy-efficient bulbs; the use of natural ventilation techniques, such as operable windows, to take advantage of airflow for cooling interiors, reducing the amount of energy needed for cooling; the use of "cool roofs" to cool building interiors and increase stormwater retention; the installation of water- and energy-saving fixtures and appliances, such as showerheads, toilets, washing machines, clothes dryers, refrigerators, and dishwashers certified as EnergyStar®-compliant; and the incorporation of building materials that take advantage of heat storage or thermal mass to reduce energy needed for heating and cooling interiors. Please refer to Sections 5.12, *Public Services*, and 5.15, *Utilities and Service Systems*, for a further discussion of how the public services and facilities system would be able to accommodate the proposed project.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy OSC-9: Developers and local governments should increase the accessibility to natural areas lands for outdoor recreation.	***Consistent:*** As shown in Figure 3-3, *Development Plan*, the proposed project would be nestled along the foothills of the San Bernardino National Forest. Residents of the proposed project would not only be adjacent to the natural areas and resources of the forest, but would also have access to them via a comprehensive system of pedestrian and multiuse trails, as shown in Figure 3-8, *Trails, Parks, and Open Space Plan*. Additionally, as shown in Figure 3-8, the proposed trail system would connect to a planned offsite regional trail system. Therefore, development of the trail system would not only provide a means of active recreation for current and future residents of the proposed project and the City, but would also provide a multiuse circulation path that would allow residents to access other recreational and open space areas in the City and region, including the mountains and other natural areas. Additionally, as outlined in Chapter 3, *Project Description*, of the DEIR, 32 percent (111.3 acres) of Spring Trails would be preserved as natural open space. Furthermore, as shown on Figure 3-8, the proposed project would provide two neighborhood parks and a dog park.
Police OSC-10: Developers and local governments should promote infill development and redevelopment to revitalize existing communities.	***Not Applicable:*** The project site is not an infill or redevelopment site; therefore; this policy is not applicable.
Policy OSC-11: Developers should incorporate and local governments should include land use principles, such as green building, that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms.	***Consistent:*** The CEQA process ensures that plans at all levels of government consider all environmental impacts. Sections 5.15, *Utilities and Service Systems*, and 5.16, *Greenhouse Gas Emissions*, appropriately address the potential environmental impacts related to resource efficiency, pollution, and solid waste. As outlined in these DEIR sections, the proposed project would adhere to state and federal environmental and climate change policies to comply with strategies to eliminate pollution and reduce waste. See also response to RCP Policy LU-6.2.
Policy OSC-12: Developers and local governments should promote water-efficient land use and development.	***Consistent:*** As outlined in the Specific Plan, measures that would help reduce water use and needs include the use of plant materials and species that are native, drought-tolerant, and heat-resistant; the installation of high efficiency, xeriscape irrigation systems to reduce the amount of water devoted to landscaped areas, such as moisture sensors, drip and bubbler irrigation, and low-angle, low-flow nozzles on sprayheads; the use of high-efficiency irrigation systems; the diversion of runoff into detention basins to allow water recharge; the collection of rainwater onsite through the use of stormwater management practices such as the incorporation of infiltration basins and bioswales; the use of pervious or open-grid paving for driveways, walkways, plazas, and parking areas to facilitate groundwater recharge; and the use of swales with native or drought-tolerant grasses to collect and filter water runoff.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy OSC-13: Developers and local governments should encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.	***Consistent:*** The provision of recreational needs is addressed in Section 5.13, *Recreation*. The parks and open space design standards of the Specific Plan outline the necessary provisions to provide for usable and accessible recreational and people-gathering areas within the project site. Open space requirements and streetscape design elements would work in concert to create a pedestrian-friendly environment for residents and visitors. As shown in Figure 3-8, *Trails, Parks, and Open Space Plan*, recreational amenities would include two neighborhood parks, a dog park, and a comprehensive system of pedestrian and multiuse trails. As shown on Figure 3-8, the trail system would also include trailheads and observation points at key locations, and would connect to a planned regional trail system. See also response to RCP Policy OSC-9.
Water Action Plan	
Policy WA-9: Developers and local governments should consider potential climate change hydrology and resultant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health.	***Consistent:*** See response to RCP Policy OSC-12.
Policy WA-10: Developers and local governments should include conjunctive use as a water management strategy when feasible.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-11: Developers and local governments should encourage urban development and land uses to make greater use of existing and upgraded facilities prior to incurring new infrastructure costs.	***Generally Consistent:*** See response to RCP Policy OSC-8.
Policy WA-12: Developers and local governments should reduce exterior uses of water in public areas, and should promote reduced use in private homes and businesses, by shifting to drought-tolerant native landscape plants (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.	***Consistent:*** See response to RCP Policy OSC-12.
Policy WA-13: Developers and local governments should protect and preserve vital land resources—wetlands, groundwater recharge areas, woodlands, riparian corridors, and production lands. The federal government's 'no net loss' wetlands policy should be applied to all of these land resources.	***Not Applicable:*** With the exclusion of an existing single-family residence, the project site is vacant, undeveloped land along the foothills of the San Bernardino National Forest. As disclosed in the Initial Study (see Appendix A1), no impacts to agricultural resources would occur. As outlined in Chapter 5.3, *Biological Resources*, the proposed project would impact areas of potential seasonal wetland (6.2 acres; Figure 5.3-3, *Jurisdictional Wetland Boundaries*), various plant communities, including Riversidian Sage Scrub, and woodland. Wildlife corridors are present on the northern portion of the project site and under the Secondary Access Road. Impacts to biological resources would be less than significant with the implementation of mitigation measures 5.3-1 through 5.3-12. As disclosed in Chapter 5.17, *Forest Resources*, impacts to forest resources would be less than significant with implementation of mitigation measure 3-12.
Policy WA-14: Local governments should amend building codes to require dual plumbing in new construction, and provide incentives for plumbing retrofits in existing development, to enable the safe and easy use of recycled water in toilets and for landscaping.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy WA-15: Local governments should amend ordinances as necessary to allow municipal and private outdoor use of recycled water for all parks, golf courses, and outdoor construction needs.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-16: Water agencies should incentivize the use of recycled water through pricing structures that make it an attractive alternative to fresh water in non-potable situations.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-17: Water agencies should reduce salinity and remove contamination in major groundwater basins to increase conjunctive use of water resources and extend groundwater storage unless specific beneficial uses for contaminated groundwater are identified.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-18: Local governments should create stable sources of funding for water and environmental stewardship and related infrastructure sustainability, including purchase and implementation of green infrastructure.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-19: Water purveyors should develop and implement tiered water pricing structures to discourage water waste and minimize polluting runoff.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-20: Local governments should use both market and regulatory incentive mechanisms to encourage 'water wise' planning and development, including streamlining and prioritizing projects that minimize water demand and improve water use efficiencies.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-21: Local governments should develop comprehensive partnership approaches to remove and prevent water impairments, replacing the existing regulatory command and control approach that has created delays and distrust.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-22: Local governments should create opportunities for pollution reduction marketing and other market-incentive water quality programs.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-23: Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage runoff flows caused by storms and impervious surfaces.	***Consistent:*** As outlined in Section 5.7, *Hydrology and Water Quality*, project applicants would be required to comply with all local, state, and federal requirements related to water quality, including the National Pollutant Discharge Elimination System (NPDES) requirements established by the State Water Resources Control Board. Additionally, as outlined in Chapter 5, Sustainability, of the Specific Plan, measures for the reduction, treatment, and infiltration of water flows include the use of plant materials and species that are native, drought-tolerant and heat-resistant; the installation of high efficiency, xeriscape irrigation systems to reduce the amount of water devoted to landscaped areas, such as moisture sensors, drip and bubbler irrigation, and low-angle, low-flow nozzles on sprayheads; and the use of swales with native or drought-tolerant grasses to collect and filter water runoff. Additionally, as described in Chapter 3, *Project Description*, of the DEIR, and shown on Figure 3-3, *Development Plan*, the proposed project would include the development of three onsite detention basins, which would allow water recharge, reduce drainage runoff, and control the rate of storm flows from the site. Furthermore, the two neighborhood parks would serve dual functions as recreational areas and detention basins.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy WA-24: Local governments should prevent development in flood hazard areas lacking appropriate protections, especially in alluvial fan areas.	***Consistent:*** The potential impacts from flood hazards on the proposed project are discussed in Section 5.7, *Hydrology and Water Quality*. As outlined in Section 5.7, the entire project site is in the Federal Emergency Management Agency flood hazard Zone X, meaning that it is outside of both 100- and 500-year floodplains. Therefore, project development would not result in flood hazards to people or structures, or redirect flood flows within a flood hazard area.
Policy WA-25: Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-26: Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, and conversion of impervious surfaces, to maximize benefits and share costs.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-27: Developers and local governments should maximize pervious surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.	***Consistent:*** The proposed project's impacts on hydrology are analyzed in Section 5.7, *Hydrology and Water Quality*. As outlined in Section 5.7, implementation of the proposed project would result in the conversion of undeveloped land to a master-planned residential community. Therefore, the amount of pervious surface would drastically change. However, as outlined in the Specific Plan, measures that would assist the infiltration of water flows, protect water quality, and reduce flooding include diversion of runoff into detention basins to allow water recharge, reduce drainage runoff, and control the rate of storm flows from the site; the collection of rainwater onsite through the use of stormwater management practices such as the incorporation of infiltration basins and bioswales; the use of pervious or open-grid paving for driveways, walkways, plazas, and parking areas to facilitate groundwater recharge; and the use of swales with native or drought-tolerant grasses to collect and filter water runoff. Additionally, as outlined in Section 5.7, project applicants would be required to comply with all local, state, and federal requirements related to water quality, including the NPDES requirements established by the State Water Resources Control Board, and the implementation of a stormwater pollution prevention plan, which is required to list best management practices. Further, as shown in Figure 3-3, *Development Plan*, the proposed project would include permeable areas such as parks and natural and controlled open space.
Policy WA-28: Local governments should maintain and update Best Management Practices for water resource planning and implementation.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-29: Local governments should coordinate with neighboring communities and watershed stakeholders to identify potential collaborative mitigation strategies at the watershed level to properly manage cumulative impacts within the watershed.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-30: Local governments should adopt MOUs and JPAs among local entities to establish participation in the leadership and governance of integrated watershed planning and implementation.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy WA-31: Local governments should increase participation in the implementation of integrated watershed management plans, including planning effort initiated in neighboring communities that cross jurisdictional lines.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy WA-32: Developers and local governments should pursue water management practices that avoid energy waste and create energy savings/supplies.	***Consistent:*** See response to RCP Policies LU-6.2 and OSC-12.
Energy Action Plan	
Policy EN-8: Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms: • Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure. • Land use and planning strategies to increase biking and walking trips.	***Generally Consistent:*** The proposed project would consist of a master-planned residential development, and would not consist of mixed use or have access to public transportation. However, as shown on Figure 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive system of pedestrian and multiuse trails incorporated into the circulation plan. As shown in Figure 3-8, the proposed system of trails would connect internally and to the planned offsite regional trails. The proposed trails would not only provide a form of recreation and exercise for residents of the proposed project and surrounding communities, but would also provide an alternative mode of transportation for them.
Policy EN-9: Local governments should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. SCAG recommends the use of Appendix F, Energy Conservation, of the California Environmental Quality Act.	***Consistent:*** Section 5.16, *Greenhouse Gas Emissions*, includes a detailed energy analysis and also outlines a number of mitigation measures that would assist in conserving energy. For example, Mitigation Measure 16-1 requires that project applicants submit evidence to the satisfaction of the Community Development Director that the project uses recycled materials for at least 5 percent of construction materials. Mitigation Measure 16-6 states that, prior to the issuance of a building permit for residential development, plans shall be required to demonstrate that the project exceeds 2008 Building and Energy Efficiency Standards (Title 24) for energy efficiency by 15 percent. Other measures that would help conserve energy are outlined in Chapter 5, Sustainability, of the Specific Plan, which include but are not limited to the installation of insulation with at least 75 percent recycled content; the use of low-voltage fixtures and energy-efficient bulbs; the use of natural ventilation techniques, such as operable windows, to take advantage of airflow for cooling interiors, reducing the amount of energy needed for cooling; the use of "cool roofs" to cool building interiors and increase stormwater retention; the installation of water- and energy-saving fixtures and appliances, such as showerheads, toilets, washing machines, clothes dryers, refrigerators, and dishwashers certified as EnergyStar®-compliant; and the incorporation of building materials that take advantage of heat storage or thermal mass to reduce energy needed for heating and cooling interiors.
Policy EN-10: Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Energy saving measures that should be	***Consistent:*** See responses to policies LU-6.2 and EN-9. Refer also to Section 5.16, *Greenhouse Gas Emissions*, which includes a detailed energy analysis and also outlines a number of mitigation measures that would assist in conserving energy.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
explored for new and remodeled buildings include: • Using energy efficient materials in building design, construction, rehabilitation, and retrofit • Encouraging new development to exceed Title 24 energy efficiency requirements. • Developing Cool Communities measures including tree planting and light-colored roofs. These measures focus on reducing ambient heat, which reduces energy consumption related to air conditioning and other cooling equipment. • Utilizing efficient commercial/residential space and water heaters: This could include the advertisement of existing and/or development of additional incentives for energy efficient appliance purchases to reduce excess energy use and save money. Federal tax incentives are provided online. • Encouraging landscaping that requires no additional irrigation: utilizing native, drought tolerant plants can reduce water usage up to 60 percent compared to traditional lawns. • Encouraging combined heating and cooling (CHP), also known as cogeneration, in all buildings. • Encouraging neighborhood energy systems, which allow communities to generate their own electricity • Orienting streets and buildings for best solar access. • Encouraging buildings to obtain at least 20% of their electric load from renewable energy.	
Policy EN-11: Developers and local governments should submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, for any project anticipated to require substantial utility consumption. Any infrastructure improvements necessary for project construction should be completed according to the specifications of the energy provider.	***Consistent:*** Section 5.16, *Greenhouse Gas Emissions*, includes a detailed analysis of the proposed project's energy needs and impacts and also outline a number of mitigation measures that would assist in conserving energy.
Policy EN-12: Developers and local governments should encourage that new buildings are able to incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources.	***Consistent:*** See responses to RCP Policies LU-6.2 and EN-9. Refer also to Section 5.16, *Greenhouse Gas Emissions*, which includes a detailed energy analysis and also outlines a number of mitigation measures that would assist in conserving energy.
Policy EN-13: Local governments should support only the use of the best available technology including monitoring, air, and water impacts for locating any nuclear waste facility.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy EN-14: Developers and local governments should explore programs to reduce single occupancy vehicle trips such as telecommuting, ridesharing, alternative work schedules, and parking cash-outs.	***Generally Consistent:*** The proposed project would consist of a master-planned residential development, which would most assuredly increase single-occupancy vehicle trips in the project area and region due to the nature of single-family development. However, as shown in Figure 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive system of pedestrian and multiuse trails incorporated into the circulation plan, which would not only provide a form of recreation and exercise for residents of the proposed project and surrounding communities, but would also provide an alternative mode of transportation. Additionally, Section 5.16, *Greenhouse Gas Emissions*, also includes a mitigation measure that would help reduce single-occupancy vehicle trips during the proposed

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
	project's construction phase. Mitigation Measure 16-5 requires that construction contractors provide alternative transportation mode incentives, such as carpooling for workers to and from the worksite on days that construction activities require 200 or more workers.
Policy EN-15: Utilities and local governments should consider the most cost-effective alternative and renewable energy generation facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy EN-16: Local governments and project implementation agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as: • Encouraging investment in transit, including electrified light rail • Expanding light-duty vehicle retirement programs • Increasing commercial vehicle fleet modernization • Implementing driver training module on fuel consumption • Replacing gasoline powered mowers with electric mowers • Reducing idling from construction equipment • Incentivizing alternative fuel vehicles and equipment • Developing infrastructure for alternative fueled vehicles • Increasing use and mileage of High Occupancy Vehicle (HOV), High Occupancy Toll (HOT) and dedicated Bus Rapid Transit (BRT) lanes • Implementing truck idling rule, devices, and truck-stop electrification • Requiring electric truck refrigerator units • Reducing locomotives fuel use • Modernizing older off-road engines and equipment • Implementing cold ironing at ports • Encouraging freight mode shift • Limit use and develop fleet rules for construction equipment • Requiring zero-emission forklifts • Developing landside port strategy: alternative fuels, clean engines, electrification	***Consistent:*** See responses to RCP Policies LU-6.2, EN-9, and EN-14. Additionally, as outlined in Mitigation Measure 2-3 of Section 5.2, *Air Quality*, the construction contractor shall implement the following measures on an going basis during grading and construction activities: • The project applicant shall specify in the construction bid that construction contractors are required to use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over 50 horsepower. A list of construction equipment, by type and model year, shall be maintained by the construction contractor on-site. • The construction contractor shall ensure that all construction equipment is properly serviced and maintained to the manufacturer's standards to reduce operational emissions. • The construction contractor shall limit nonessential idling of construction equipment to no more than five consecutive minutes. Refer to Section 5.16, *Greenhouse Gas Emissions*, for more information regarding alternative energy resources and a detailed analysis of the proposed project's design features/elements and mitigation measures that would ensure minimal impacts on climate change and energy resources. Additionally, a detailed air quality analysis was completed for the proposed project and is included in Appendix C of this DEIR.
Policy EN-17: Utilities should consider increasing capacity of existing transmission lines, where feasible.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy EN-18: Utilities should install and maintain California Best Available Control Technologies on all power plants at the US-Mexico border.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy EN-19: Subregional and local governments should explore participation in energy efficiency programs provided by their local utility such as the Ventura Regional Energy Office, South Bay Energy Savings Center, and the San Gabriel Valley Energy Wise program. These programs can offer customized incentives and public awareness campaigns to reduce energy consumption.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Air Quality Action Plan	
Policy AQ-5: Local governments should implement control measures from local Air Quality Management Plans (AQMPs) such as accelerating the turnover of older, more polluting mobile and stationary source equipment using AB 2766 funding per the State Implementation Plan (SIP).	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy AQ-6: Local governments should support and pursue environmentally sustainable strategies that implement and complement climate change goals and outcomes such as updating their General Plans to help address the State's AB 32 mandate. This should be consistent with state guidelines and requirements.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy AQ-7: Local governments should develop policies that discourage the location of sensitive receptors that expose humans to adverse air quality impacts such as amending General Plans, zoning ordinances, business licensing, and related land use permitting processes to minimize human health impacts from exposure of sensitive receptors to local sources of air pollution. Jurisdictions should consider applicable guidance documents, such as ARB's Air Quality and Land Use Handbook: A Community Health Perspective and the South Coast AQMD's Guidance Document for Addressing Air Quality Issues.	***Consistent:*** As shown on Figure 3-3, *Development Plan*, the proposed project would consist of a master-planned residential development that would be nestled along the foothills of the San Bernardino National Forest. Residents of the proposed project would be located adjacent to the natural areas and resources of the forest. No adverse air quality impacts from the adjacency or proximity of incompatible uses, such as commercial or industrial uses, would occur. Additionally, the proposed residences would be protected from air quality impacts by locating them away from high air pollution sources in the project area, such as I-215, which is about 0.75 mile from the nearest proposed residence. A detailed air quality analysis was completed for the proposed project and is included in Appendix C of this DEIR. Additionally, refer to Section 5.2, *Air Quality*, for a detailed air quality analysis and the proposed project's design features/elements and mitigation measures that would ensure minimal air quality impacts.
Policy AQ-8: Local governments should practice and promote sustainable building practices by:	
Policy AQ-8.1: Updating their General Plans and/or zoning ordinances to promote the use of green building practices, which include incorporating LEED design standards and utilizing energy efficient, recycled-content and locally harvested or procured materials.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy AQ-8.2: Developing incentive programs (e.g. density bonuses) to encourage green building and resource and energy conservation in development practices.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy AQ-8.3: Adopting policies that strive for carbon neutrality for their own facilities and operations	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Solid Waste Action Plan	
Policy SW-9: Local governments should update general plans to reflect solid waste sustainability issues such as waste reduction goals and programs (1996 RCP; 135).	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy SW-10: Local governments should discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-11: Local governments should discourage exporting of locally generated municipal solid waste (destined for landfills) outside of the SCAG region. Disposal within the county where the waste originates should be encouraged as much as possible, when appropriate. Green technologies for long-distance transport of waste (e.g., clean engines, clean locomotives or electric rail for waste-by-rail disposal systems) and consistency with AQMP and RTP policies should be required.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-12: Local governments should maximize waste diversion goals and practices and look for opportunities for voluntary actions to exceed the 50% waste diversion target.	***Not Applicable:*** Section 5.16, *Greenhouse Gas Emissions*, outlines several mitigation measures that would assist the City of San Bernardino in maximizing its waste diversion goals, including: • Mitigation Measure 16-1 requires that project applicants submit evidence to the satisfaction of the Community Development Director that the project uses recycled materials for at least 5 percent of construction materials. • Mitigation Measure 16-3 requires that project applicants prepare a construction waste management plan to reduce construction debris and material by diverting at least 50 percent of the total of all project-related nonhazardous construction and debris from landfills to recycling or reuse operations. • Mitigation Measure 16-4 requires project applicant to submit evidence to the satisfaction of the Development Services Director that the project uses insulation with at least 75 percent recycled content, such as cellulose, newspaper, or recycled cotton. Section 5.15, *Utilities and Service Systems*, outlines the proposed project's impact on solid waste services. As stated in Section 5.15, the County and City of San Bernardino have recycling programs and incentives to reduce the amount of solid waste being transported to landfills. Additionally, the Waste Reduction and Pollution Prevention programs of the City help both residents and businesses reduce waste and find recycling solutions. Furthermore, the City offers pick-up services for waste, green waste, and recycling for residents and businesses (CIWMB 2009).
Policy SW-13: Local governments should build local markets for waste prevention, reduction, and recycling practices.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-14: Developers and local governments should integrate green building measures into project design and zoning including, but not limited to, those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Construction reduction	***Consistent:*** See responses to RCP Policies LU-6.2, EN-9, and SW-12. Refer also to Section 5.15, *Utilities and Service Systems*, for a detailed analysis of the proposed project's impacts on solid waste. Furthermore, refer to Section 5.16, *Greenhouse Gas Emissions*, which includes a detailed energy analysis and also outlines a number of mitigation measures that

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
measures to be explored for new and remodeled buildings include: • Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities. • An ordinance that requires the inclusion of a waste management plan that promotes maximum C&D diversion. • Source reduction through (1) use of building materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed building materials, and (5) use of structural materials in a dual role as finish material (e.g. stained concrete flooring, unfinished ceilings, etc.). • Reuse of existing building structure and shell in renovation projects. Building lifetime waste reduction measures that should be explored for new and remodeled buildings include: • Development of indoor recycling program and space. • Design for deconstruction. • Design for flexibility through use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable components.	would assist in conserving energy and minimizing solid-waste impacts.
Policy SW-15: Local governments should develop ordinances that promote waste prevention and recycling such as: requiring waste prevention and recycling efforts at all large events and venues; implementing recycled content procurement programs; and instituting ordinances to divert food waste away from landfills and toward food banks and composting facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-16: Local governments should support environmentally friendly alternative waste management strategies such as composting, recycling, and conversion technologies.	***Not Applicable:*** See response to RCP Policy SW-12. Refer also to Section 5.15, *Utilities and Service Systems*, for a detailed analysis of the proposed project's impacts on solid waste.
Policy SW-17: Developers and local governments should develop and site composting, recycling, and conversion technology facilities that are environmentally friendly and have minimum environmental and health impacts.	***Consistent:*** See responses to RCP Policies LU-6.2, EN-9, and SW-14. Refer also to Section 5.15, *Utilities and Service Systems*, for a detailed analysis of the proposed project's impacts on solid waste. Furthermore, refer to Section 5.16, *Greenhouse Gas Emissions*, which includes a detailed energy analysis and also outlines a number of mitigation measures that would assist in conserving energy and minimizing solid-waste impacts.
Policy SW-18: Developers and local governments should coordinate regional approaches and strategic siting of waste management facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-19: Developers and local governments should facilitate the creation of synergistic linkages between community businesses and the development of eco-industrial parks and materials exchange centers where one entity's waste stream becomes another entity's raw material by making priority funding available for projects that involve co-location of facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Table 5.8-2
SCAG RCP Consistency Analysis

SCAG Policy	Project Compliance
Policy SW-20: Developers and local governments should prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities near existing waste management or material recovery facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
Policy SW-21: Local governments should increase education programs to increase public awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the County and City level and if appropriate, at local school districts and education facilities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Source: 2008 SCAG Regional Comprehensive Plan.

SCAG RTP Consistency Analysis

Table 5.8-3 provides an assessment of the proposed project's relationship to pertinent 2008 SCAG RTP goals. The analysis contained in Table 5.8-3 concludes that the proposed project would be consistent with the applicable RTP goals. Therefore, implementation of the proposed project would not result in significant land use impacts related to relevant RTP goals.

Table 5.8-3
SCAG RTP Consistency Analysis

RTP Goals	Project Compliance
RTP G1: Maximize mobility and accessibility for all people and goods in the region. ***RTP G2:*** Ensure travel safety and reliability for all people and goods in the region. ***RTP G3:*** Preserve and ensure a sustainable regional transportation system. ***RTP G4:*** Maximize the productivity of our transportation system.	***Consistent:*** As shown on Figures 3-6, *Circulation Plan*, and 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive and functional system of vehicular roads and pedestrian and multiuse trails, respectively, which would ensure that mobility and accessibility for all residents and visitors is maximized. The trail system depicted in Figure 3-8 would not only provide an important and convenient linkage system throughout the project area, but also to surrounding communities and uses, thereby offering an alternative mode of transportation for residents and visitors. The roadways within the proposed project's circulation plan (see Figure 3-6) would be consistent with the roadway standards outlined in the City's General Plan. They would be designed to maximize the regional and local vehicular circulation system in the project area. A project-specific traffic study was also completed for the proposed project and is included in Appendix K to this DEIR. As discussed in Section 5.14, *Transportation and Traffic*, under both future conditions (years 2013 and 2035) with and without the project, the intersections of Palm Avenue at both the I-215 freeway northbound ramps and southbound ramps would operate at unacceptable level of service (E or worse). However, improvements to the Palm Avenue and I-215 ramps intersection are programmed for installation by the City of San Bernardino. These improvements would increase year 2035 LOS to B during morning peak hour traffic on the northbound ramps, to D during evening peak hour traffic on the northbound ramps,

Table 5.8-3
SCAG RTP Consistency Analysis

RTP Goals	Project Compliance
	and to C during both morning and evening peak hour traffic on southbound ramps. Additionally, as part of project development, all necessary traffic and circulation improvements would be installed and/or funded to ensure that the City's roadways function as intended. Furthermore, as shown in Figure 3-6, the proposed project's circulation plan would streamline and coordinate access points entering the project site to maximize efficient circulation surrounding and within the project area, to maximize intersection capacities, and to maintain public safety. The Spring Trails Specific Plan also encourages the use of traffic-calming measures within the project site to ensure the safety of pedestrians, such as the provision of special patterned paving at important intersections and trail crossings within the Specific Plan area (see Chapter 4, Design Guidelines).
RTP G5: Protect the environment, improve air quality and promote energy efficiency.	***Consistent:*** The CEQA process ensures that plans at all levels of government consider all environmental impacts. Various sections of this DEIR appropriately address the potential environmental impacts related to development of the proposed project and outline mitigation measures to reduce any impacts, as applicable and feasible. For example, Sections 5.2, *Air Quality*, and 5.16, *Greenhouse Gas Emissions*, address air quality, energy, and global climate impacts that would occur as a result of implementation of the proposed project, and apply mitigation measures to reduce any impacts, as applicable and feasible. See responses to policies LU-6.2 and EN-9.
RTP G6: Encourage land use and growth patterns that complement our transportation investments and improves the cost-effectiveness of expenditures.	***Consistent:*** The project's proposed land uses would complement the existing and proposed circulation and transportation facilities in and around the project area. For example, the land uses would be located and designed in a manner that would ensure use of existing and future vehicular and nonvehicular transportation system. As shown in Figure 3-8, *Trails, Parks, and Open Space*, the proposed system of trails would connect internally and to the planned offsite regional trails. The proposed trails would not only provide a form of recreation and exercise for residents of the proposed project and surrounding communities, but would also provide an alternative mode of transportation. Additionally, as a part of individual project developments, all necessary traffic and circulation improvements would be installed and/or funded to ensure that the City's roadways function as intended.
RTP G7: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.

Source: 2008 SCAG Regional Transportation Plan.

SCAG Compass Growth Vision Consistency Analysis

Table 5.8-4 provides an assessment of the proposed project's relationship to advisory SCAG CGV principles. The analysis contained in Table 5.8-4 concludes that the proposed project would be generally consistent with

the advisory CGV principles. Therefore, implementation of the proposed project would not result in significant land use impacts related to the advisory CGV principles.

Table 5.8-4
SCAG Compass Growth Vision Consistency Analysis

	Compass Blueprint Principles	*Revised Plan of Development Compliance with Principle*
Improve Mobility for All Residents		
GV P1.1	Encourage transportation investments and land use decisions that are mutually supportive.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
GV P1.2	Locate new housing near existing jobs and new jobs near existing housing.	***Consistent:*** The project would create more housing in a jobs-rich city. The proposed project would create a jobs/housing ratio that is slightly more balanced compared to the projected buildout in the area, improving the jobs/housing ratio within the City. The proposed project's impacts on housing and employment are discussed in detail in Section 5.11, *Population and Housing*.
GV P1.3	Encourage transit-oriented development.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable. As shown in Figure 3-3, *Development Plan*, the proposed project is a master-planned residential community that would be nestled along the foothills of the San Bernardino National Forest. Public transit does not exist in the project area.
GV P1.4	Promote a variety of travel choices.	***Consistent:*** The project area is not served by public transit. However, as shown in Figures 3-6, *Circulation Plan*, and 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive and functional system of vehicular roads and pedestrian and multiuse trails, respectively, which would ensure that a variety of travel choices is provided. The trail system depicted in Figure 3-8 would not only provide an important and convenient linkage system throughout the project area, but also to surrounding communities and uses, thereby offering an alternative mode of transportation for residents and visitors.
Foster Livability in All Communities		
GV P2.1	Promote infill development and redevelopment to revitalize existing communities.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable. The project site is not an infill or redevelopment site.
GV P2.2	Promote developments, which provide a mix of uses.	***Not Consistent:*** As shown in Figure 3-3, *Development Plan*, the proposed project is a master-planned development that would only include residential, recreational, and open space uses. A mixed-use development is not proposed.

Table 5.8-4
SCAG Compass Growth Vision Consistency Analysis

	Compass Blueprint Principles	Revised Plan of Development Compliance with Principle
GV P2.3	Promote "people scaled," walkable communities.	***Consistent:*** As shown in Figure 3-3, *Development Plan*, the proposed project is a master-planned residential community that also includes open space and park amenities. As shown in Figure 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would also include a comprehensive system of pedestrian and multiuse trails, which would not only provide an important and convenient walkable linkage system throughout the project area and its recreational uses, but also to surrounding communities and uses.
GV P2.4	Support the preservation of stable, single-family neighborhoods.	***Consistent:*** With the exclusion of an existing single-family residence, the project site is vacant, undeveloped land along the foothills of the San Bernardino National Forest. The project area consists of undeveloped land to the north, west, and east. To the south are scattered rural residences. Implementation of the proposed project would include the preservation of the existing onsite residence. Additionally, the proposed project's layout and density would not have any impacts on the existing scattered rural residences south of the project site. Furthermore, the Specific Plan also includes development standards and design guidelines that would dictate the scale of buildings, landscape and streetscape design, and setbacks.
Enable Prosperity for All People		
GV P3.1	Provide, in each community, a variety of housing types to meet the housing needs of all income levels.	***Generally Consistent:*** As shown in Figure 3-3, *Development Plan*, the proposed project is a master-planned residential community that includes small- and large-lot single-family residences. The proposed residential units would include attractive, modern housing that would provide "move-up" opportunities for residents in the project vicinity and the City of San Bernardino. However, a variety of housing types would not be available, as the proposed project would only offer for-sale single-family residences. Section 5.11, *Population and Housing*, contains further information about the proposed project's population and housing needs and impacts.
GV P3.2	Support educational opportunities that promote balanced growth.	***Not Applicable:*** This is not a project-specific policy and is therefore not applicable.
GV P3.3	Ensure environmental justice regardless of race, ethnicity or income class.	***Consistent:*** The proposed project strives to mitigate environmental impacts and in doing so upholds environmental justice regardless of race, ethnicity, or income class.
GV P3.4	Support local and state fiscal policies that encourage balanced growth.	***Consistent:*** The proposed project encourages balanced growth in the project area through the development of a high-quality, low-density master-planned community that would provide for residential, open space, and recreational uses. The Specific Plan also strives to comply with applicable local and state fiscal policies.

Table 5.8-4
SCAG Compass Growth Vision Consistency Analysis

	Compass Blueprint Principles	Revised Plan of Development Compliance with Principle
GV P3.5	Encourage civic engagement	***Consistent:*** The proposed project promotes social and civic engagement through the implementation of a well-designed and walkable residential master-planned development and through the inclusion of open space and recreational opportunities and facilities, which would foster community interaction. Additionally, the CEQA process and the City's entitlement review process, by their very nature, foster civic involvement and public participation.
Promote Sustainability for Future Generations		
GV P4.1	Preserve rural, agricultural, recreational, and environmentally sensitive areas.	***Consistent:*** With the exclusion of an existing single-family residence, the project site is vacant, undeveloped land along the foothills of the San Bernardino National Forest. As disclosed in the Initial Study (see Appendix A1), no impacts to agricultural resources would occur. As outlined in Chapter 5.3, *Biological Resources*, the proposed project would impact areas of potential seasonal wetland (6.2 acres; Figure 5.3-3, *Jurisdictional Wetland Boundaries*), various plant communities, including Riversidian sage scrub, and woodland. Wildlife corridors are present on the northern portion of the project site and under the secondary access road. Impacts to biological resources would be less than significant with the implementation of Mitigation Measures 3-1 through 3-14. As disclosed in Chapter 5.17, *Forest Resources*, impacts to forest resources would be less than significant with implementation of Mitigation Measure 3-13.
GV P4.2	Focus development in urban centers and existing cities.	***Consistent:*** The proposed project would develop a master-planned residential community in an existing City that includes a wide range of urban uses, including many of those proposed under the Spring Trails Specific Plan.
GV P4.3	Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.	***Consistent:*** The CEQA process ensures that plans at all levels of government consider all environmental impacts. Sections 5.15, *Utilities and Service Systems*, and 5.16, *Greenhouse Gas Emissions*, appropriately address the potential environmental impacts related to resource efficiency, pollution, and solid waste. As outlined in these DEIR sections, the proposed project would adhere to state and federal environmental and climate change policies to comply with strategies to eliminate pollution and reduce waste. See also responses to RCP Policies LU-6.2 and OSC-12.
GV P4.4	Utilize "green" development techniques	***Consistent:*** See responses to RCP Policies LU-6.2 and OSC-12. Refer also to Section 5.16, *Greenhouse Gas Emissions*, which includes a detailed energy analysis and also outlines a number of mitigation measures that would assist in conserving energy.

Source: SCAG Compass Blueprint.

Compliance with Other Regional Plans

San Bernardino National Forest Land Management Plan

The northern portion of the project site (approximately 160 acres) is located within the boundaries of the SBNF. The upper 160 acres of this project are private lands within the SBNF. Since the project site is privately held, it is not subject to the Land Management Plan. However, all areas adjacent to the project site, within the SBNF, are subject to the Land Management Plan. Public access by residents would be restricted and unlawful.

Forest Service Roadless Area Conservation Plan

In 1999 the USFS proposed to prohibit road construction and reconstruction in inventoried roadless areas within the national forests. That portion of the SBNF surrounding the project site (at the project boundary), and continuing in the northwesterly direction is identified as an inventoried roadless area. The project site is not within the inventoried roadless area. See Figure 5.8-1, *Inventoried Roadless Areas*.

Compliance with Local Policy

City of San Bernardino Tree Ordinance

The development of the project would remove up to 2,400 trees (220 native species, 2,170 eucalyptus, and 10 ornamental nonnative trees) from the project site. The majority of the eucalyptus trees were planted as part of a eucalyptus plantation (MBA 2007). The applicant would be required to replace the 220 native tree species with similar native species, as required by the City's tree ordinance. The mitigation measure for the required tree replacement has been incorporated into Section 5.3, *Biological Resources*. Accordance with this mitigation measure would ensure the project's compliance with the City's tree ordinance. Additional discussion on tree replacement for carbon sequestration purposes is found in Section 5.16, *Greenhouse Gas Emissions*.

For compliance with the HMOD, see Impact 5.8-3, and for compliance with the FF Overlay District, see Impact 5.8-4.

IMPACT 5.8-2: THE PROPOSED PROJECT WOULD CONFLICT WITH THE ADOPTED UNITED STATES FISH AND WILDLIFE SERVICE SAN BERNARDINO KANGAROO RAT CRITICAL HABITAT. [THRESHOLD LU-3]

Impact Analysis: Approximately 3.9 acres of habitat for the federally endangered species would be modified, which conflicts with the policies of the USFWS-designated critical habitat. As described in Section 5.3, *Biological Resources,* no San Bernardino kangaroo rats have been observed on the project site but development of the area must follow the policies of the habitat plan. Portions of the secondary access road alignment at the southern end of the site are located within USFWS-designated critical habitat for the San Bernardino kangaroo rat (see Figure 5.3-4 in Section 5.3). Even though repeated surveys in the area have been negative for the presence of the San Bernardino kangaroo rat, the presence of critical habitat requires consultation with the USFWS under Section 7 of Federal Endangered Species Act. The USFWS would impose mitigation to offset these impacts. In anticipation of those agency-imposed requirements, and as discussed previously, mitigation is recommended in this EIR to reduce the project's impacts in this regard to less than significant levels. The prescribed mitigation is discussed further in Section 5.3.8 of this EIR. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.8-3: THE PROPOSED PROJECT WOULD REPLACE THE HILLSIDE MANAGEMENT OVERLAY DISTRICT WITH THE PROPOSED DEVELOPMENT RESTRICTIONS OF THE SPECIFIC PLAN. [THRESHOLD LU-4]

Impact Analysis: Portions of the project site are currently within the HMOD since there are slopes with of 15 percent or greater (see Figure 5.8-2). The Spring Trails Specific Plan includes development restrictions for sloped areas that would replace the need for the HMOD. The overall goals of the site-specific grading guidelines of the HMOD are to minimize the height of visible slopes, provide for more natural-appearing manufactured slopes, minimize grading quantities, minimize slope maintenance and water consumption, and provide for stable slopes and building pads.

The Conceptual Grading Plan for Spring Trails is illustrated in Figure 3-5, *Conceptual Grading Plan*. The total area that is proposed for grading is 216.7 acres, which includes 193.0 acres onsite and 23.7 acres offsite. Onsite grading encompasses roughly 2.7 million cubic yards and would balance onsite. The primary access road would require approximately 171,000 cubic yards of cut and 55,000 cubic yards of fill, which necessitates exporting approximately 116,000 cubic yards. The secondary access street would require 244,000 cubic yards of cut and 109,000 cubic yards of fill, which necessitates exporting approximately 135,000 cubic yards. Total export equals 251,000 cy.

Spring Trails has been responsibly designed to fit into the existing landscape. Project development would avoid steep hillside areas and clusters development in the lower foothill areas. This has the following benefits in terms of grading impacts:

- Minimizes hillside grading and scarring that would be visible from public rights-of-way.
- Preserves the Cable Canyon and Meyers Canyon drainage courses in their natural conditions and minimizes impacts on natural topography.
- Maintains significant natural drainage courses within the proposed development area to enhance water quality.

The Spring Trails hillside design and development standards have been prepared to be site-specific for the proposed project and are consistent with the General Plan. The HMOD design guidelines would not be necessary. Since the alternative and preferred development plans would require development of similar magnitude, this analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.8-4 DEVELOPMENT WOULD OCCUR WITHIN FOOTHILL FIRE ZONES A AND B, OR C AS IDENTIFIED IN THE CITY'S GENERAL PLAN. [THRESHOLD LU-5]

Impact Analysis: This section outlines Spring Trails' compliance with the standards contained in the City of San Bernardino's FF Overlay District. The overlay district identifies 3 foothill fire zones: A, Extreme Hazard; B, High Hazard; and C, Moderate Hazard. Development in Spring Trails is within Fire Zone C. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan since both scenarios require development in the FF Overlay District.

As shown on Figure 5.8-2, approximately one third of the site is in Fire Zone A, one third of the site is in Fire Zone B, and the remaining third is in Fire Zone C. Areas in the Foothill Fire Zones are required to be developed with proper building separation, landscaping, and building materials; adequate emergency access and evacuation routes; and sufficient water resources.

To ensure the safety of property and lives, a detailed fire safety analysis was conducted by FireSafe Planning Solutions and a fire protection plan was prepared (see Specific Plan Appendix C). The fire analysis factored in wind patterns, fuel types (vegetation), topography, weather patterns, and historical burn patterns to determine the potential severity of wildfires and appropriate protection methods. A comparison of the provisions of this Specific Plan with the FF Overlay District is provided in Specific Plan Appendix D. The table in Appendix D shows the project's compliance with the FF Overlay District standards for access and circulation, site and street identification, roadside vegetation, water supply, erosion control, construction and development design, and other miscellaneous standards such as disclosure to property owners and responsible parties for fuel modification zone maintenance. Spring Trails is compliant with all standards laid out in the FF Overlay District.

The fire protection plan prepared by FireSafe Planning Solutions was approved by the San Bernardino County Fire Department and incorporated into the Spring Trails Specific Plan. The fire prevention measures discussed in the fire protection plan are discussed in more detail in Section 5.6, *Hazards and Hazardous Materials*, of this EIR.

If approved, the Spring Trails Specific Plan shall comply with all procedural requirements cited in the City of San Bernardino Development Code, Chapter 19.64, Specific Plans. Whenever the regulations contained in this Specific Plan conflict with the regulations of the City of San Bernardino Development Code, the provisions of this Specific Plan would take precedence.

5.8.4 Cumulative Impacts

Development of the proposed project and the annexation of the adjacent 26.4 acre area, in addition to other cumulative development detailed on Table 4-1, could cause Citywide land use and planning impacts. However, upon adoption of the Spring Trails Specific Plan, the proposed project would be consistent with applicable plans, policies, and regulations of the San Bernardino General Plan, the City's zoning regulations, and SCAG's RCPG and RTP. Additionally, as with the proposed project and the 26.4-acre annexation area, cumulative projects would be subject to compliance with the local and regional plans reviewed in this section. Therefore, implementation of the cumulative projects would not combine with the proposed project to result in cumulatively considerable land use impacts. The assessment of cumulative impacts pertains to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.8.5 Existing Regulations and Standard Conditions

- Uniform Building Code
- Title 15 of the City of San Bernardino Municipal Code
- Foothill Fire Zone Overlay District (Chapter 19.15)
- Hillside Management Overlay District (Chapter 19.17)

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.8-1 and 5.8-3.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.8-2 Spring Trails development would conflict with the policies of the USFWS San Bernardino Kangaroo Rat Habitat Conservation Plan.

5.8.7 Mitigation Measures

Impact 5.8-2

The Mitigation Measure 3-2, described in Section 5.3 of this EIR, shall be followed during the Section 7 consultation process prior to the issuance of grading permits.

5.8.8 Level of Significance After Mitigation

Compliance with mitigation measure 3-2 would make Impact 5.8-2 less than significant on San Bernardino kangaroo rat habitat.

5.9 MINERAL RESOURCES

The analysis in this section is based in part on the following technical report(s):

- *Preliminary Geotechnical Investigation, Proposed Residential Development, 353 Acres, Martin Ranch. Tentative Tract 15576, Devore Area, San Bernardino County, California,* Kleinfelder Associates, July 28, 2000.

A complete copy of this study is included in the Technical Appendices to this Draft EIR (Volume II, Appendix F2).

5.9.1 Environmental Setting

Minerals are any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances. Minable minerals or an ore deposit is a deposit of ore or mineral having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the project area. The conservation, extraction, and processing of mineral resources are an integral part of development and economy of the City.

Regulatory Setting

Surface and Mining and Reclamation Act

Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the Surface Mining and Reclamation Act (SMARA) of 1975, which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the state Mining and Geology Board. SMARA declares mineral extraction as essential to the state to meet the needs of society and for continued economic welfare and identifies surface mining regulations to mitigate health and safety hazards and adverse environmental impacts. Under SMARA, the State Geologist must identify and map nonfuel mineral resources of the state to illustrate where economically significant mineral deposits are present. SMARA also requires cities and counties to incorporate in their general plans mapped designations approved by the State Mining and Geology Board.

Mineral Resources and Mineral Hazards Mapping Program

The Mineral Resources and Mineral Hazards Mapping Program (MRMHMP) of the California Geological Survey (CGS) provides data about nonfuel mineral resources, naturally occurring mineral hazards (such as asbestos, radon, and mercury), and historical mining activities throughout the state. The MRMHMP is divided into two projects: the Mineral Resources Project, which provides information about California's nonfuel mineral resources; and the Mineral Hazards Project, which maps and monitors minerals related to public health and safety concerns.

Mineral Resources Classification

The Mineral Resources Project provides information about California's nonfuel mineral resources. It classifies lands throughout the state that contain regionally significant mineral resources as mandated by SMARA. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate.

The classification process involves the determination of production-consumption (P-C) region boundaries, based on identification of active aggregate operations (production) and the market area served (consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and the local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four mineral resource zones (MRZ), described below.

- **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.

- **MRZ-2:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. MRZ-2 is divided into MRZ-2a and MRZ-2b on the basis of degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits. Areas classified MRZ-2b contain discovered mineral deposits that are significant inferred resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.

- **MRZ-3:** Areas containing known mineral occurrences of undetermined resource significance. Further exploration within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided into MRZ-3a and MRZ-3b on the basis of knowledge of economic characteristics of the resources. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

- **MRZ-4:** Areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.

The distinction between the MRZ-1 and the MRZ-4 categories is important for land use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather that there is a lack of knowledge regarding mineral occurrence. Further exploration could result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2.

As part of the classification process, an analysis of site-specific conditions is utilized to calculate the total volume of aggregates within individually identified resource sectors. Resource sectors are in MRZ-2 zones and are identified as having mineral resources of regional or statewide significance.

Existing Conditions

Regional

The project site is in the San Bernardino P-C region of the Greater Los Angeles Sand and Gravel Resource Area. This P-C region covers approximately 1,098 square miles and includes the large urbanizing portions of southwestern San Bernardino County and northwestern Riverside County. The most prominent geographic features of the P-C region include the southern slopes of the eastern San Gabriel Mountains, the southern slopes of the San Bernardino Mountains, and the Cajon Pass to the north. Other important features include

the major drainages in the area—San Antonio Creek, Day Creek, Dear Creek, Lytle Creek, Cajon Creek, and the Santa Ana River—and the huge alluvial fans that have developed at the mouths of these drainages. These drainages and alluvial fans are important sources of aggregate. Most of the construction aggregate resources in and near the City of San Bernardino are found in the sand and gravel deposits of Cajon Wash, Lytle Creek, Warm Creek, City Creek, and the Santa Ana River.

Project Site

Previous environmental analysis for the project site indicates that the site is designated MRZ-3, meaning the significance of mineral deposits on the site is unknown (City of San Bernardino 2007).

The site is on the southwestern slopes of the San Bernardino Mountains. Most of the site is a southwest-sloping alluvial terrace that is incised on the northwest and southeast by Cable Canyon and Myers Canyon, respectively. The southeast and northern parts of the site are relatively steep hillsides.

A geotechnical investigation of the site by Kleinfelder in 2000 included 25 borings to depths of up to 40 feet below ground surface. The site is underlain mostly by recent (Holocene age) and older (Pleistocene age) alluvial fan deposits dissected by active stream channel deposits within the Cable Canyon Creek and Myers Canyon Creek areas. Materials within 5 to 10 feet of the surface are mainly silty sand and sand with gravel. Below this layer the site is underlain by gravelly sands, sand with silt, and cobbles with occasional boulders at depth.

The nearest area of known mineral resources is about half a mile south of the project site in an area designated as MRZ-2 (City of San Bernardino 2005b).

5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

M-1 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.

M-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.9.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels and no additional surveys or studies pertaining to mineral resources were done for this area. The annexation would not contribute to impacts related to mineral resources.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site would be located underground. In the event that the overhead electric

lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above-ground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 lots proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their impacts to mineral resources.

IMPACT 5.9-1: SUBSTANTIAL MINERAL RESOURCES WOULD NOT BE MADE UNAVAILABLE FOR EXTRACTION BY IMPLEMENTATION OF THE PROPOSED PROJECT. [THRESHOLDS M-1 AND M-2]

Impact Analysis:

Mineral Resources Onsite

Younger alluvium onsite, designated *Qal1* (see Figure 5.5-1, *Geologic Map*), may be suitable as construction aggregate, but is present onsite in limited amounts, mainly in Cable Canyon and Myers Canyon. Most of the site surface consists of older terrace deposits (*Qot*), which are not thought to be suitable as aggregate because the boulders and gravel in these deposits are moderately weathered and crumbly, suggesting they break down easily (Buchiarelli 2009).

Locally Important Mineral Resource Recovery Sites

There are no mineral resource recovery sites designated in the City of San Bernardino General Plan on or near the project site. There are no existing mineral resource recovery operations on or next to the site.

The buildout of the project site would be similar for the preferred and alternative development plans. Therefore, this analysis is applicable both the preferred development plan and the alternative (overhead electric lines) development plan.

5.9.4 Cumulative Impacts

The proposed project would preclude future extraction of any mineral resources onsite. These resources, however, would be nominal and very unlikely to be economically recoverable. Any permanent mineral resource loss due to development of the project site would not combine with potential mineral resources in the City or region to result in cumulatively considerable impacts. Moreover, based on the General Plan EIR, buildout of the City of San Bernardino General Plan would not have a substantial adverse effect on availability of known mineral resources, primarily because remaining mineral resource sectors in the City are zoned either Public Flood Control or Industrial; mining is permitted in each of these zones, and so buildout of the general plan would not cause unavailability of any known mineral resources. Cumulative impacts, therefore, would be less than significant. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.9.5 Existing Regulations and Standard Conditions

State

- Surface Mining and Reclamation Act (SMARA)
- Mineral Resources and Mineral Hazards Mapping Program

5.9.6 Level of Significance Before Mitigation

The following impacts would be less than significant:

- Impact 5.9-1. Substantial mineral resources would not be made unavailable for extraction by implementation of the proposed project.

5.9.7 Mitigation Measures

No significant impacts have been identified and no mitigation is required.

5.9.8 Level of Significance After Mitigation

No significant impacts have been identified.

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5.10 NOISE

This section of the Draft Environmental Impact Report (DEIR) discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; and evaluates potential noise impacts associated with the Spring Trails Specific Plan project (proposed project); and provides mitigation to reduce noise impacts at sensitive residential locations. This evaluation uses procedures and methodologies as specified by the California Department of Transportation (Caltrans), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA). Noise monitoring results and modeling datasheets are included as Appendix I to this DEIR.

5.10.1 Environmental Setting

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this chapter:

- ***Sound.*** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- ***Noise.*** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- ***Decibel (dB).*** A unitless measure of sound on a logarithmic scale.
- ***A-Weighted Decibel (dBA).*** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- ***Equivalent Continuous Noise Level (L_{eq}).*** The mean of the noise level averaged over the measurement period, regarded as an average level.
- ***Day-Night Level (L_{dn}).*** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10 PM to 7 AM.
- ***Community Noise Equivalent Level (CNEL).*** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the levels occurring from 7 PM to 10 PM and 10 dB added to the sound levels occurring from 10 PM to 7 AM.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Characteristics of Sound

When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). The human hearing system is not equally sensitive to sound at all frequencies. Sound waves below 16 Hertz (Hz) are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can

hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's deemphasis of these frequencies. The normal range of human hearing extends from approximately 0 dBA to 140 dBA

Unlike linear units such as inches or pounds, decibels (dB) are measured on a logarithmic scale, representing points on a sharply rising curve. Because of the physical characteristics of noise transmission and noise perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Changes of 1 to 3 dB are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound. Table 5.10-1, *Change in Sound Pressure Level*, presents the subjective effect of changes in sound pressure levels.

Table 5.10-1
Change in Sound Pressure Level

Change in Apparent Loudness	
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen, Engineering Noise Control, 1988.

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by onsite operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance in a hard site environment. Line-source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dB for each doubling of distance.

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level during that period can be obtained. The energy-equivalent sound level (L_{eq}) is the most common parameter associated with such measurements. The L_{eq} metric is a single-number noise descriptor that represents the average sound level over a given period of time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_{02}, L_{08}, and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time, or 1, 5, and 15 minutes per hour. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment be added to quiet-time noise

levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}).

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium. A sound level of 190 dBA will rupture the eardrum and permanently damage the inner ear. Table 5.10-2 shows typical noise levels from various noise sources.

Table 5.10-2
Typical Noise Levels from Noise Sources

Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation Table 9-2136.2 1998.

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with sources such as railroads, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is described as the velocity and the rate of change of the speed is described as the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During project construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of the project, the project occupants may be subject to levels of train-generated vibration that can cause annoyance due to noise generated from vibration of the project structure and items within the structure. Analysis of this type of vibration is best measured in velocity and acceleration.

The three main wave types of concern in the propagation of groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation (known as retrograde elliptical).

- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.

- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. All PPV and RMS velocities are in in/sec and all vibration levels in this study are in dB relative to one microinch per second (abbreviated as VdB). The threshold of perception is approximately 65 VdB. Typically, groundborne vibration generated by manmade activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Manmade vibration problems are, therefore, usually confined to short distances (500 feet or less) from the source.

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at distances within 200 feet of the vibration sources. Heavy trucks can also generate groundborne vibrations, which vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities,

differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration of normal traffic on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, and heavy loads.

Regulatory Framework

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

California State Regulations

State of California Building Code

The state of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, California Building Code. These noise standards are applied tor new construction in California for the purpose of interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction in 45 dBA CNEL.

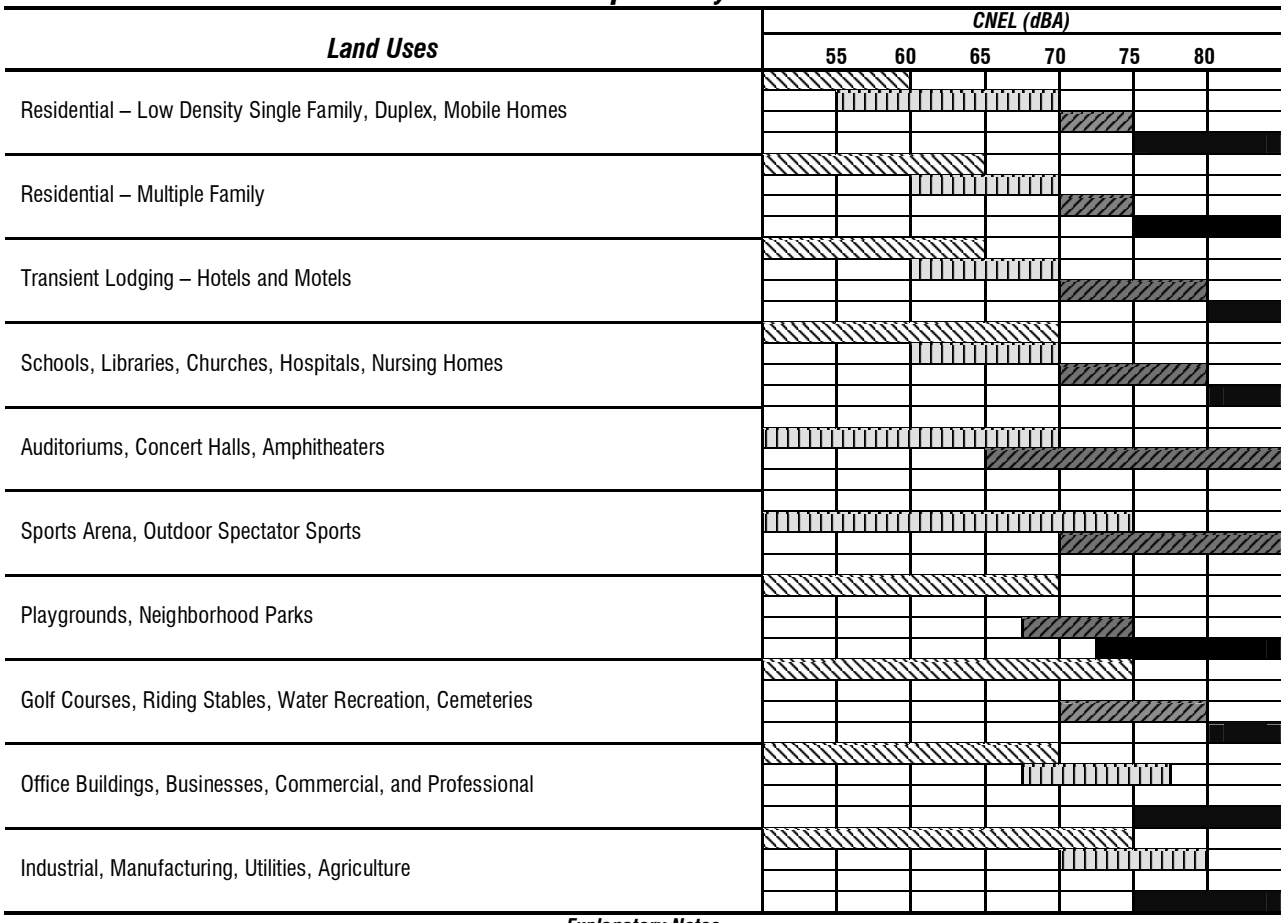


City of San Bernardino Noise Standards

Noise Compatibility

Table 5.10-3 presents a land use compatibility chart for community noise adopted by the City of San Bernardino in the Comprehensive General Plan. This table provides urban planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. It identifies normally acceptable, conditionally acceptable, and clearly unacceptable noise levels for various land uses. A conditionally acceptable designation implies new construction development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. Included in the Noise Element of the City of San Bernardino Comprehensive General Plan, the Community Noise and Land Use Compatibility standards as shown in the table may be used as planning guidelines for the review and approval of development applications in terms of the compatibility of land uses with the existing and future noise environment. According to the General Plan and Section 19.20.030.15 of the City's Municipal Code, a CNEL of 65 dBA CNEL is used as a standard for maximum permissible outdoor noise levels in residential areas.

Table 5.10-3
Noise Compatibility Matrix



Explanatory Notes

Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Generally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must shielded.

Land Use Discouraged:
New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

Source: City of San Bernardino, *Comprehensive General Plan*, Noise Element. Adopted November 1, 2005.

Nontransportation Noise Sources

The City's noise ordinance is designed to protect people from objectionable nontransportation noise sources, such as music, machinery, pumps, and air conditioners. These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a property, as measured at the property line of the noise receptor. The City's noise ordinance is codified in Chapter 8.54, Noise Control, of the City of San Bernardino Municipal Code. Pursuant to Section 8.54.020, it is unlawful for any person to create or generate noise that is plainly audible within any noise-sensitive zone, plainly audible at a distance of 50 feet from the source between the hours of 8:00 AM and 10:00 PM, and at a distance of 25 feet from the source between the hours of 10:00 PM to 8:00 AM. In addition, loading and unloading activities and operation of forklift or crane within 1,000 feet of a residence or noise-sensitive zone, or use of mechanical equipment (i.e., lawn or garden tools, sanders, drills, saws, etc.) are restricted to the hours of 8:00 AM to 8:00 PM in residential zones and between 7:00 AM to 8:00 PM in all other zones.

Construction Activities

To reduce impacts of construction on noise-sensitive receptors, the City of San Bernardino requires construction activities to be restricted to the daytime hours between 7:00 AM and 8:00 PM (Section 8.54.070, *Disturbances from Construction Activity*).

Vibration Standards

Human Annoyance

The Federal Transit Administration (FTA) provides criteria for acceptable levels of groundborne vibration for various types of special buildings that are sensitive to vibration for both vibration annoyance and architectural damage. The human reaction to various levels of vibration is highly subjective and variable. As noted in the FTA manual, "although PPV is appropriate for evaluating the potential of building damage, it is not suitable for evaluating human response" (FTA 2006). This is because it takes time for the human body to respond to vibration signals. Table 5.10-4 lists the FTA criteria for acceptable levels of groundborne vibration based on the relative perception of a vibration event for various types of vibration-sensitive land uses.

Table 5.10-4
Groundborne Vibration and Noise Impact Criteria, Human Annoyance

Land Use Category	Max L_v (VdB)[1]	Description
Workshop	90	Distinctly felt vibration. Appropriate to workshops and nonsensitive areas
Office	84	Felt vibration. Appropriate to offices and nonsensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006.
[1] As measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

Architectural Damage Criteria

The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 5.10-5. Wood-frame buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. According to the Caltrans' *Transportation Related Earthborne Vibration* (2002), extreme care must be taken when sustained pile driving occurs within 25 feet of any building;

however, the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 inch per second.

Table 5.10-5
Groundborne Vibration and Noise Impact Criteria, Architectural Damage

Building Category	PPV (in/sec)	VdB
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Nonengineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006.
Notes: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Existing Noise Environment

The noise environment at the project site is characteristic of a rural noise environment. There are relatively few existing noise sources within proximity to the project site. Consequently, the primary sources of existing noise in the project site are from transportation noise generated by the distant freeway to the south (approximately 0.70 mile to the south) and Meyers Road (Martin Ranch Road), and stationary sources from the nearby residential uses (heating ventilation and air conditioning systems, landscaping equipment, etc.).

Noise Monitoring

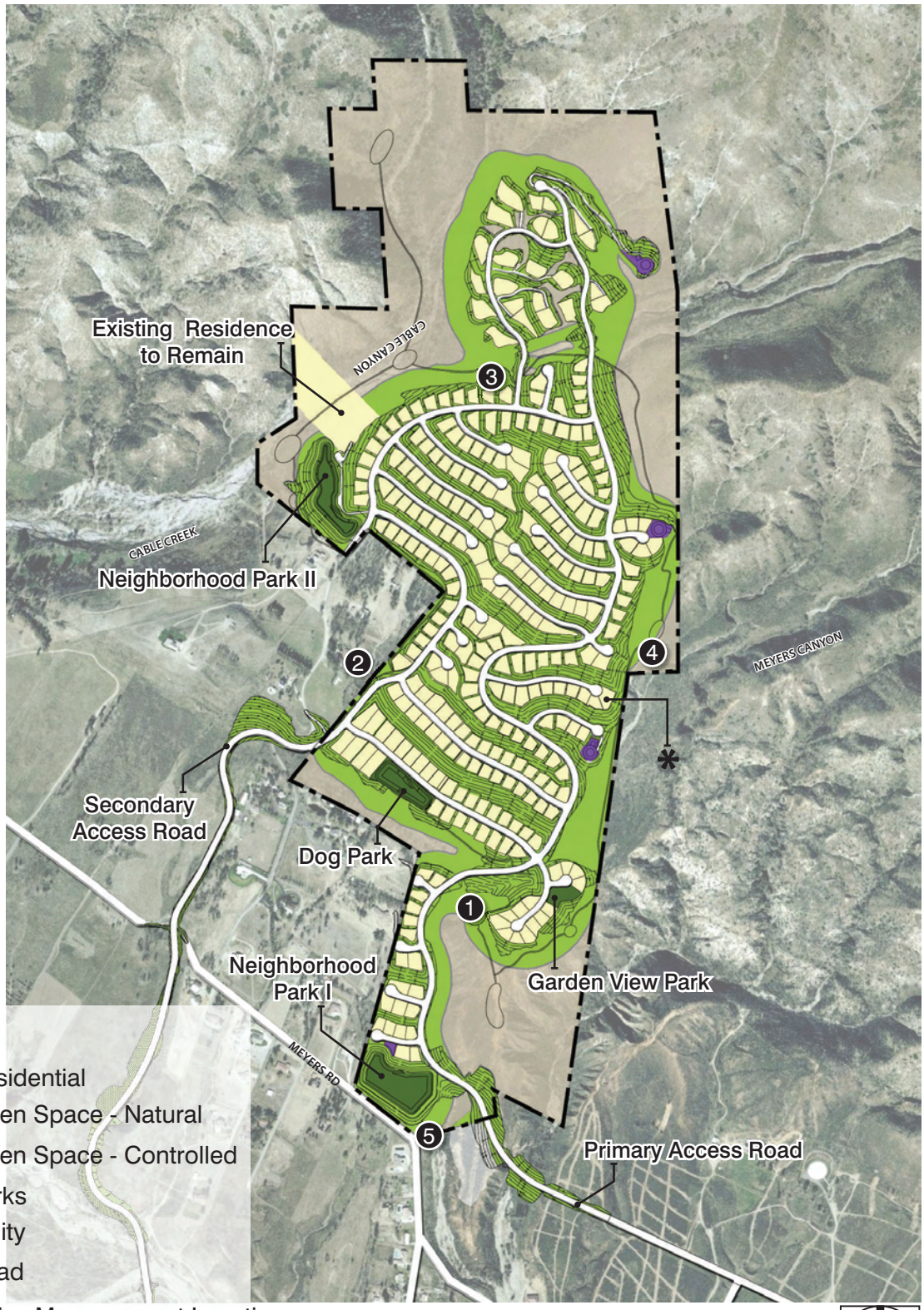
Noise monitoring was conducted for the previously circulated EIR by RKJK & Associates in 1999 and by Mestre Greve and Associates in 2004. Figure 5.10-1, *Noise Measurement Locations*, shows the noise monitoring locations. Table 5.10-6, *Ambient Noise Monitoring*, confirms that the project site is characterized by relatively low ambient noise levels. The primary source of noise during noise monitoring was from I-215 and Meyers Road (Martin Ranch road). However, noise from trains traveling on the rail lines southwest of I-215 was clearly audible and train engine noise was slightly detectable. Even though the trains were audible they likely did not contribute substantially to the measured noise levels (Mestre Greve 2004).

Table 5.10-6
Ambient Noise Monitoring

Site	Date	L_{eq}	L_{ax}	L_2	L_8	L_{25}	L_{50}	L_{min}
1	1/11/99	45	56	51	47	45	43	40
2	1/11/99	42	57	49	45	42	39	37
3	1/11/99	42	58	48	45	43	41	37
4	1/11/99	43	58	51	47	42	37	33
5	10/26/04	54	73	62	55	51	50	47

Source: Mestre Greve Associates. 2007.

Noise Measurement Locations



Source: Mestre Greve Associates

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Traffic Noise Modeling

Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system. Reducing the average motor vehicle speed reduces the noise exposure of receptors adjacent to the road. Each reduction of five miles per hour reduces noise by about approximately 1 dBA.

To assess the potential for mobile-source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the project area. Noise modeling for the construction of the proposed project was completed using the SoundPlan computer model developed by Braunstein and Berndt, GmbH. Average daily traffic volumes are provided by Kunzman Associates (June 2009). As shown in Figure 5.10-2, *Existing Traffic Noise Contours*, the primary sources of noise are I-215 and, to a much lesser extent, the smaller local roadways and collector streets.

Noise- and Vibration-Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration, including residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Noise-sensitive land uses surrounding the project site include the residential units to the south and west of the project site. In addition, North Verdemont School, Chavez Middle School, and Palm Elementary School are located to the south of the project site. Figure 5.10-3 shows the location of surrounding offsite noise- and vibration-sensitive receptors

5.10.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on he environment if the project would result in:

N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Based on local noise criteria as established in the City of San Bernardino General Plan and Municipal Code the following would be considered significant:

- Noise generated by buildout of the Spring Trails Specific Plan project would result in stationary (nontransportation) noise that results in a noise nuisance at noise-sensitive receptors as determined in Chapter 8.54, *Noise Control*, of the City's Municipal Code.

- For noise compatibility, interior noise levels in habitable noise-sensitive areas exceed 45 dBA CNEL or exterior noise levels at single-family residential noise-sensitive areas exceed 65 dBA CNEL.

N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Based on the noise criteria as established by the FTA, the following would be considered significant:

- Construction equipment would produce perceptible levels of vibration (78 VdB) during the daytime at offsite vibration-sensitive structures.

- Construction equipment would produce vibration that is strong enough to cause vibration-induced architectural damage based on the FTA which is 0.2 in/sec for typical wood-framed buildings or 0.5 in/sec for reinforced concrete, steel, or timber structures.

N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on local noise criteria as established in the City of San Bernardino Comprehensive General Plan and Municipal Code, the following would be considered significant:

- Based on the City of San Bernardino standard for maximum outdoor noise levels in residential areas, project-related traffic would increase the CNEL at any noise-sensitive receptor by an audible amount, 3 dBA and ambient noise levels exceed 65 dBA.

N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on local noise criteria as established in the City of San Bernardino Municipal Code the following would be considered significant:

- Construction activities occurring outside the hours of 7:00 AM to 8:00 PM as specified under the Municipal Code (Section 8.54.070, *Disturbances from Construction Activity*).

- Construction activities substantially elevating the ambient noise environment at noise-sensitive uses for a substantial period of time.

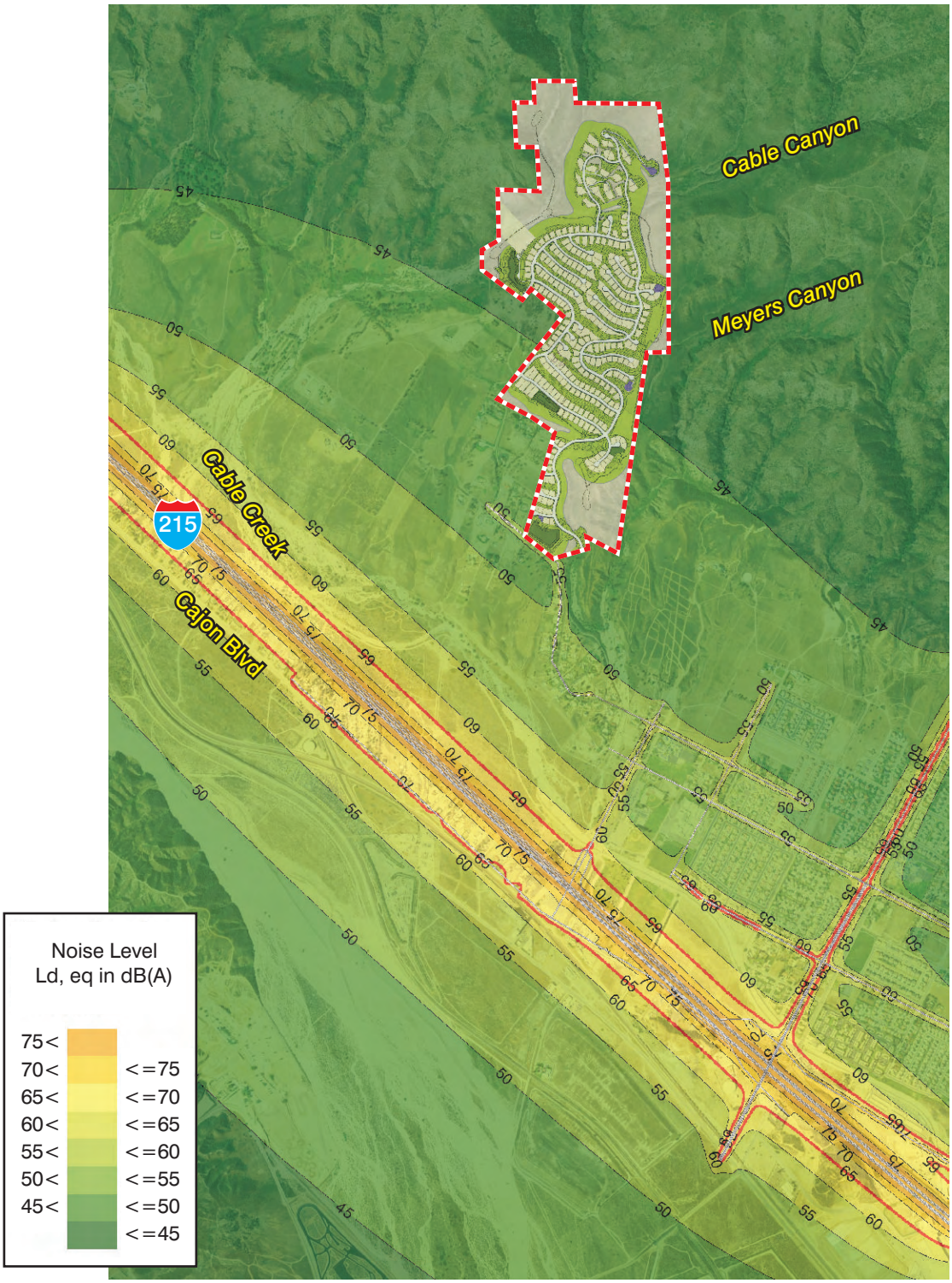
N-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

N-6 For a project within the vicinity of a private airstrip, would the project expose people residing or working the project area to excessive noise levels.

The Initial Study, included as Appendix A1, substantiates that impacts associated with the following thresholds would be less than significant: N-5 and N-6.

These impacts will not be addressed in the following analysis.

Existing Traffic Noise Contours



Source: Google Earth Pro 2009, SoundPlan

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Noise- and Vibration-Sensitive Receptors



Project Site

San Bernardino National Forest Boundary

Receptor Locations

Onsite Receptor

0 1,150

Scale (Feet)

Source: Google Earth 2009

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5.10.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels and no additional surveys or studies pertaining to noise were done for this area. The annexation would not contribute to impacts related to noise.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 lots proposed in the preferred development plan. Both development scenarios are analyzed in this section to assess their noise impacts.

IMPACT 5.10-1: PROJECT-RELATED TRAFFIC WOULD NOT SUBSTANTIALLY INCREASE AMBIENT NOISE LEVELS IN THE VICINITY OF NOISE-SENSITIVE RECEPTORS AT BUILDOUT YEAR 2013. [THRESHOLDS N-1 AND N-3]

Impact Analysis: The operations phase of the project would generate noise primarily associated with vehicular trips. According to the traffic impact analysis conducted by Kunzman Associates (May 2011), the proposed project would generate 3,149 average daily trips (ADT), with 247 trips in the morning peak-hour and 333 trips in the evening peak hour. The following analysis describes noise levels from full buildout of the Spring Trails Specific Plan project for buildout year 2013. Since vehicle trips would be similar under both scenarios, this analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Buildout Year 2013

Potential noise impacts from project-related traffic were evaluated to assess increases in the ambient noise environment in the vicinity of noise-sensitive receptors. To quantify traffic noise impacts at buildout, noise levels associated with two traffic scenarios were compared:

1. Future Year 2013 traffic without the project (2013 baseline), shown in Figure 5.10-4

2. Future Year 2013 traffic with the project, shown in Figure 5.10-5

Project-generated and cumulative traffic noise was estimated using the SoundPlan computer model. The modeling of traffic noise levels is based on traffic volumes, traffic speed, and the types of vehicles traveling on area roads. The modeling input was developed from the project traffic study. When the CNEL was 65 dB or greater under future with-project conditions, the threshold of a 3 dB increase was used as a significance criterion. A 3 dB change in noise levels is considered to be the minimum change discernible to the human ear. Figure 5.10-6 shows the change in traffic noise levels from future baseline 2013 conditions to future with-

project conditions. Figure 5.10-7 shows the change in traffic noise levels from existing conditions to future with-project conditions.

The difference in traffic noise levels between baseline 2013 no project and with project conditions represents the increase in noise attributable to project-related traffic. Project-related noise impacts may occur if there are substantial noise increases (+3 dB) in comparison to no project conditions when the CNEL is 65 dB or greater under future with project conditions. As shown in Figure 5.10-6, project-related traffic at buildout year 2013 would cause noise levels to increase by more than 3 dBA on the new access roads, along Little League Drive, and Belmont Avenue between Little League Drive and Magnolia Avenue. However, ambient noise levels would not exceed 65 dBA CNEL under year 2013 with project conditions along these roadways. A portion of the segment of Little League Drive south of Frontage Road would be within the 65 dBA CNEL ambient noise contour, however, there are no noise-sensitive receptors present. Consequently, implementation of the proposed project would not cause a substantial permanent increase in ambient noise levels and therefore noise impacts would be less than significant in year 2013.

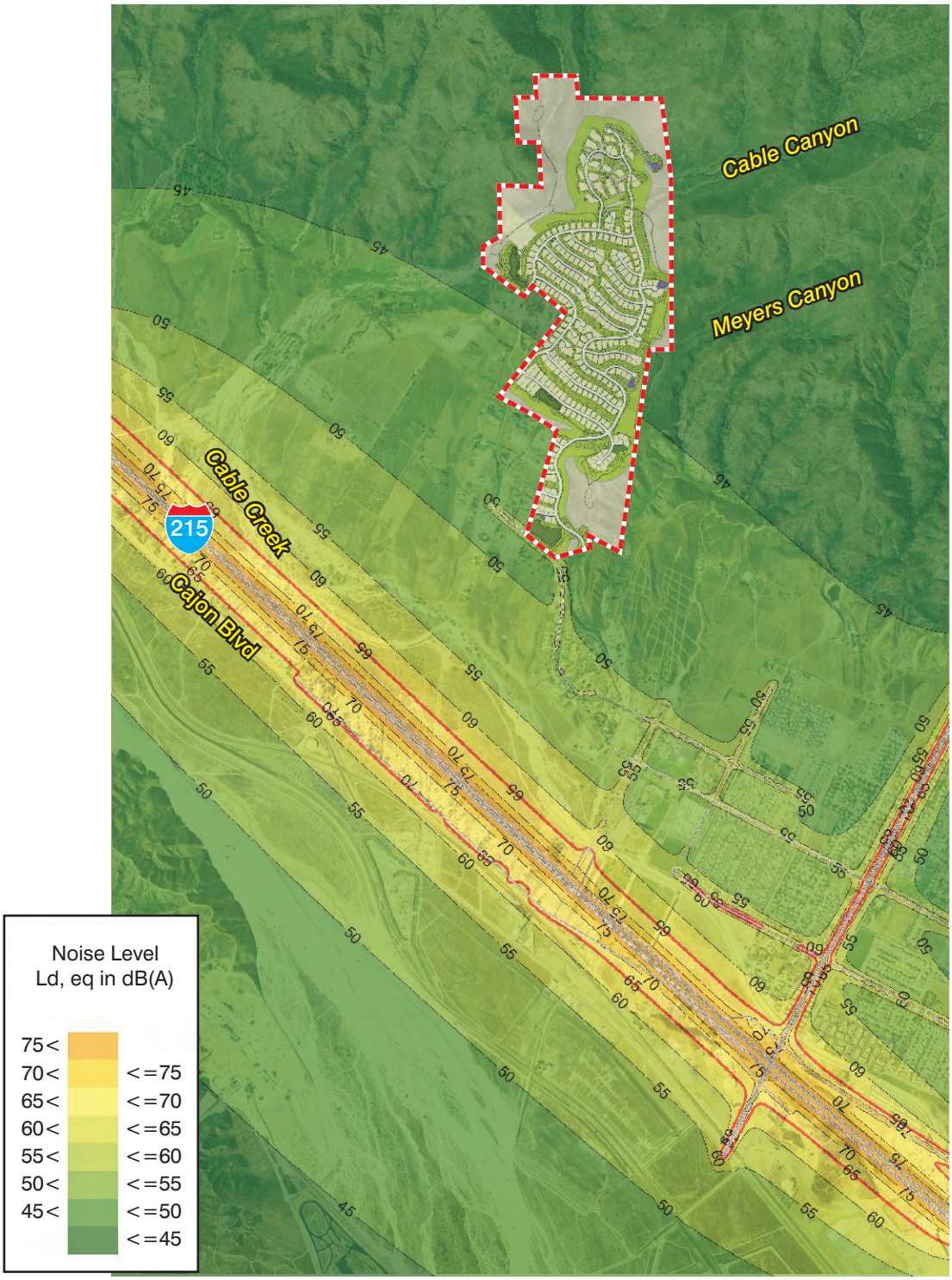
IMPACT 5.10-2 BUILDING FACADES WOULD NOT BE EXPOSED TO EXTERIOR NOISE LEVELS EXCEEDING 65 dBA CNEL AND THEREFORE INTERIOR NOISE LEVELS WOULD NOT EXCEED 45 dBA CNEL. [THRESHOLDS N-1 AND N-3]

Impact Analysis: Noise may have a significant impact if the project constructs a noise-sensitive land use in an area that is incompatible due to excessive noise. The City of San Bernardino has adopted a land use compatibility criteria for the siting of new noise-sensitive land uses within the City (see Table 5.10-3). Per the City of San Bernardino General Plan, noise-impacted projects are defined as residential projects with noise levels that exceed the City's "Normally Acceptable" compatibility criteria. For residential projects, noise-impacted projects are those that are exposed to exterior noise levels of 65 dBA CNEL or greater. Noise-impacted projects are required by the City to include upgraded noise insulation features (e.g., windows, doors, attic baffling) that achieve an exterior-to-interior noise level of 45 dBA CNEL. The majority of future ambient noise at the project area would be generated by local roadway traffic. Noise-sensitive portions of the project site include the interior of the residential dwelling units, and the exterior noise-sensitive areas of these uses.

As shown on Figure 5.10-5, traffic on the local roadways under Year 2013 with project conditions would not generate noise levels that exceed the exterior noise level of 65 dBA CNEL. Noise-sensitive uses would be exposed to exterior noise levels of 50 dBA CNEL and under. Pursuant to the California Building Code, noise-sensitive habitable rooms would be required to be designed to achieve an interior noise standard of 45 dBA CNEL. In general, exterior-to-interior transmission loss from standard building construction results in a minimum attenuation of 24 dBA under windows-closed conditions and 12 dBA under windows-open conditions (SAE 1971). Therefore, interior noise levels would not exceed the interior noise standard of 45 dBA CNEL. Consequently, noise impacts at the onsite noise-sensitive receptors would be less than significant.

The buildout of the alternative development plan would be the same as for the preferred development plan, with the exception of three fewer units. The remaining housing units would be located in essentially the same places and exposed to the same exterior noises for both the alternative and preferred development plans. Therefore, this analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

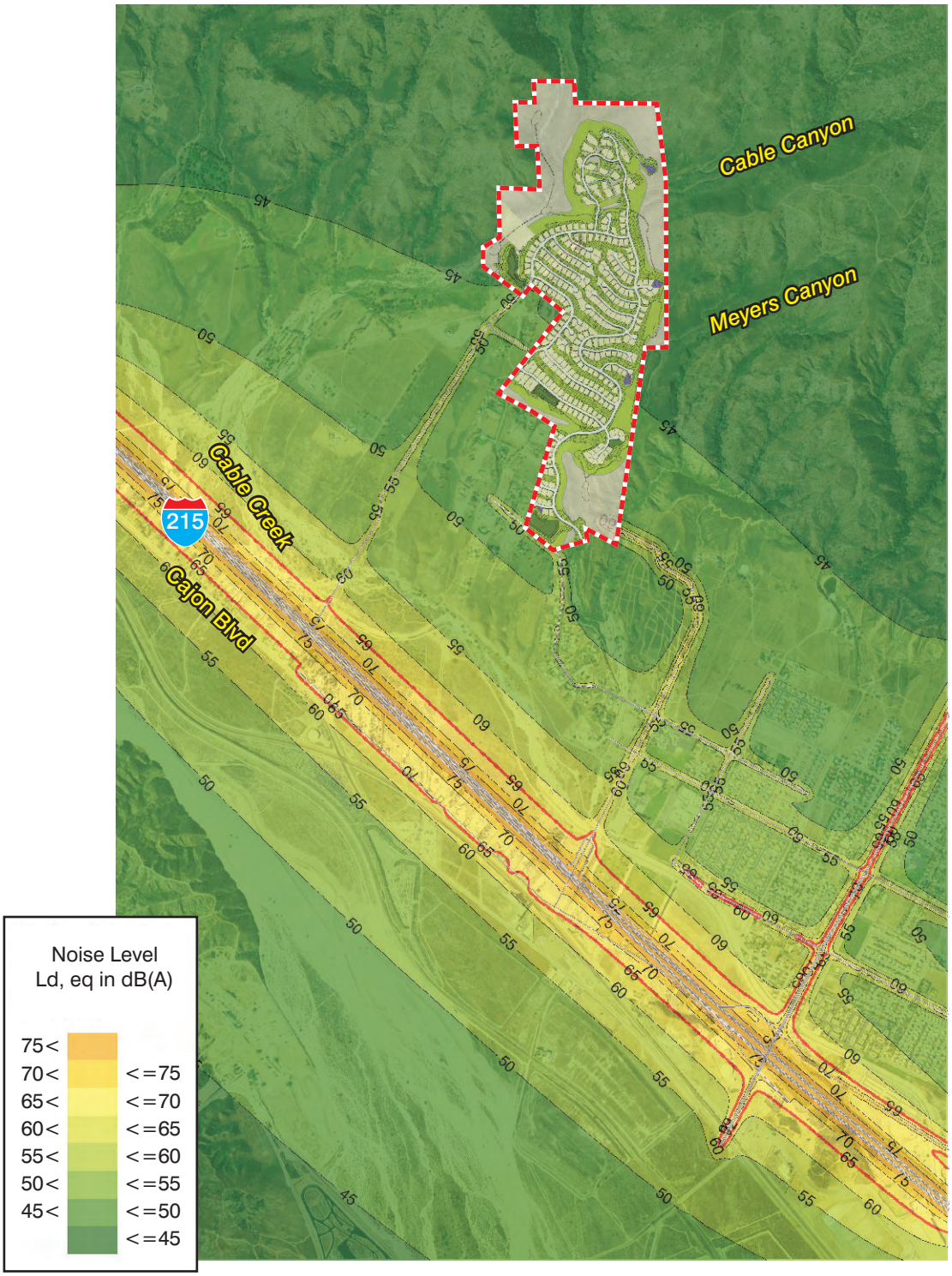
Year 2013 No-Project Traffic Noise Contours



Source: Google Earth Pro 2009, SoundPlan

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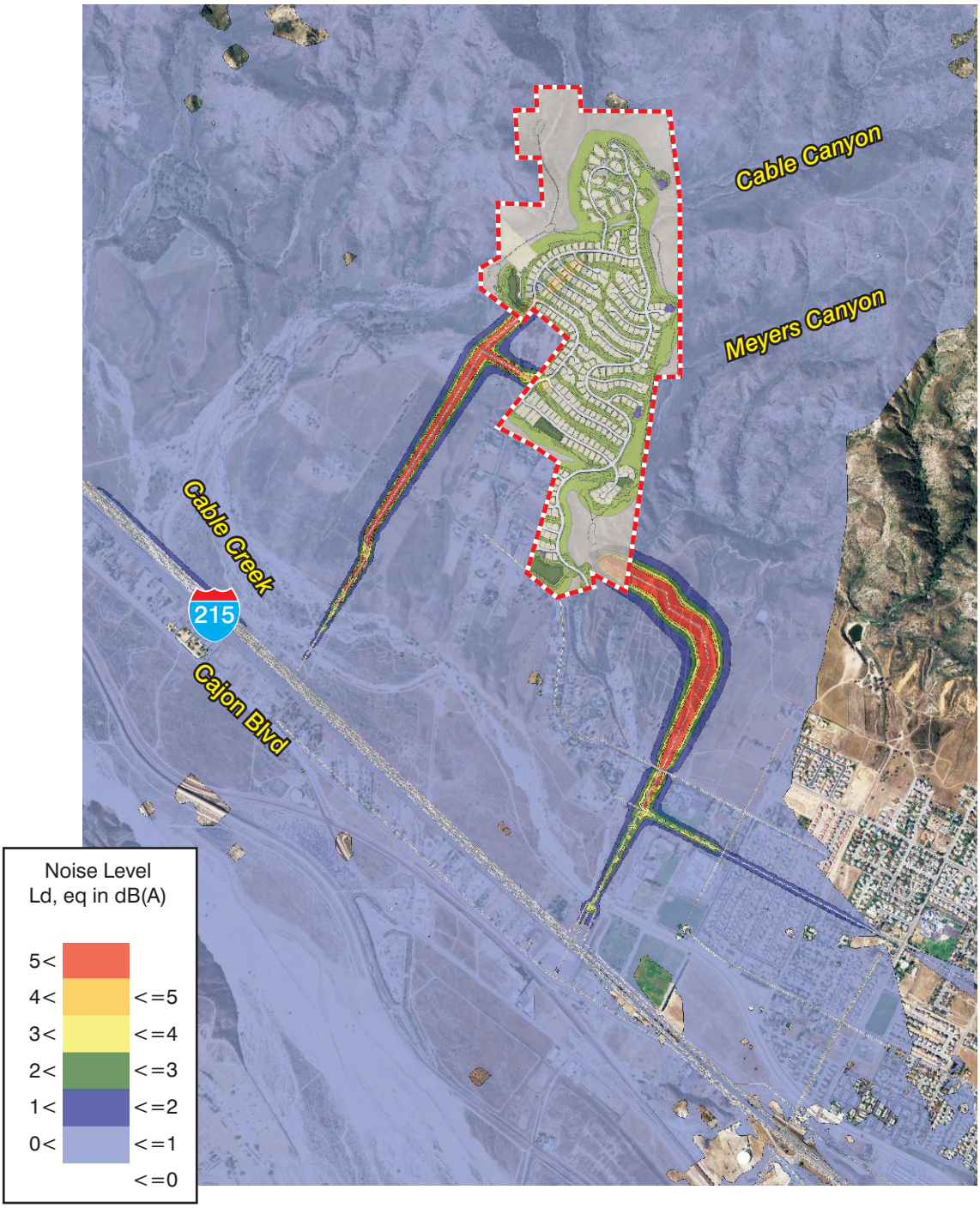
Year 2013 With-Project Traffic Noise Contours



Source: Google Earth Pro 2009, SoundPlan

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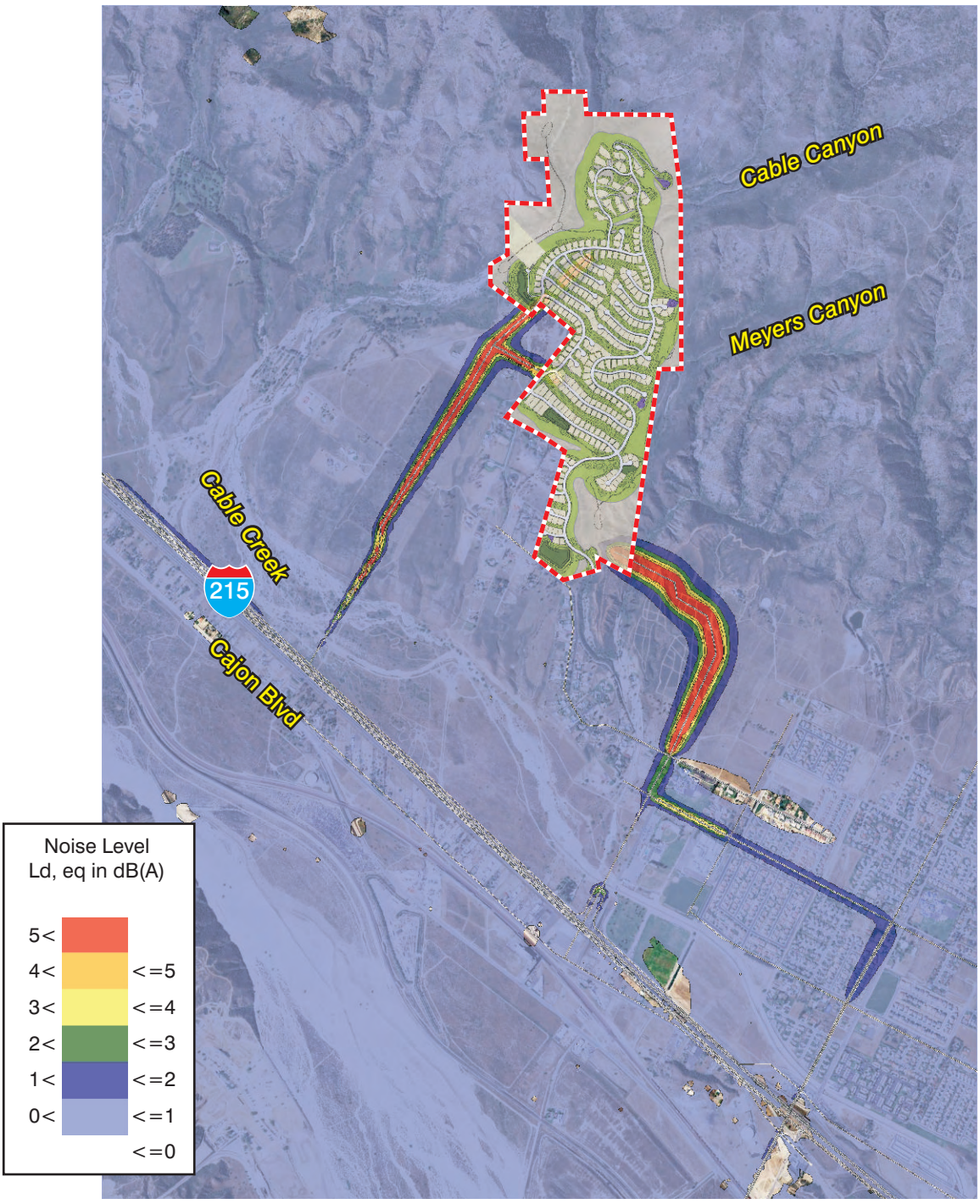
Change in Traffic Noise Levels between Year 2013 No Project and With Project



Source: Google Earth Pro 2009, SoundPlan

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Change in Traffic Noise Levels between Year 2013 With-Project and Existing Conditions



Source: Google Earth Pro 2009, SoundPlan

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IMPACT 5.10-3 PROJECT IMPLEMENTATION WOULD RESULT IN LONG-TERM OPERATION-RELATED NOISE THAT WOULD NOT EXCEED LOCAL STANDARDS. [THRESHOLDS N-1 AND N-3]

Impact Analysis: The proposed project includes the development of 307 single-family lots on a 352.8-acre site. Stationary noise generated by the proposed residential land uses has the potential to impact existing noise-sensitive receptors within the vicinity of the project site. This analysis is applicable to both the preferred development plan and the Alternative (overhead electric lines) development plan.

Residential Stationary Source Noise Impacts

Residential uses would generate stationary noise sources on the project site, including heating, ventilation, and air conditioning (HVAC) units from residential units, and noise from landscaping activities. HVAC units and other equipment would be acoustically engineered with mufflers and barriers to ensure that no exceedance of the City's noise standards would occur. Consequently, proposed residential uses would not generate substantial noise, and impacts to nearby noise-sensitive receptors would be less than significant.

IMPACT 5.10-4: THE PROJECT WOULD NOT CREATE GROUNDBORNE VIBRATION AND GROUNDBORNE NOISE. [THRESHOLD N-2]

Impact Analysis: Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment. Construction equipment can produce vibration from vehicle travel as well as grading and building activities. No pile driving, blasting, or other vibration-intensive activity would be required in the construction effort. The construction equipment mix would be the same for both project development scenarios. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Vibration Annoyance Criteria

Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Groundborne vibration is almost never annoying to people who are outdoors and is therefore evaluated in terms of indoor receivers (FTA 2006). Vibration is typically sensed at nearby structures when objects within the structure generate noise from the vibration, such as rattling windows or picture frames. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight architectural damage at the highest levels. Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site.

Onsite Construction Activities

The highest levels of vibration would be experienced when a heavy piece of construction equipment is operating or passes in proximity to the nearby vibration-sensitive structures. Levels of vibration produced by construction equipment are evaluated against the FTA's significance threshold for vibration annoyance of 78 VdB for residential structures during the daytime. To evaluate human annoyance from daytime construction activities, Table 5.10-7 lists the maximum and average levels of vibration from heavy construction equipment that would be experienced at the two nearest offsite vibration-sensitive uses to the project site and at the existing onsite residence. Although the maximum vibration levels associated with certain construction activities could be perceptible in certain instances, vibration events would be infrequent

throughout the day, would occur during the least vibration-sensitive portions of the day, and equipment would be used for a short duration when working in close proximity to vibration-sensitive receptors. Additionally, construction activities are typically distributed throughout the project site. Therefore, construction vibration is based on average vibration levels (levels that would be experienced by sensitive receptors the majority of the time) that exceed the FTA's criteria for vibration-induced annoyance at sensitive residences during the day of 78 VdB.

Table 5.10-7
Vibration Source Levels for Onsite Construction Equipment at Nearest Receptors, Vibration Annoyance

Vibration-Sensitive Use	Distance to Onsite Construction Areas (Feet)		Velocity Level (VdB)						Significance Threshold (VdB)	Exceeds Significance Threshold?
			Large Construction Equipment[1]		Small Construction Equipment[2]		Loaded Trucks			
	Max	Avg	Max	Avg	Max	Avg	Max	Avg		
Receptor Location 1	65	1,324	79	53	50	24	78	52	78	No
Receptor Location 3	75	761	77	57	48	28	76	56	78	No
Onsite Existing Residence	133	1,272	72	53	43	24	71	52	78	No

Source: Based on methodology from the United States Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* 2006.
Max=Maximum; Avg=Average
[1] Vibration levels from the listed off-road construction equipment are equivalent to vibration levels generated by a large bulldozer.
[2] Vibration levels from the listed off-road construction equipment are equivalent to vibration levels generated by a small bulldozer.

While construction equipment could operate as close as 65 feet to the nearest offsite vibration-sensitive residential structures (onsite Secondary Access Road), most of the heavy construction equipment would operate at greater distances (average distance of 761 feet). As shown in the table, average vibration levels from construction of the project would not exceed the FTA criteria for vibration annoyance at the surrounding residential uses or at the existing onsite residence. Consequently, impacts would be less than significant.

Roadway Construction Activities

Development of the project would require construction of two access roads into the project site from the existing arterials. The primary access road would connect at the southeast entrance of the site and the secondary access road would connect to the southwest entrance of the project site. Roadway construction would include grading, foundation work, and asphalt paving that would extend beyond the project site boundary into the surrounding properties. While construction equipment at the roadway construction areas could operate as close as 55 feet to the nearest offsite vibration-sensitive receptor, most of the heavy construction equipment would operate at greater distances. As shown in Table 5.10-8, average vibration levels from construction of the project would not exceed the FTA criteria for vibration annoyance at the surrounding residential uses. Consequently, impacts would be less than significant.

Table 5.10-8
Vibration Source Levels for Roadway Construction Equipment at Nearest Offsite Receptors, Vibration Annoyance

Vibration-Sensitive Use	Distance to Roadway Construction Areas (Feet)		Velocity Level (VdB)						Significance Threshold (VdB)	Exceeds Significance Threshold?
			Large Construction Equipment[1]		Small Construction Equipment[2]		Loaded Trucks			
	Max	Avg	Max	Avg	Max	Avg	Max	Avg		
Receptor Location 1	55	3,174	80	45	51	16	79	44	78	No
Receptor Location 2	188	3,056	69	45	40	16	68	44	78	No
Receptor Location 3	180	3,274	70	45	41	16	69	44	78	No
Receptor Location 4	70	2,500	78	47	49	18	77	46	78	No
Receptor Location 11	159	1,406	71	52	42	23	70	51	78	No
Receptor Location 13	134	152	72	71	43	42	71	70	78	No

Source: Based on methodology from the United States Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* 2006.
Max=Maximum; Avg=Average
[1] Vibration levels from the listed off-road construction equipment are equivalent to vibration levels generated by a large bulldozer.
[2] Vibration levels from the listed off-road construction equipment are equivalent to vibration levels generated by a small bulldozer.

Architectural Damage Criteria

The FTA has established thresholds for vibration that would cause annoyance to a substantial number of people or damage to building structures. The FTA criterion for vibration-induced architectural damage is 0.20 inch per second for the PPV for wood-framed structures. Project-related construction vibration was evaluated for its potential to cause architectural damage in comparison to the FTA's architectural damage criteria for the closest offsite structure.

Onsite Construction Activities

As shown in Table 5.10-9, onsite construction activities associated with the project would occur at distances that would result in PPV levels below the FTA's criteria for vibration-induced architectural damage at the nearest off- and onsite vibration-sensitive structures. Consequently, impacts would be less than significant at off- and onsite receptors.

Table 5.10-9
Vibration Source Levels for Onsite Construction Equipment at Nearest Structures, Architectural Damage

Vibration-Sensitive Use	Approximate RMS Velocity (in/sec)			Significance Threshold (in/sec)	Exceeds Significance Threshold?
	Large Bulldozer	Small Bulldozer	Loaded Trucks		
Receptor Location 1	0.021	0.001	0.018	0.2	No
Existing Onsite Residence	0.007	0.0002	0.006	0.2	No

Source: Based on methodology from the United States Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* 2006.
Note: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Offsite Roadway Construction Activities

Similar to onsite construction activities, vibration levels from roadway-related construction activities would also result in PPV levels below the FTA's criteria for vibration-induced architectural damage at the nearest offsite vibration-sensitive structures, as shown in Table 5.10-10. Consequently, impacts would be less than significant at offsite receptors.

Table 5.10-10
Vibration Source Levels for Roadway Construction Equipment at Nearest Offsite Structures, Architectural Damage

Vibration-Sensitive Use	Approximate RMS Velocity (in/sec)			Significance Threshold (in/sec)	Exceeds Significance Threshold?
	Large Bulldozer	Small Bulldozer	Loaded Trucks		
Receptor Location 1	0.027	0.001	0.023	0.2	No

Source: Based on methodology from the United States Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* 2006.
Note: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

IMPACT 5.10-5: PROJECT-RELATED CONSTRUCTION ACTIVITIES WOULD RESULT IN TEMPORARY NOISE INCREASES AT THE EXISTING ONSITE AND SURROUNDING NOISE-SENSITIVE RECEPTORS DUE TO THE LENGTH OF THE CONSTRUCTION PERIOD, APPROXIMATELY THREE YEARS. [THRESHOLD N-4]

Impact Analysis: Short-term noise can be associated with site preparation, grading, and building construction of the proposed land uses. Two types of short-term noise impacts could occur during construction: First, the transport of workers and movement of materials to and from the site could incrementally increase noise levels along local access roads; and/or short-term noise impacts could occur during site preparation, grading, and/or physical construction. The following analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Construction-Related Vehicles

Construction Worker Vehicles and Material Delivery Trucks

The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Even though there would be a relatively high single-event noise exposure potential with passing trucks, the expected number of workers and trucks is small relative to the background traffic. Truck trips would be spread throughout the workday. Therefore, these impacts are less than significant at noise receptors along the construction routes.

Soil Haul Trucks

However, the number of truck trips associated with soil haul operations would be high and increase the number of trucks on the local roadways during construction of the access roads due to amount of soil that would be transported. Table 5.10-11 shows the increase in the ambient noise environment that would occur during soil haul operations. While truck trips associated with soil haul operations would last for only a three-month period, as shown in the table, soil haul trips would substantially increase the ambient noise environment along the roadway. Consequently, truck trips associated with soil haul operations would result in significant noise impacts for the noise-sensitive uses along the roadway during grading activities.

Table 5.10-11
Traffic Noise during Soil Haul Operations
(dBA L_{eq})

Location	Existing		During Construction		Increase in CNEL (dBA) from Existing
	ADT	CNEL@ 50 Feet from Centerline	ADT[1]	CNEL@ 50 Feet from Centerline	
North Little League Drive					
n/o Kendall Drive	1,000	59.4	1,483	67.3	7.9
n/o Frontage Road	1,700	62.2	2,183	68.3	6.1
n/o Belmont Avenue	1,300	55.9	1,783	65.7	9.8
n/o Meyers Road	200	48.2	683	65.0	16.8

[1] The number of daily truck trips associated with soil haul operations along North Little League Drive is anticipated at 483 daily trips and is calculated from URBEMIS2009, Version 9.2.4, based on the anticipated soil haul operation as provided by Rick Engineering.

Onsite Construction Activities

Construction is performed in distinct steps, each with its own mix of equipment and, consequently, its own noise characteristics. Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. However, despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise to be categorized by work phase. Composite construction noise is best characterized by *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances* (Bolt 1971). Noise levels represent the documented average noise levels for each construction phase for institutional construction. The analysis below addresses offsite impacts from construction equipment noise.

Maximum Construction Noise Levels

Table 5.10-12 shows the maximum noise levels from each construction phase at the closest offsite noise-sensitive uses. Maximum noise levels are based on the minimum distance between a construction area onsite where construction equipment would be operating to the property line of the nearest offsite noise-sensitive residences. These values take into account both the number of pieces and spacing of the heavy equipment used in the construction effort. In later phases, during building assembly, noise levels are typically reduced from these values and the physical structures further break up line-of-sight noise propagation. As shown in the table, onsite project-related construction noise would generate noise levels ranging from 45 dBA L_{eq} to 91 dBA L_{eq} at the surrounding noise-sensitive receptors and between 73 dBA L_{eq} to 80 dBA L_{eq} at the existing onsite residence.

Table 5.10-12
Maximum Noise Levels from Onsite Project Construction Areas, Offsite Receptors ($dBA L_{eq}$)

Noise-Sensitive Receptor[1]	Distance (Feet)	Construction-Relation Noise Levels ($dBA L_{eq}$)				
		Ground Clearing	Excavation/ Grading	Foundation Construction	Building Construction	Finishing and Site Cleanup
Existing Onsite Residence	133	75	80	73	73	80
Receptor Location 1	38	85	91	83	83	91
Receptor Location 2	176	72	77	70	70	77
Receptor Location 3	57	82	87	80	80	87
Receptor Location 4	372	66	71	64	64	71
Receptor Location 6	467	64	69	62	62	69
Receptor Location 8	295	68	73	66	66	73
Receptor Location 11	88	78	83	76	76	83
Receptor Location 12	255	69	74	67	67	74
Receptor Location 15	609	61	66	59	59	66
Receptor Location 18	3,140	47	52	45	45	52
Receptor Location 19	2,864	48	53	46	46	53
North Verdemont Elementary School	3,013	47	52	45	45	52

Source: Based on Bolt, Beranek, and Newman 1971. Based on the Analysis for Domestic Housing.
[1] "Receptor Location" represents nearby noise and vibration sensitive residences.

Average Construction Noise Levels

Table 5.10-13 shows typical noise levels from each construction phase at the nearest residential areas. Noise levels were calculated based on the average distance between the project site and sensitive receptors, which is measured from the center of the project site to the property line of the nearest offsite noise-sensitive residences. This represents the distance at which sensitive receptors would be exposed to construction noise the majority of the time. Similar to determining the maximum construction noise levels, these values take into account both the number of pieces and spacing of the heavy equipment used in the construction effort. In later phases during building assembly, noise levels are typically reduced from these values and the physical structures further break up line-of-sight noise propagation. As shown, average noise levels would be lower than maximum noise levels and would range from 38 dBA L_{eq} to 70 dBA L_{eq} at the nearby offsite noise-sensitive receptors and 53 dBA L_{eq} to 60 dBA L_{eq} at the existing onsite residence.

Table 5.10-13
Average Noise Levels from Onsite Project Construction Areas, Offsite Receptors (dBA L_{eq})

Noise-Sensitive Receptor[1]	Distance (Feet)	Construction-Relation Noise Levels (dBA L_{eq})				
		Ground Clearing	Excavation/ Grading	Foundation Construction	Building Construction	Finishing and Site Cleanup
Existing Onsite Residence	1,272	55	60	53	53	60
Receptor Location 1	1,210	56	61	54	54	61
Receptor Location 2	1,382	56	61	54	54	61
Receptor Location 3	710	64	69	62	62	70
Receptor Location 4	1,321	56	61	54	54	61
Receptor Location 6	2,507	50	55	48	48	55
Receptor Location 8	2,332	51	56	49	49	56
Receptor Location 11	2,809	49	54	47	47	54
Receptor Location 12	3,577	47	52	45	45	52
Receptor Location 15	4,538	45	50	53	53	50
Receptor Location 18	4,478	44	49	42	42	49
Receptor Location 19	6,880	41	46	39	39	46
North Verdemont Elementary School	7,105	40	45	38	38	45

Source: Based on Bolt, Beranek, and Newman 1971. Based on the Analysis for Domestic Housing.
[1] "Receptor Location" represents nearby noise and vibration sensitive residences.

Offsite Roadway Construction

Maximum Construction Noise Levels

Table 5.10-14 shows the maximum noise levels from each construction phase at the closest offsite noise-sensitive uses from roadway construction activities. Maximum noise levels are based on the minimum distance between an offsite roadway construction area where construction equipment would be operating to the property line of the nearest offsite noise-sensitive residences. These values take into account both the number of pieces and spacing of the heavy equipment used in the construction effort. As shown in the table, roadway-related construction noise would generate noise levels ranging from 50 dBA L_{eq} to 88 dBA L_{eq} at the surrounding noise-sensitive receptors.

Table 5.10-14
Maximum Noise Levels from Roadway Construction
(dBA L_{eq})

Noise-Sensitive Receptor[1]	Distance (Feet)	Construction-Relation Noise Levels(dBA L_{eq})		
		Ground Clearing	Excavation/ Grading	Foundation Construction
Receptor Location 1	1,225	56	60	60
Receptor Location 2	1,015	58	62	62
Receptor Location 3	1,075	57	61	61
Receptor Location 4	625	62	66	66
Receptor Location 5	150	74	78	78
Receptor Location 6	50	84	88	88
Receptor Location 7	575	63	67	67
Receptor Location 8	850	59	67	67
Receptor Location 9	525	64	68	68
Receptor Location 10	175	73	77	77
Receptor Location 11	1,175	57	61	61
Receptor Location 12	800	60	64	64
Receptor Location 13	85	79	83	83
Receptor Location 14	875	59	63	63
Receptor Location 15	600	62	66	66
Receptor Location 16	300	68	72	72
Receptor Location 17	1,675	53	57	57
Receptor Location 18	2,575	50	54	54
Receptor Location 19	2,025	52	56	56
Receptor Location 20	700	61	65	65
North Verdemont Elementary School	1,800	53	57	57

Source: Based on Bolt, Beranek, and Newman 1971. Based on the Analysis for Public Works, Roads & Highways, Sewers, and Trenches..
[1] "Receptor Location" represents nearby noise and vibration sensitive residences.

Average Construction Noise Levels

Table 5.10-15 shows typical noise levels from each construction phase at the nearest residential areas. Noise levels were calculated based on the average distance (the halfway point) between each roadway and the nearby sensitive receptors. This represents the distance at which sensitive receptors would be exposed to construction noise from the roadway the majority of the time. Similar to determining the maximum construction noise levels, these values take into account both the number of pieces and spacing of the heavy equipment used in the construction effort. In later phases during building assembly, noise levels are typically reduced from these values and the physical structures further break up line-of-sight noise propagation. As shown, average noise levels would be lower than maximum noise levels and would range from 45 dBA L_{eq} to 65 dBA L_{eq} at the nearby noise-sensitive receptors.

Table 5.10-15
Average Noise Levels from Roadway Construction
(dBA L_{eq})

Noise-Sensitive Receptor	Distance (Feet)	Construction-Relation Noise Levels (dBA L_{eq})		
		Ground Clearing	Excavation/ Grading	Foundation Construction
Receptor Location 1	4,350	45	49	49
Receptor Location 2	4,225	45	49	49
Receptor Location 3	4,325	45	49	49
Receptor Location 4	3,725	47	51	51
Receptor Location 5	3,350	50	54	54
Receptor Location 6	2,560	50	54	54
Receptor Location 7	2,600	50	54	54
Receptor Location 8	2,650	50	54	54
Receptor Location 9	1,975	52	56	56
Receptor Location 10	2,000	52	56	56
Receptor Location 11	2,450	50	54	54
Receptor Location 12	1,725	53	57	57
Receptor Location 13	1,015	58	62	62
Receptor Location 14	1,225	56	60	60
Receptor Location 15[2]	1,275	56	60	60
Receptor Location 16	785	60	64	64
Receptor Location 17	2,100	52	56	56
Receptor Location 18	3,150	48	52	52
Receptor Location 19[2]	1,975	52	56	56
Receptor Location 20[2]	725	61	65	65
North Verdemont Elementary School[2]	2,115	51	55	55

Source: Based on Bolt, Beranek, and Newman 1971. Based on the Analysis for Public Works, Roads & Highways, Sewers, and Trenches.
[1] "Receptor Location" represents nearby noise and vibration sensitive residences.
[2] Distance measured from Primary Road.

Summary

As shown in these tables, construction activities would elevate ambient noise levels during the daytime at the residences surrounding the proposed project site and the proposed access roadways. The City allows for noise from construction activities, but limits it to the least noise-sensitive portions of the day. The project would comply with the City's Municipal Code, as specified in Section 8.54.070. Construction activities would not occur in the evening or late night hours when people are more sensitive to noise. While maximum construction-generated noise would substantially increase the ambient noise environment, average construction-generated noise levels (i.e., noise levels that would be experienced by noise-sensitive receptors the majority of the time) would be much lower. Construction of the offsite portions of the access roads would last approximately three to six months; however, overall project-related construction activities would take approximately three years to complete. Because of the extended duration of construction activities and

intensity of noise produced from heavy construction equipment running continuously, project-related construction activities would result in significant noise impacts at the surrounding existing residential uses.

5.10.4 Cumulative Impacts

Mobile-Source Noise

The ambient noise environment in the surrounding vicinity of the project site under year 2013 with project conditions was shown in Figure 5.10-5. The difference in traffic noise between the existing noise environment and buildout year 2013 with project conditions represents cumulative noise impacts and was shown in Figure 5.10-7. The difference between the buildout year 2013 no-project and with project conditions represents the project's contribution to cumulative noise increases and was shown in Figure 5.10-6. Project-related cumulative noise impacts may occur if, under with-project conditions, there is a substantial increase in overall cumulative noise (3 dBA or more), the project contributes 0.1 dBA or more to the overall cumulative noise increase, and the ambient noise environment is above 65 dbA CNEL. As shown in these figures, buildout year 2013 conditions would not result in any cumulative noise impacts along the roadway segments within the study area. Roadway segments where the ambient noise environment would be 65 dBA CNEL or higher, such as along Palm Avenue and I-215 corridor, would not result in cumulative noise increases of 3 dB or more under buildout year 2013 with project conditions. For roadway segments—such as the secondary access road from I-215 to the project site and the primary access road from the project site to Meyers Road—where cumulative noise would exceed 3 dB under buildout year 2013 conditions, ambient noise levels would not exceed 65 dBA CNEL. A small portion of the segment of Little League Drive south of Frontage Road would result in a 3 dB increase in cumulative noise under year 2013 with project conditions. Additionally, it would be within the 65 dBA CNEL noise contour and the project would contribute at least 0.1 dB to the overall cumulative noise increase. However, there are no noise-sensitive uses in this area. Consequently, the project's contribution to cumulative noise would be less than significant and project impacts would not be cumulatively considerable for buildout Year 2013 conditions. This analysis of cumulative noise impacts for buildout year 2013 is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Horizon Year 2030

Potential noise impacts from project-related traffic were evaluated to assess cumulative increases in the ambient noise environment in the vicinity of noise-sensitive receptors for horizon year 2030. To quantify traffic noise impacts at horizon year 2030, noise levels associated with two traffic scenarios were compared:

1. Horizon Year 2030 traffic without the project (2030 baseline), shown in Figure 5.10-8

2. Horizon Year 2030 traffic with the project, shown in Figure 5.10-9

Figure 5.10-10 shows the change in traffic noise levels from future baseline conditions to future with project conditions. The differences in traffic noise between the baseline horizon year 2030 no-project and with-project conditions represents the increase in noise attributable to project-related traffic. By horizon year 2030, considerable growth in the San Bernardino area is anticipated. Therefore, future traffic growth within the City of San Bernardino in horizon year 2030, in addition to project-related traffic growth, would also result in increases in the ambient noise levels within the City. Figure 5.10-11 shows the change in the ambient noise environment from existing conditions to future horizon year 2030 with-project conditions. The ambient noise along a portion of the primary access road—from Belmont Avenue to just north of Meyers Road—would exceed 65 dBA CNEL, cumulative noise would exceed 3 dB, and the project would contribute at least 0.1 dB. However, there are no existing noise-sensitive receptors within the vicinity of this particular portion of the roadway segment. Other roadway segments, such as Palm Avenue north of I-215, would be within

ambient noise levels of 65 dBA CNEL or higher; however, cumulative noise would not exceed 3 dB. Consequently, the project's contribution to cumulative noise would be less than significant and project impacts would not be cumulatively considerable for horizon year 2030 with-project conditions. This analysis of cumulative noise impacts for horizon year 2030 is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Stationary-Source Noise

Unlike transportation noise sources, whose effects can extend well beyond the limits of the project site, stationary noise generated by the project only impacts sensitive receptors adjacent to the project site. As no significant stationary noise impacts from project implementation were identified and the City of San Bernardino restricts stationary noise generated on a property from creating a nuisance to other noise-sensitive receptors, cumulative stationary-source noise generation would also be less than significant. This analysis of cumulative stationary-source noise impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Construction Noise and Vibration

Like stationary-source noise, cumulative construction noise and vibration impacts are confined to a localized area of impact. Consequently, cumulative impacts would only occur if other projects are being constructed in the vicinity of the project at the same time as the project. Since there are no other planned projects in the vicinity of the project area, there are no cumulative construction-related noise and vibration impacts. This analysis of cumulative construction-related noise and vibration impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.10.5 Existing Regulations and Standard Conditions

- Title 24, California Code of Regulations, Building Standards Administrative Code, Part 2, California Building Code: Requires habitable rooms and classrooms to achieve noise levels of 45 dBA CNEL.

- City of San Bernardino Municipal Code, Title 8, Chapter 8.54, Noise Control.

- City of San Bernardino Municipal Code, Title 9, Article III, Chapter 19.20, Section 19.20.030.15, Noise.

5.10.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.10-1, 5.10-2, 5.10-3, and 5.10-4.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.10-5 Project-related construction activities would result in temporary noise increases at the existing onsite and surrounding noise-sensitive receptors due to the length of the construction period of approximately three years.

5.10.7 Mitigation Measures

Impact 5.10-5

10-1 The construction contractor shall properly maintain and tune all construction equipment to minimize noise emissions.

10-2 The construction contractor shall fit all equipment with properly operating mufflers, air intake silencers, and engine shrouds no less effective than as originally equipped by the manufacturer.

10-3 The construction contractor shall locate all stationary noise sources (e.g., generators, compressors, staging areas) as far from offsite residential receptor locations as is feasible.

10-4 Construction activities, including haul trucks and deliveries, shall be limited to between 7:00 AM to 7:00 PM Monday through Saturdays, except on federal holidays.

10-5 The project applicant shall post a sign, clearly visible onsite, with a contact name and telephone number of the project applicant's authorized representative to respond in the event of a noise complaint.

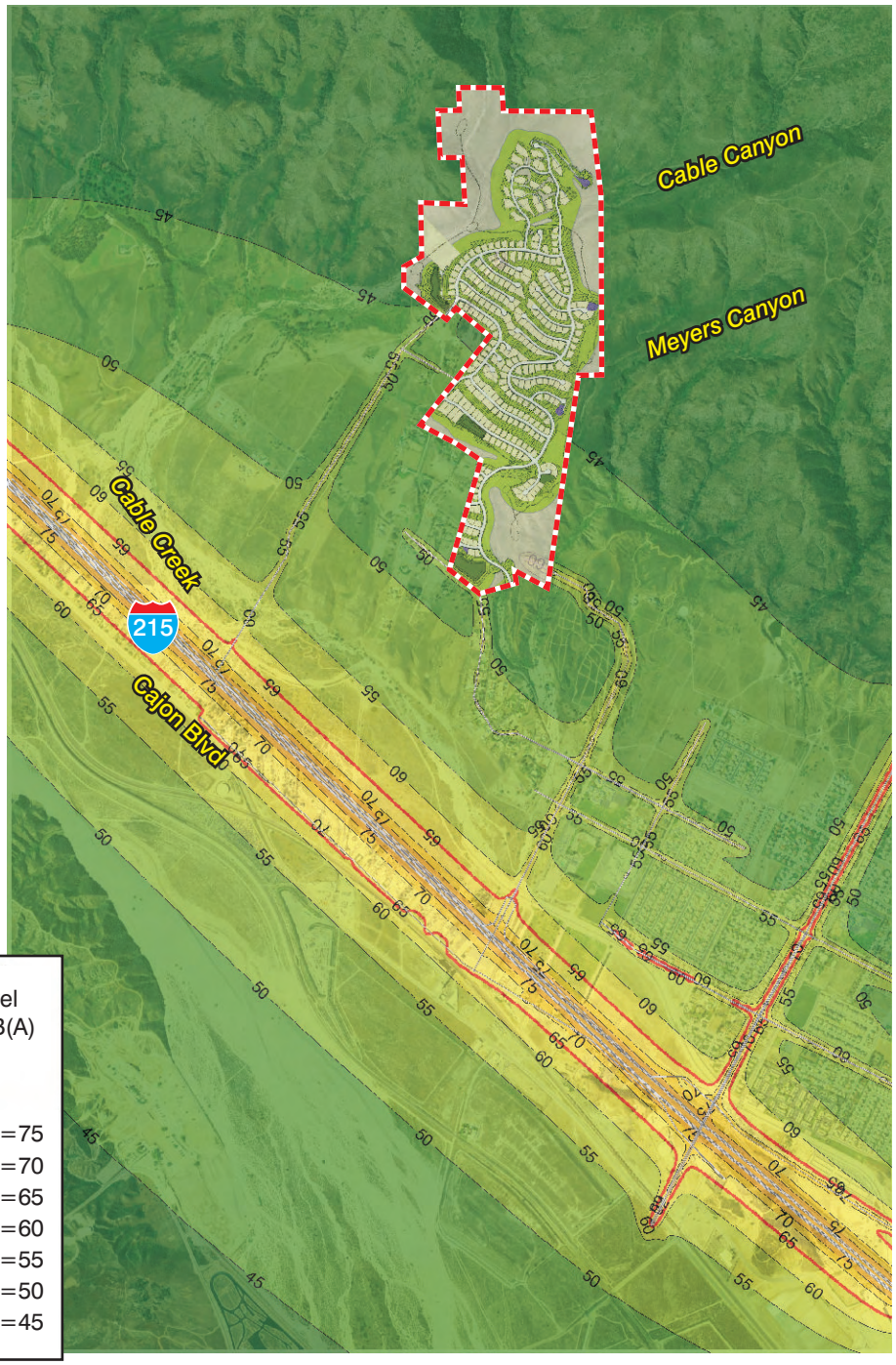
10-6 The construction contractor shall install temporary sound blankets at least six feet in height along the boundaries of the onsite residence.

5.10.8 Level of Significance After Mitigation

Impact 5.10-5

Mitigation Measures 10-1 through 10-6 would reduce noise generated by construction activities to the extent feasible. However, due to the number of soil haul trips that would be required, amount of heavy construction equipment needed, and duration of construction activities, Impact 5.10-5 would remain significant and unavoidable.

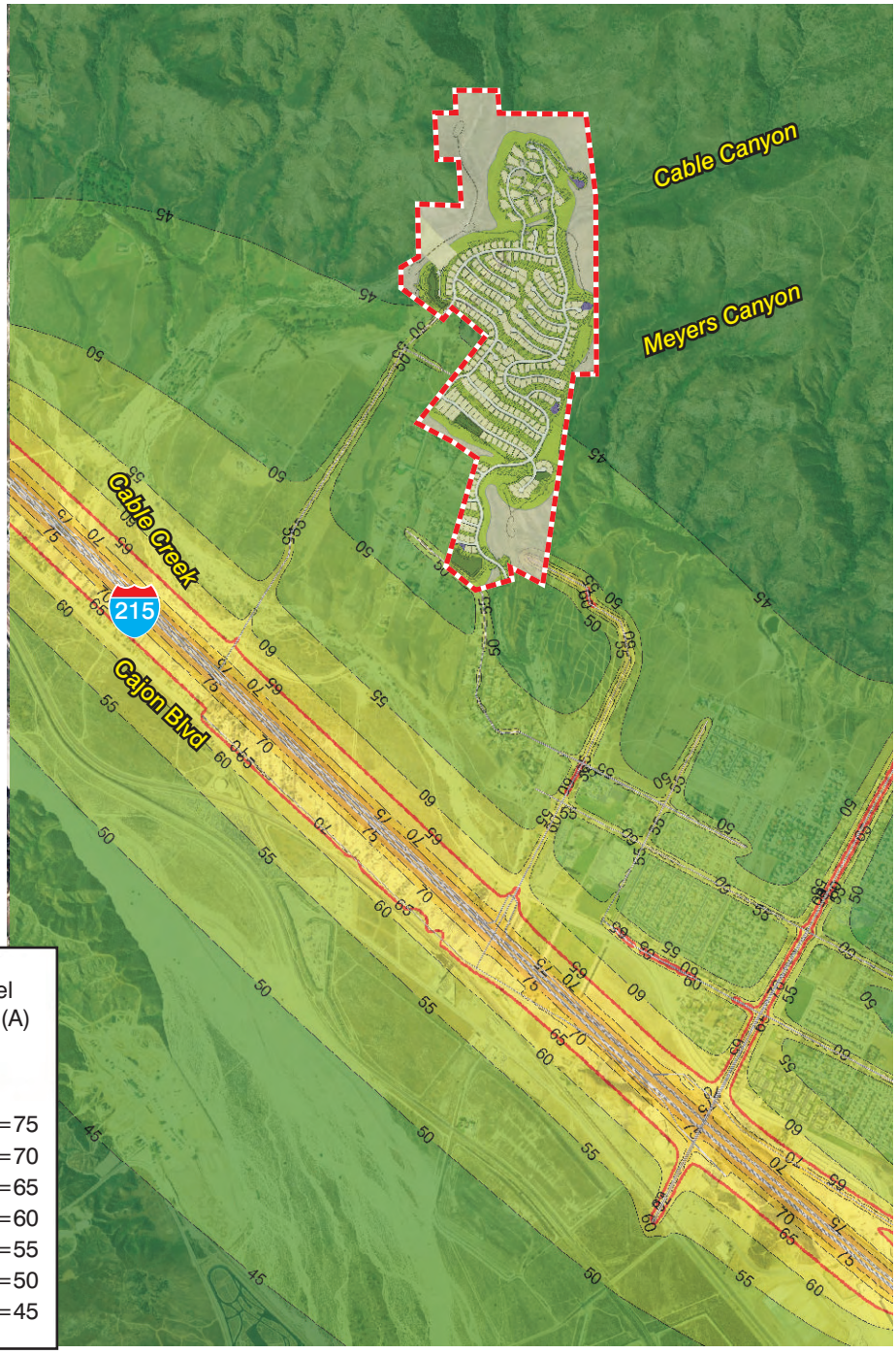
Horizon Year 2030 No-Project Traffic Noise Contours



Source: Google Earth Pro 2009, SoundPlan

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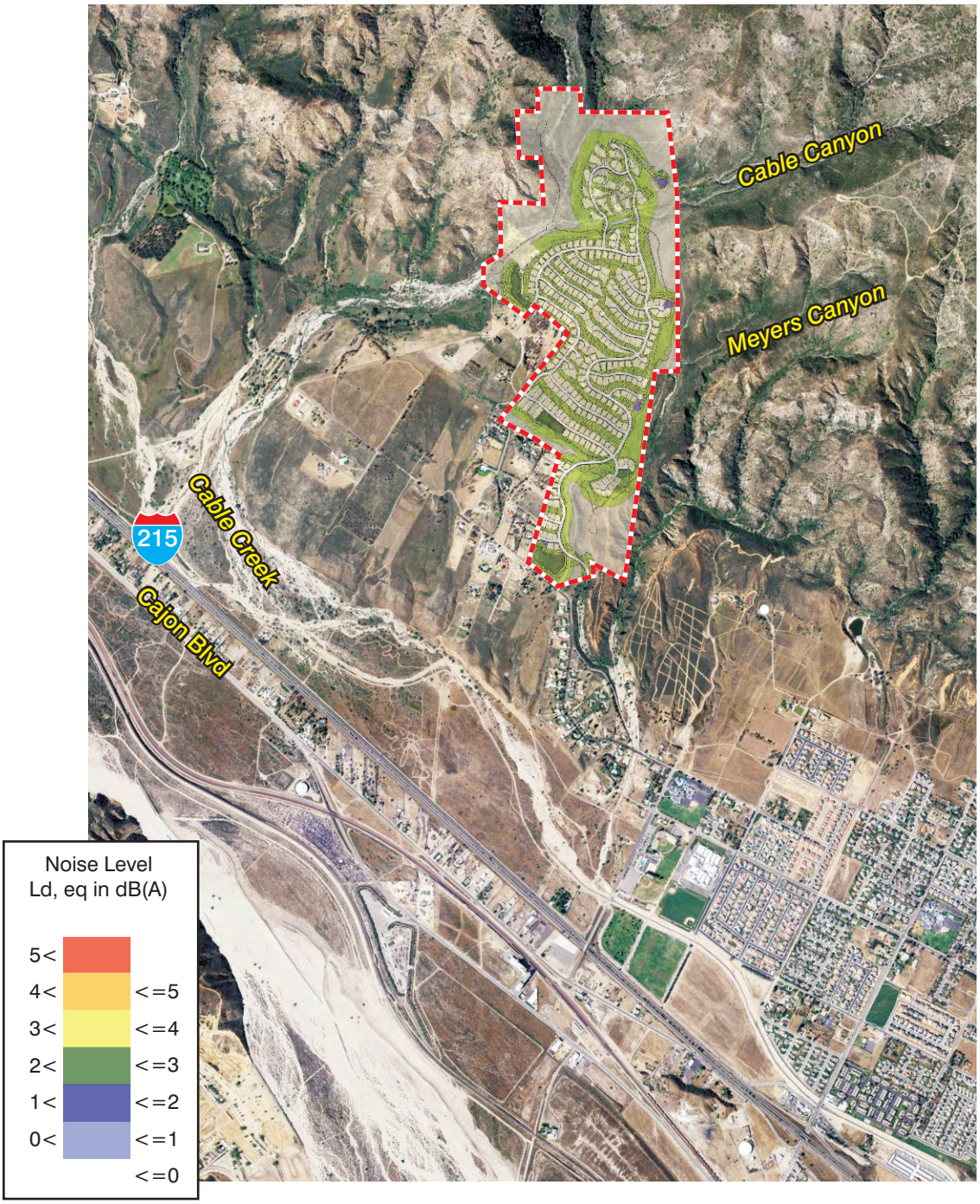
Horizon Year 2030 With-Project Traffic Noise Contours



Source: Google Earth Pro 2009, SoundPlan

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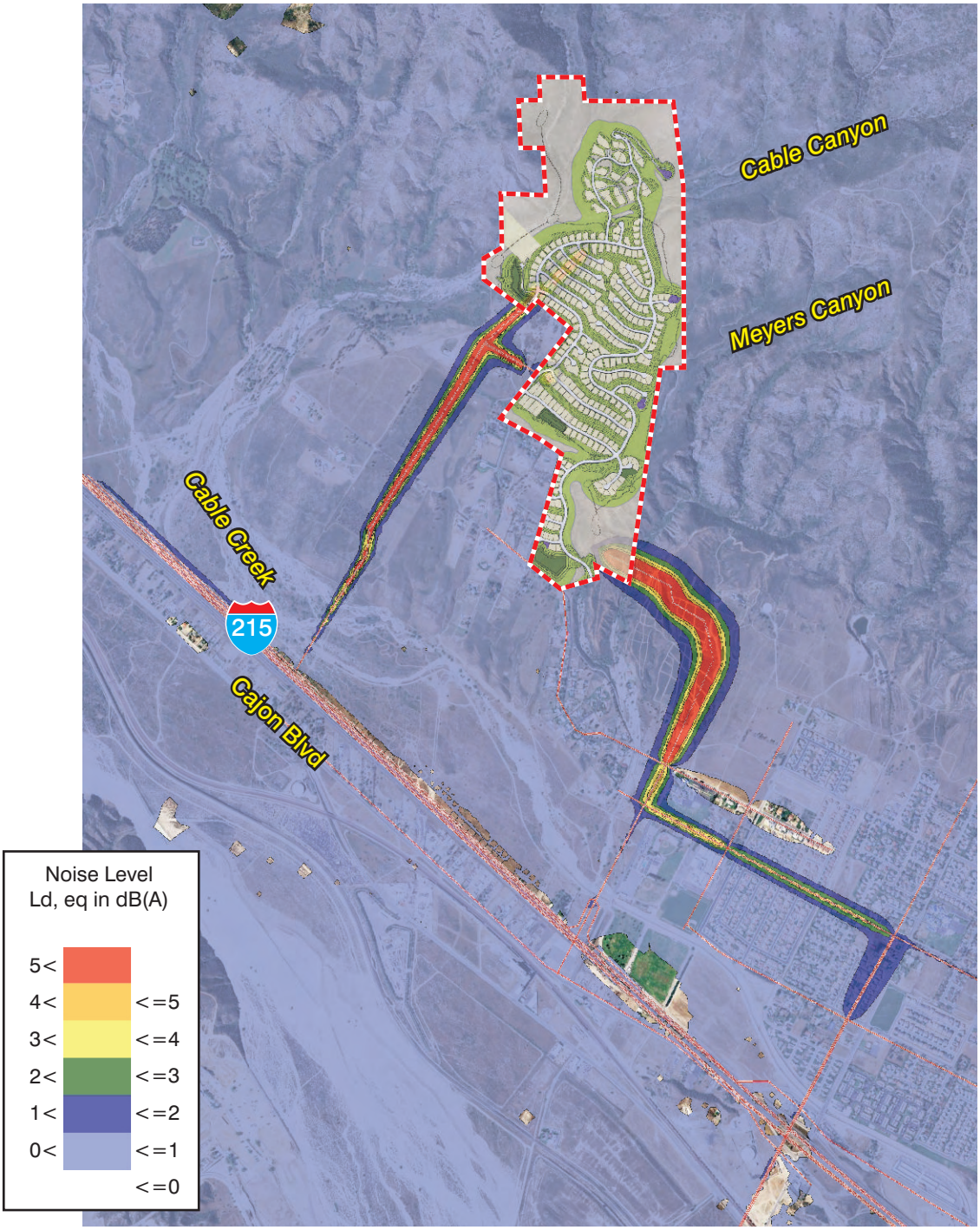
Change in Traffic Noise Levels between Horizon Year 2030 No Project and With Project



Source: Google Earth Pro 2009, SoundPlan

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Change in Traffic Noise Levels between Horizon Year 2030 With-Project and Existing Conditions



Source: Google Earth Pro 2009, SoundPlan

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5.11 POPULATION AND HOUSING

This section describes the existing setting regarding population and housing and potential for socioeconomic impacts of the Spring Trails Specific Plan (proposed project) and the associated annexation of an adjacent 26.4-acre area on the City of San Bernardino, including changes in population, employment, and demand for housing. In addition, it evaluates the project against the various growth management goals and policies of the Southern California Association of Governments (SCAG). Descriptions and analysis in this section are based on population and housing information provided by the California Department of Finance (DOF), the United States Census, and the City of San Bernardino.

5.11.1 Environmental Setting

The City and SCAG have published population, employment, and housing growth projections for San Bernardino. San Bernardino's projections are contained in its General Plan, which was approved by the City in 2005. The buildout assumptions in this Plan are not based on the maximum density and intensity levels for each land use category, but on typical development levels. This accounts for variations in project design, site conditions, open spaces, and access and parking requirements. These factors result in built densities and intensities that vary widely. The use of an average in determining buildout levels is intended to account for these variations in individual projects. SCAG's most recent projections are in the 2008 Regional Transportation Plan (RTP), which provides regional population, employment, and housing forecasts for all of Southern California. SCAG projects city-level demographic trend projections using the housing unit method, which is one of the most widely used methods for estimating and projecting local area households and population for planning purposes. The variation between the two documents is due to the different methodologies used, because different growth rates were used to calculate growth projections. Also, SCAG's buildout projection year is 2035, whereas the General Plan does not have a stated buildout year and the true buildout year may be 2050 or even later.

Population

County of San Bernardino

During the past decade, San Bernardino County's population growth rate has exceeded that of California and the United States (San Bernardino 2005a). The United States Commerce Department predicts that San Bernardino County and the Inland Empire, of which it is a part, will be the fastest growing region of the United States. According to the DOF, the County of San Bernardino had a population of 1,709,401 in 2000, which rose to approximately 1,971,318 in 2005, according to SCAG estimates. The population of the County of San Bernardino is projected to increase by approximately 1,424,400 persons between 2000 and 2035, or 83.3 percent of its 2000 population.

City of San Bernardino

According to the DOF, the City had a population of 185,401 in 2000, which accounted for about 11 percent of the County's population. According to the DOF estimates, the population of the City of San Bernardino increased to approximately 201,049 in 2005. The population of the City is projected to increase by approximately 80,114 persons between 2000 and 2035, a projected growth of 43.2 percent from its 2000 population. The City's projected growth from 2000 to 2035 is approximately half of the County's projected growth, as shown in Table 5.11-1.

Based on the maximum dwelling unit allowance and current General Plan population factors included in the City's 2005 General Plan, the City's housing units will generate increased growth of an estimated 319,241 residents at buildout. By comparison, SCAG anticipates a 2035 population of 265,515.

Table 5.11-1
San Bernardino County and City of San Bernardino Population
2000–2035

	2000[1]	*2005*	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*	*Projected Growth (2000–2035)*
County of San Bernardino	1,709,401	1,971,318	2,182,049	2,385,748	2,582,765	2,773,945	2,957,753	3,133,801	83.3 %
City of San Bernardino	185,401	201,049	213,318	224,924	235,616	245,989	255,959	265,515	43.2%

Source: SCAG's 2008 Regional Transportation Plan Growth Forecast.
[1] California Department of Finance, 2007.

Housing

County of San Bernardino

According to the DOF, the County of San Bernardino had 526,984 dwelling units in 2000, which rose to approximately 567,277 in 2005, according to SCAG estimates. The county's housing is projected to increase by approximately 445,577 dwelling units from 2000 to 2035, a projected growth of 84.6 percent. The housing growth in San Bernardino County has matched the pace set by population growth, as shown in Table 5.11-2.

Table 5.11-2
San Bernardino County and City of San Bernardino Households
2000–2035

	2000[1]	*2005*	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*	*Projected Growth (2000–2035)*
County of San Bernardino	526,984	567,277	637,250	718,602	787,142	852,986	914,577	972,561	84.6 %
City of San Bernardino	56,330	57,698	60,876	65,144	68,783	72,275	75,544	78,619	39.6%

Source: SCAG's 2008 Regional Transportation Plan Growth Forecast.
[1] California Department of Finance, 2007.

City of San Bernardino

According to the California DOF, the number of households within the City totaled 56,330 in 2000. As shown in Table 5.11-2, SCAG projects the City's number of households will increase to 78,619 by 2035, an increase of 39.6 percent from 2000. Similar to population, the City's projected growth of housing units from 2000 to 2035 is approximately half of the County's.

According to the City of San Bernardino's General Plan, the housing stock consisted of 63,535 housing units in 2000. By comparison, SCAG reported 56,330 housing units in 2000. Of these, approximately 7,205 housing units were vacant in 2000, for an 11.4 percent vacancy rate. Of the 56,330 occupied housing units, 29,536 (52.4 percent) were owner occupied and 26,794 (47.6 percent) were renter occupied.

The vacancy rate is a measure of the availability of housing in a community. It also demonstrates how well the types of units available actually meet the market demand. A low vacancy rate suggests that households may have difficulty finding housing for purchase within their price range; a high supply of vacant units may indicate either the existence of a high number of desired units or an oversupply of units. The vacancy rate fell from 11.4 percent in 2000 to 5.2 percent in 2005.

Assuming buildout of the City's 2005 General Plan, the land use plan accommodates a total of 95,664 dwelling units, including units in the incorporated City and in the City's sphere of influence. By comparison, SCAG anticipates a total of 78,619 dwelling units in 2035.

Employment

County of San Bernardino

San Bernardino County is known as a center of job growth due to the out-migration of firms and people to the Inland Empire from the Southland's coastal counties. This migration is occurring because the density of land development in Orange, Los Angeles, and San Diego counties has created a shortage of manufacturing, distribution, and housing space in those areas.

SCAG projects that the number of jobs will increase from approximately 594,923 in 2000 to a little over 1.2 million in the year 2035. This represents an increase of 659,826 jobs. In 2000, 80 percent of the County's 617,054 jobs were located in the West and East Valley Regional Subplanning area (RSA). This employment distribution is not expected to change significantly over the next 10 years, as about 80 percent of all new jobs in the County are expected to be located in these areas. Consistent with the County employment trends, the majority (74 percent) of the unincorporated County employment growth over the next 10 years is expected to occur in the Valley Region. In particular, the SCAG Regional Growth Forecast projects that the West Valley RSA will continue to add a tremendous number of new jobs. Additionally, the number of jobs in the unincorporated Mountains Region is expected to almost double in the next 10 years, with an increase of over 9,000 jobs. The Desert Region RSAs will experience only a relatively small increase in new jobs over the next 10 years. Overall, the unincorporated portions of the County are projected to experience a greater increase (66 percent) in the number of jobs than the County as a whole (40 percent).

City of San Bernardino

The projected growth of employment from 2000 to 2035 in the City of San Bernardino mirrors that of the County. According to SCAG, the total employment within the City will grow from 81,115 jobs in 2000 to 157,088 jobs in 2035, for a total increase of 75,973 jobs, representing a 93.7 percent growth since 2000 (see Table 5.11-3). This represents an annual growth rate of approximately 2,171 jobs or 2.7 percent. According to

the Employment Development Department, the City of San Bernardino had a 18.1 percent unemployment rate as of June 2009.

Table 5.11-3
San Bernardino County and City of San Bernardino Employment
2000–2035

	2000[1]	*2005*	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*	*Projected Growth (2000–2035)*
County of San Bernardino	594,923	704,239	810,233	897,489	965,778	1,045,480	1,134,960	1,254,749	110.9 %
City of San Bernardino	81,115	94,917	107,023	117,429	124,971	133,641	143,641	157,088	93.7%

Source: SCAG's 2008 RTP Growth Forecast.
[1] SCAG's 2004 RTP Growth Forecast.

Southern California Association of Governments Projections

Jobs/Household Balance

The project will alter the relationship between jobs and households at the city, subregional, and county levels. Jobs/household balance is one indicator of a project's effect on growth and quality of life in the project area. SCAG uses the jobs/household ratio to assess the relationship between housing and employment growth. The jobs/household ratio is a general measure of the balance between the number of jobs and number of households within a geographic area, without regard to economic constraints or individual preferences. Jobs/household goals and ratios are advisory only. No ideal jobs/household ratio is adopted in state, regional, or city policies. However, SCAG refers to communities with more than the average of 1.5 jobs per household as "jobs-rich."

As can be seen on Table 5.11-4, the City of San Bernardino is projected to be jobs-rich, with a jobs/household ratio of 2.00 in 2035. The high level of jobs to households indicates that San Bernardino is projected to be a center for employment.

Table 5.11-4
SCAG Growth Forecast for the City of San Bernardino
2000–2035

	2000	*2005*	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*	*Projected Growth (2000–2035)*
Population	185,401	201,049	213,318	224,924	235,616	245,989	255,959	265,515	43.2%
Employment	81,115	94,917	107,023	117,429	124,971	133,641	143,641	157,088	93.7%
Household	56,330	57,698	60,876	65,144	68,783	72,275	75,544	78,619	39.6%
Jobs-to-Household Ratio	1.45	1.65	1.76	1.80	1.82	1.85	1.90	2.00	37.9%

Source: SCAG's 2004 RTP Growth Forecast and SCAG's 2008 RTP Growth Forecast.

Regulatory Setting

State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

State

California Housing Element Law

California planning and zoning law requires each city and county to adopt a general plan for future growth (California Government Code Section 65300). This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the Housing and Community Development Department estimates the relative share of California's projected population growth that would occur in each county in the state based on DOF population projections and historical growth trends. Where there is a regional council of governments, the Housing and Community Development Department provides the regional housing need to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares provides cities and counties the opportunity to comment on the proposed allocations. The Housing and Community Development Department oversees the process to ensure that the council of governments fairly distributes its share of the state's projected housing need.

Each city and county must update its general plan housing element on a regular basis (generally, every five years). Among other things, the housing element must incorporate policies and identify potential sites that would accommodate the city's share of the regional housing need. Before adopting an update to its housing element, the city or county must submit the draft to the Housing and Community Development Department for review. The department will advise the local jurisdiction whether its housing element complies with the provisions of California Housing Element Law.

The councils of governments are required to assign regional housing shares to the cities and counties within their region on a similar five-year schedule. At the beginning of each cycle, the Housing and Community Development Department provides population projections to the councils of governments, who then allocate shares to their cities and counties. The shares of the regional need are allocated before the end of the cycle so that the cities and counties can amend their housing elements by the deadline.

Regional

San Bernardino Association of Governments and Southern California Association of Governments

The City of San Bernardino is a part of the San Bernardino Association of Governments (SANBAG), which represents the interests of San Bernardino County on regional and subregional transportation matters. SANBAG actively participates in the regional planning activities of SCAG, as it is a regional representative group of the larger SCAG. Members of the SANBAG Board of Directors serve on various SCAG committees and on the Regional Council, the governing board of SCAG.

SCAG is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. It is a regional planning agency and serves as a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. Two of the principal activities of SCAG are the development of the Regional Transportation Plan (every three years), and the Regional Transportation Improvement Program (every two years). SANBAG is actively engaged in development of the RTP through various policy and technical advisory committees maintained by SCAG, and

through the coordination and preparation of local and subregional input to the RTP. On May 8, 2008, SCAG's Regional Council adopted the 2008 RTP.

SCAG adopted a package of advisory growth policies in its 1995 Regional Comprehensive Plan and Guide (RCPG). The policies aim to better coordinate infrastructure development with projected population, housing, and employment growth. In its efforts to develop a regional transportation network that maximizes access and mobility, minimizes congestion, and protects the quality of life, SCAG focuses particular attention on the relationship between jobs and housing. Policies encourage local jurisdictions to balance job and housing opportunities. SCAG policies also encourage job growth to be concentrated near transit services and transit nodes, and near existing freeways and toll roads to reduce vehicle miles traveled and congestion, and the air pollution that accompany them. The project's consistency with specific RCPG policies is discussed in Section 5.9, *Land Use and Planning*. The discussion contained in this section focuses on the project's consistency with SCAG's policies in general that encourage local jurisdictions to balance job and housing opportunities.

Jobs/Housing Balance. The balance of jobs and housing in an area—in terms of the total number of jobs and housing units as well as the type of jobs versus the price of housing—has implications for mobility, air quality, and the distribution of tax revenues. A major focus of SCAG's regional planning efforts has been to improve this balance. SCAG defines the jobs/housing balance as follows:

> Jobs and housing are in balance when an area has enough employment opportunities for most of the people who live there and enough housing opportunities for most of the people who work there. The region as a whole is, by definition, balanced…. Job-rich subregions have ratios greater than the regional average; housing-rich subregions have ratios lower than the regional average.
>
> Ideally, job/housing balance would… assure not only a numerical match of jobs and housing but also an economic match in type of jobs and housing. (SCAG 1989, 1997)

Regional Planning Policy. The SCAG RCPG presents the region's forecasts and policies for dealing with anticipated growth, including population, housing, and employment expected throughout southern California. Growth projections contained in the RCPG are based on a compilation of county and local projections. RCPG forecasts are then used in the formulation of regional plans dealing with regional air quality, housing, transportation/circulation, and other infrastructure issues. Furthermore, the RCPG contains policies that support the use of these forecasts in the preparation and review of local and regional plans and projects.

- Policy 3.01 – The population, housing, and jobs forecasts, which are adopted by SCAG's Regional council and that reflect local plans and policies, shall be used by SCAG in all phases of implementation and review.

The RCPG also identifies a number of strategies for economic prosperity and equity, including:

- [Public sector responsibilities to include] Supporting and reinforcing the formation of local industry clusters and specialized economic foundations. (p. 2-40)

SCAG has adopted a number of growth policies that are relevant to this project:

- SCAG shall support provisions and incentives created by local jurisdictions to attract housing growth in job rich subregions and job growth in housing rich subregions. (p. 3-24)

- Policy 3.16 – Encourage developments in and around activity centers, transportation corridors, underutilized infrastructure systems, and areas needing recycling and redevelopment.

The SCAG RCPG identifies regional housing goals to help provide a planning framework for cities, counties, and subregions to fashion housing strategies that are responsive to regional market needs related to growth over the next three decades. The RCPG approach is intended to be flexible, broad in scope, and a tool in relating housing concerns to a host of other issues identified in the RCPG. The SCAG RCPG includes four housing goals (p. 6-9):

- Decent and affordable housing choices for all people.
- Adequate supply and availability of housing.
- Housing stock maintenance and preservation.
- Promote a mix of housing opportunities regionwide.

The SCAG RCGP also identifies relationships between urban forms and goals of social equity and lifestyle choice.

- Support development of urban forms that avoid economic and social polarization. (p. 3-2)
- Support development of urban forms that accommodate a variety of lifestyles. (p. 3-2)

Local

City of San Bernardino General Plan

California State Planning and Zoning Law requires that every city and county prepare and adopt a long-term comprehensive general plan for the development of the respective jurisdiction. The general plan is a policy document designed to guide the physical development of the jurisdiction in a manner consistent with its physical, social, economic, and environmental goals. The general plan provides a framework of policies and programs with which local decision makers may direct the growth of the community. Housing is the only general plan element that is subject to approval or disapproval by the state and the only element that must be updated on a specific timeline—usually every five years.

The (2001) housing element is a comprehensive statement by the City of San Bernardino of its current and future housing needs and proposed actions to facilitate the provision of housing to meet those needs at all income levels. The purpose of the housing element is to identify current and projected housing needs in San Bernardino and set forth goals, policies, and programs that address those needs. The housing element has been prepared to meet the requirements of state law and local housing objectives. In addition, the revised housing element incorporates new information and reflects community concerns related to housing in the City of San Bernardino.

The housing element is currently in the process of being updated; however, the date of adoption is unknown at this time.

5.11.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

P-1 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).

P-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

P-3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The Initial Study, included as Appendix A1, substantiates that impacts associated with the following thresholds would be less than significant: Threshold P-2 and Threshold P-3.

These impacts will not be addressed in the following analysis.

5.11.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts for the proposed project. The applicable thresholds are identified in brackets after the impact statement.

The adjacent 26.4-acre area consists of six parcels owned by various property owners (outlined in Chapter 3, *Project Description*, in Figure 3-2, *Local Vicinity*). The area currently has four occupied, multiple-acre lots. It is being included in the annexation element of the proposed project to prevent the creation of a county island within the City of San Bernardino. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. The 26.4-acre annexation area includes 13 current residents located within the City of San Bernardino's sphere of influence. These residents would become part of the population of the City upon annexation.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 units proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their population and housing related impacts.

IMPACT 5.11-1: BASED ON AN AVERAGE HOUSEHOLD SIZE OF 3.34, 307 UNITS LOCATED ON THE PROJECT SITE WOULD INTRODUCE APPROXIMATELY 1,025 NEW RESIDENTS TO THE CITY OF SAN BERNARDINO. [THRESHOLD P-1]

Impact Analysis: The proposed project would result in a slight population growth in the project area by directly introducing 307 new single-family residential units into the City of San Bernardino. Using an average household size of 3.34 persons,[1] the proposed project would add up to 1,025 new residents to the City of San Bernardino. The alternative (overhead electric lines) development plan would introduce 304 new single-family residential units into the City of San Bernardino. Based on an average household size of 3.34 persons, the alternative plan would add up to 1,015 new residents to the City. The impacts related to population and

[1] Population generation factor is based on the Department of Finance's 2009 City/County Population and Housing Estimates.

housing would be similar for both scenarios; therefore, the preferred development plan is used for the analysis below.

Population Growth

As shown in Table 5.11-1, the population for the City of San Bernardino in 2005 was 201,049 and is projected to increase to 265,515 in 2035. The City's General Plan currently designates the project site as Residential Estate (RE), which allows for one dwelling unit per acre. However, the project would require a General Plan Amendment to change the existing land use designation to Residential Low (RL), allowing 3.1 dwelling units per acre, an increase of 2.1 dwelling units per acre. The City's projected buildout population under the existing land use designations is approximately 319,241 (General Plan 2005), which includes 276,264 persons in the City and 42,976 persons in the City's sphere of influence. The project would increase the overall buildout population from 319,241 to 320,266, but more specifically, the projected population of 42,976 persons in the City's sphere of influence would increase to 44,001. The projected population increase that would be generated by the proposed project would represent approximately 0.32 percent of the buildout population forecast for the City of San Bernardino. Although the proposed land use designation would allow for 2.1 more dwelling units per acre than the existing general plan, the project would only result in a nominal increase in the overall projected buildout population.

Employment

The City of San Bernardino is a jobs-rich community. According to SCAG, the total employment within the City will grow from 81,115 jobs in 2000 to 157,088 jobs in 2035, for a total increase of 75,973 jobs, representing 93.7 percent growth. This reflects an annual growth rate of approximately 2,171 jobs or 2.7 percent. Implementation of the project would create short-term jobs during the construction phase; however, the project itself would not provide any jobs.

Jobs/Housing Balance

SCAG applies the jobs/housing ratio at the regional and subregional level as a tool for analyzing the fit between jobs, housing, and infrastructure. Although no ideal jobs/housing ratio is adopted in state, regional, or city policies, SCAG considers an area balanced when the jobs/housing ratio is 1.35; communities with more than 1.5 jobs per dwelling unit are considered jobs-rich. The proposed project would consist of 309 residential units and would not provide any jobs. Table 5.11-5 shows the projected growth from 2005 to 2035 for the City and the County with and without the proposed project. By 2035, the City is projected to grow by 36.6 percent in housing, 32.1 percent in population, and 65.5 percent in employment. SCAG's forecast predicts a strong growth in employment, as the City's jobs/housing ratio was 1.65 in 2005 and is expected to increase to 2.00 by 2035. The projected 2035 jobs/housing ratio at buildout with the project would be 1.99, 0.01 less than the jobs/housing ratio at buildout without the project. The proposed project would create a jobs/housing ratio that is slightly more balanced compared to the projected buildout in the area, improving the jobs/housing ratio within the City.

Table 5.11-5
Projected Growth and Jobs/Housing Ratio According to SCAG

	2005	Projected Buildout (2035)	Projected Growth (2005-2035)	Proposed Increase	Adjusted Buildout with Project (2035)	Adjusted Growth (2005-2035)	Difference
City of San Bernardino							
Population	201,049	265,515	32.1%	1,025	266,540	32.6%	0.5%
Employment	94,917	157,088	65.5%	0	157,088	65.5%	0%
Households	57,698	78,619	36.3%	307	78,926	36.8%	0.5%
Jobs/Housing Ratio	**1.65**	**2.00**	**--**	**--**	**1.99**		
County of San Bernardino							
Population	1,971,318	3,133,801	59.0%	1,025	3,134,826	59.0%	0.5%
Employment	704,239	1,254,749	78.2%	0	1,254,749	78.2%	0%
Households	567,277	972,561	71.4%	307	972,868	71.5%	0.1%
Jobs/Housing Ratio	**1.24**	**1.29**	**--**	**--**	**1.29**		

Sources: SCAG's 2008 Regional Transportation Plan Growth Forecast.

By buildout year 2035, the county is projected to grow by 71.4 percent in housing, 32.1 percent in population, and 65.5 percent in employment. In 2005, the jobs/housing ratio was 1.24 and is projected to increase to 1.29 in 2035, maintaining an overall balance between the number of jobs and number of households within the county. As shown in Table 5.11-5, the proposed project would not change the projected buildout ratio between jobs and housing in the county.

As previously mentioned, there is some variation between the City's and SCAG forecasts because different growth rates were used to determine the projections. Therefore, Table 5.11-6 shows the job/housing ratio according to the City's projections in their General Plan. At buildout, the City predicts their jobs/housing ratio would be 3.7.

Table 5.11-6
Projected Growth and Jobs/Housing Ratio According to the City's General Plan

	General Plan Buildout	Proposed Increase	General Plan Buildout with project
Population	319,241	1,025	320,266
Employment	355,629	0	355,629
Households	95,664	307	95,971
Jobs/Housing Ratio	**3.7**	**--**	**3.7**

Sources: City of San Bernardino 2005a.

Indirect Growth

Infrastructure improvements are required for the proposed project, and a primary access road would have to be constructed from the terminus of Little League Drive and extended west to the northeastern corner of the project site, along with a secondary access road. These access roads would only accommodate the proposed project. The development of the proposed project would also require the construction of new stormwater drainage facilities and infrastructure, the construction of new pipelines on the project site, and potentially an upgrade of the existing pipeline at Little League Drive—which is discussed in further detail in Section 5.15, *Utilities and Service Systems*. Additionally, there would be three proposed detention basins that

would be maintained by the owner or homeowners association. This would improve the fire flow in the higher elevations of the project site and its vicinity.

The Local Agency Formation Commission approved a sphere of influence expansion in September 1996 for the City that placed the project site and adjacent area within the City of San Bernardino's sphere of influence. Therefore, these improvements are consistent with planned growth for the City. To the extent that these improvements would accommodate growth that could not occur otherwise, they would be considered growth inducing. Since substantial growth is anticipated and planned for the City, surrounding growth accommodated by these improvements is not considered significant.

5.11.4 Cumulative Impacts

Implementation of the proposed project would contribute to the growth of the City of San Bernardino. However, the project's cumulative housing and population impact provides benefits for the jobs/housing ratio, regional housing goals that promote housing production, and state-mandated fair share housing programs. The project provides the City with more housing, which decreases the job/housing ratio by 0.01 at the projected buildout in 2035, according to SCAG projections. According to the projections in the General Plan, the proposed project would not change the projected buildout ratio between jobs and housing in the City. As a result, the proposed project would not make a considerable contribution to cumulative growth impacts. Therefore, cumulative impacts would be less than significant and less than cumulatively considerable. The analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.11.5 Existing Regulations

There are no specific regulations applicable to the proposed project regarding housing and population.

5.11.6 Level of Significance Before Mitigation

The proposed project would not result in significant population and housing impacts, and therefore no mitigation measures are recommended.

5.11.7 Mitigation Measures

No mitigation measures are necessary.

5.11.8 Level of Significance After Mitigation

No significant adverse impacts relating to population and housing were identified and no mitigation measures are necessary.

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5.12 PUBLIC SERVICES

This section addresses public services including: fire protection and emergency services, police protection, school services, and library services. Park services are addressed in Section 5.13, *Recreation*. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.15.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. The annexation area includes 13 current residents located within the City of San Bernardino's sphere of influence. These residents would become part of the population of the City upon annexation and would use the City's fire, police, school, and library services.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Section 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 units proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their impacts to public services.

5.12.2 Fire Protection and Emergency Services

5.12.2.1 Environmental Setting

The project site and the adjacent 26.4-acre annexation area are currently in the San Bernardino County Fire Protection District's Valley Service Zone. Upon annexation of the project site (352.8 acres) and the adjacent 26.4-acre area into the City, the annexed areas will be detached from the San Bernardino County Fire Protection District and its Valley Service Zone. However, initial response to calls for fire protection and emergency medical services from the site and annexation area is currently made by the San Bernardino City Fire Department (SBFD) through an automatic aid agreement. The nearest and first responding SBFD station to the project site and annexation area is the Verdemont Fire Station (Station 232) at 6065 Palm Avenue, about 1.5 miles southeast of the project site. The Verdemont Fire Station has a daily staff of four firefighters and is equipped with one paramedic engine truck and one brush truck. The current response time from Station 232 to the farthest, that is, northernmost, part of the project site is 12 to 13 minutes. The City of San Bernardino's response time standard is a five-minute drive time on 90 percent of emergency responses.

The San Bernardino City Fire Department is funded from the City's General Fund (Fratus 2009). The City charges new developments a development impact fee for fire facilities of $740.85 per detached single-family unit. Development impact fees may be spent on facilities, equipment, and vehicles.

The nearest San Bernardino County Fire Department (SBCoFD) fire station to the project site and annexation area is Station 2 at 1511 Devore Road in the Community of Devore, about 3.75 miles northwest of the primary project site entrance. Station 2 has daily staffing of three firefighters, in addition to a company of paid call firefighter volunteers. Station 2 is equipped with one type 1 engine, one type 3 (wildland) engine, and

one type 5 patrol vehicle (Lewis 2009). SBCoFD's response time standard for emergency service calls is that the first responding company leaves the station within 1 to 2 minutes of receiving the call; actual response times to emergencies vary because of the large size of the county (Flesher 2009).

Wildfire Hazards

The project site is currently in a Very High Fire Hazard Severity Zone in a State Responsibility Area (SRA), that is, an area where the state bears financial responsibility for fire suppression. As required by State law, the SRA designation will be removed upon annexation of the site into the City of San Bernardino. The SBFD has an automatic aid agreement with the SBCoFD and is also a participating agency in the California Master Mutual Aid Agreement, in which participating local and state agencies agree to provide mutual aid in dealing with disasters including fire, flood, and earthquakes. Much of the site is covered by vegetation that is highly flammable, such as chaparral and Riversidean sage scrub. In addition, the project site, located at the mouth of two canyons at the southwestern foot of the San Bernardino Mountains, is subject to very strong winds that travel down the mountain slope to the west and south, mostly in autumn and late summer.

Wildfire History

The California Department of Forestry and Fire Prevention (CAL FIRE) has records of wildland fires dating to the beginning of the 20th century on the proposed project site. In the past, fire seasons generally had a pattern. In most areas, at least a decade would pass with few fires, followed by a decade with many large fires. However, these estimated patterns are no longer used as planning tools due to extended droughts and potential effects of climate change. Large fires continue to occur at all times of the year in areas that have substantial amounts of fuels, in some cases burning several times every few years. The occurrence of the large fires also corresponds to periods of extremely high wind conditions.

In November 1980, the Panorama Fire burned through the site, leaving only the mature eucalyptus trees and vegetation in the canyon areas. In the fall of 2003, the Verdemont/Devore area, including the proposed project site, was burned by the Old Fire. The entire Spring Trails site was burned, with the exception of the extreme northern portion of Cable Canyon, altering the conditions of the site. Wildfires affected these same areas again in October 2007 when a fire at Martin Ranch Road and Meyers Road burned 123 acres (CAL FIRE 2007b).

Response to Wildfire

Vegetation fires on the project site would result in a multiagency response, which would include the SBFD, the SBCoFD, CAL FIRE and the US Forest Service (USFS). The SBFD has an automatic aid agreement with the SBCoFD and is also a participating agency in the California Master Mutual Aid Agreement.

Applicable Regulations

City of San Bernardino Municipal Code

Title 19: Development Code

The Foothill Fire Zones Overlay District (Section 19.15) is aimed at mitigating the spread of fire, minimizing property damage, and reducing the risk to the public health and safety. Section 19.15 contains requirements for fire department access; water supply; erosion control; site design; and construction materials and methods.

Title 15: Buildings and Construction

- Foothill Fire Zone Overlay District (Chapter 15.10) has the purpose of reducing injury, death, or property damage due to wildland fires in foothill areas of the City. Section 15.10 contains structural requirements for roofing and other elements of building exteriors such as vents; fire sprinklers; insulation; and fencing.

- Building Safety Enhancement Area Building Standards (Chapter 15.11) have the purpose of reducing injury, death, or property damage due to urban conflagrations spread by high winds. Section 15.10 contains structural requirements for building exteriors, and elements of building exteriors such as eaves and vents, insulation, and fencing.

- Fire Code (Section 15.16) adopts the 2007 California Fire Code (California Code of Regulations, Title 24, Part 9) with specified amendments and exceptions. Section 15.16 includes requirements for fire department access to buildings, and automatic fire extinguishing systems.

5.12.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

FP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.



5.12.2.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement. The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to fire protection and emergency services in the City.

IMPACT 5.12-1: THE PROPOSED PROJECT WOULD INTRODUCE 307 RESIDENCES AND ABOUT 1,025 RESIDENTS INTO A VERY HIGH FIRE HAZARD SEVERITY ZONE IN THE SAN BERNARDINO CITY FIRE DEPARTMENT SERVICE AREA, THEREBY INCREASING THE REQUIREMENT FOR FIRE PROTECTION FACILITIES AND PERSONNEL. [THRESHOLD FP-1]

Impact Analysis: The project would include 307 homes, four parks, and roadways for site and internal access to the roughly 353-acre project site. The project is expected to add about 1,025 residents to the site. Therefore, project development is expected to result in an increase in calls for SBFD fire and emergency medical services. At project completion, SBFD response time to emergency calls to the farthest part of the site from the Verdemont Fire Station is expected to be 12 to 13 minutes. This is seven to eight minutes more than the standard SBFD response time of five minutes. After a reduction in staff from four to three firefighters, staffing at the station was recently restored to four firefighters (Moon 2009). The addition of the Spring Trails development to the area served by the Verdemont Fire Station may result in increased demand on emergency fire services. To offset the additional demand caused by new development projects, the City

requires a fair-share contribution from new developments to help fund ongoing operation and maintenance of the Verdemont Fire Station.

The response force (three fire engines, one aerial ladder truck, and a chief officer with a minimum of fifteen personnel) needed to effectively combat a structure fire would need to be capable of being assembled at points within the project site. The third engine and aerial ladder truck to complete an effective response would come from a station farther away: from Fire Station 227 at 282 West 40th Street (6.75 miles from project entrance) or from SBCoFD Station 2 in Devore (3.75 miles from project entrance). SBCoFD Station 2 has daily staffing of three full-time firefighters supplemented by a company of paid call firefighters as needed, and is equipped with one type 1 (structure) engine, one type 3 (wildland) engine, and one type 5 patrol vehicle (Lewis 2009). While the San Bernardino County station is physically closer, additional time and effort would be required to coordinate with the County, which could delay the response. Either would come with a minimum of three firefighters. The aerial ladder truck, with four firefighters, would come from Fire Station 224 located at 2641 E Street (7.85 miles from project entrance; see Figure 5.12-1, *Fire Station Locations*). A fire battalion chief would also be dispatched.

In the event of a major wildfire on or threatening the site, additional firefighting resources would be brought to the area. Other City fire stations would respond as needed. The SBFD has five type 3 (wildland) engines, which are deployed at Fire Stations 225, 226, 227, 228, and 323. The three closest fire stations to this project have wildland engines. In addition, there is a county/CAL FIRE station nearby in Lytle Creek (Fire Station 20) and a new county fire station will be built as part of a new development in the southern Lytle Creek area, south of the Glen Helen Regional Park in Devore. The new station is dependent on development in the area and may be delayed with changes in the housing market. Vegetation fires result in a multiagency response, which would include CAL FIRE and the USFS.

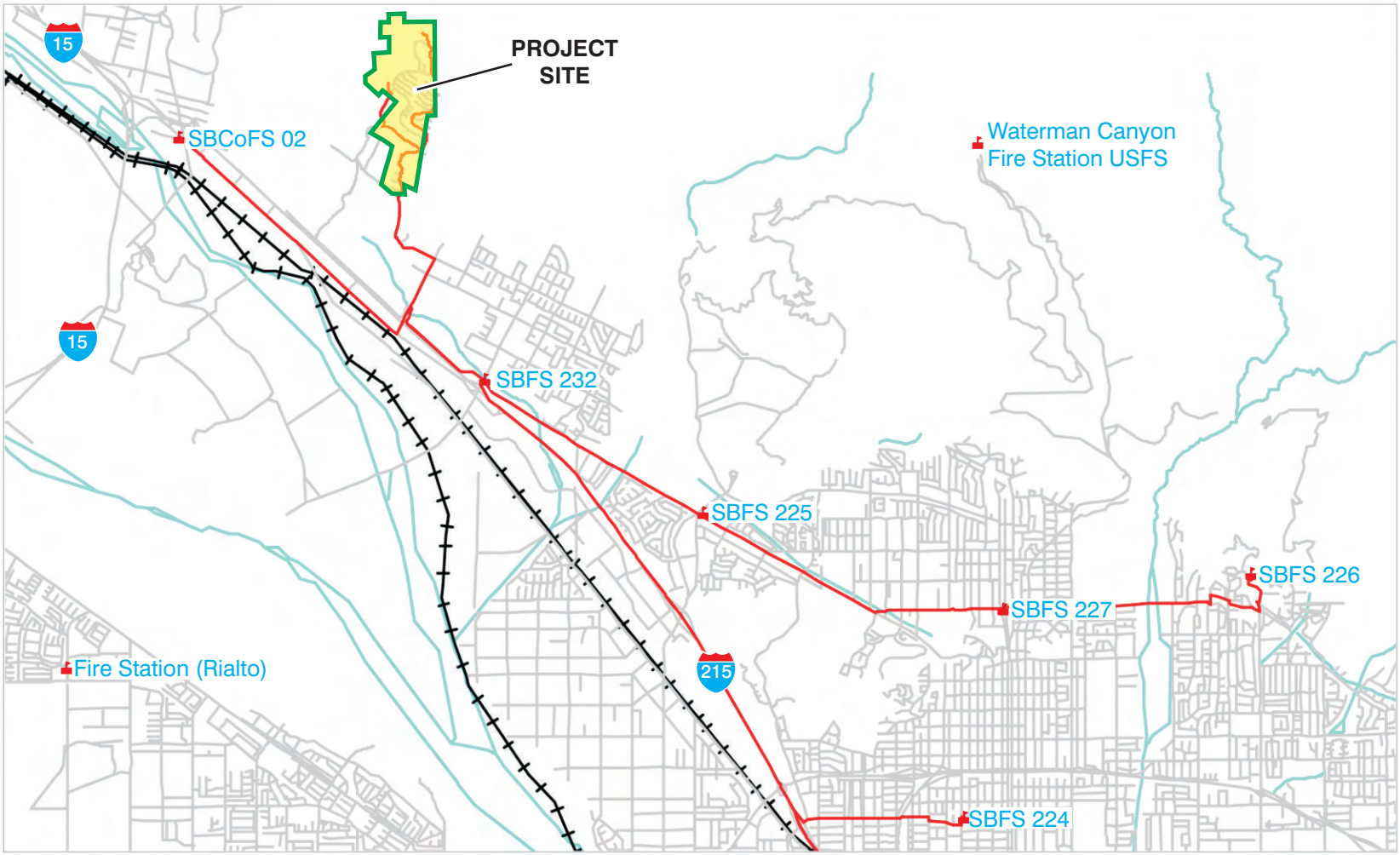
A fire protection/fuel modification plan has been required for the project and is included as Appendix G of this DEIR. See Section 5.6, *Hazards and Hazardous Materials,* for a more detailed discussion. The fire plan is designed to reduce the risks related to the high fire potential of the site. Topography, vegetative, weather, and structural components were used to analyze the setting and provide measures for reducing risks. It also meets the fire safety standards of the Foothill Fire Zone Overlay District (FF District) Standards (Chapter 15.10 of the San Bernardino Municipal Code), Building Safety Enhancement Area Building Standards (Chapter 15.11 Municipal Code), City of San Bernardino Development Code (Chapter 19.15), and City Fire Code (Chapter 15.16).

The fire protection plan divides the project site into three zones, Fuel Modification Zone A (flat, noncombustible construction), Fuel Modification Zone B (wet zone, 100 percent removal of undesirable plant species), and Fuel Modification Zone C (dry zone, 50 percent thinning of the native shrubs). See Figures 5.6-1, *Fire Protection Plan (North Side)* and 5.6-2, *Fire Protection Plan (South Side)*, in Section 5.6, *Hazards and Hazardous Materials*, for the locations of the fuel modification zones.

The fire protection plan also includes vegetation management guidelines, the allowed and undesirable plant palettes, planting maintenance and spacing guidelines, a construction management plan, infrastructure/structural construction features and requirements, and a compliance matrix to be used by the developer, residents, and the homeowners association of Spring Trails to reduce fire risks.

The minimum fire flow required for this project is 1,500 gallons per minute (gpm) at 20 pounds per square inch (psi) pressure for a minimum duration of four hours. Fire hydrants are required at a spacing of no more than 300 feet.

Fire Station Locations



Project Site
Fire Station

SBCoFS San Bernardino County Fire Station
SBFS San Bernardino City Fire Station

NOT TO SCALE

Source: Firesafe Planning Solutions 2008

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Water for fire flow would be provided by expanding and improving the offsite water system, and by onsite reservoirs and transmission lines, as shown in Figure 3-10, *Conceptual Water Plan, Area,* and Figure 3-11*, Conceptual Water Plan, Onsite Water Mains,* and listed in Table 5.12-1. The project would use infrastructure at pressure zones at elevations of 2,100 feet, 2,300 feet, 2,500 feet, 2,700 feet, and 3,000 feet. The project site falls in the 2,300, 2,500, 2,700, and 3,000 zones. Fire-flow storage required for each of the three onsite pressure zones is 360,000 gallons.

Table 5.12-1
Proposed Water System Improvements

Pressure Zone, Feet	*Proposed Facility*	*Capacity Requirements*
Recommended Onsite Improvements		
2,300	2,300 Zone Tank	4,000,000 gallons (Master Plan) 400,000 gallons (Spring Trails)
	2,300 to 2,500 Zone Pump Station	2,591 gpm (Master Plan) 2,048 gpm (Spring Trails)
2,500	2,500 Zone Tank	2,500,000 (Master Plan) 500,000 (Spring Trails)
	2,500 to 2,700 Zone Pump Station	2,004 gpm
2,700	2,700 Zone Tank	900,000 gallons
	2,700 to 3,000 Zone Pump Station	1,750 gpm
3,000	Reservoir	900,000 gallons
	No Pump Station in 3,000 Zone	NA
Offsite Improvements (Existing and Proposed)		
2,100	Meyers Canyon (existing)	2,000,000 gallons
	2,100 to 2,300 Zone Pump Station	3,528 gpm (Master Plan) 2,068 (Spring Trails)

Project water system improvements would be sized to provide required fire flow in addition to meeting project water demands. Pumping stations would be designed with 100 percent redundancy in the event that one or more of the pumping units fails, and equipped with onsite generators that can operate in a blackout or emergency condition.

The four occupied, multiple-acre lots within the 26.4-acre annexation area would continue to be serviced by the City of San Bernardino Fire Department.

Since the preferred and alternative development scenarios would have a similar number of residential units at buildout, this analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.12.2.4 Cumulative Impacts

Cumulative impacts on fire services would occur if additional development is planned for the surrounding area, increasing the need for Fire Station 232 to provide emergency service to the area. There is potential for cumulatively significant impacts to occur, requiring additional fire service facilities and personnel. The citywide population is expected to increase from 201,049 in 2005 to 265,515 in 2035, an increase of roughly 32.1 percent. Other developments in the City would be assessed Fire Protection Development Impact Fees, as would the proposed project. Such fees would help to reduce cumulative impacts to fire protection. This analysis of cumulative impacts is applicable to both the preferred development plan and alternative (overhead electric lines) development plan.

5.12.2.5 Existing Regulations and Standard Conditions

San Bernardino Municipal Code, Chapter 15.10, Foothill Fire Zone Overlay District

San Bernardino Municipal Code, Chapter 15.11, Building Safety Enhancement Area Building Standards

San Bernardino Municipal Code, Chapter 19.15, Development Code

San Bernardino Municipal Code, Chapter 15.16, Fire Code

5.12.2.6 Level of Significance Before Mitigation

Without mitigation the following impact would be potentially significant:

- Impact 5.12-1 The proposed project would introduce 307 residences and about 1,025 Residents into a very high fire hazard severity zone in the San Bernardino city Fire Department service Area, thereby increasing the requirement for fire protection facilities and personnel.

5.12.2.7 Mitigation Measures

Impact 5.12-1

12-1 Prior to issuance of building permits, the developer shall participate on a fair-share basis in funding the continued operation and maintenance of the Verdemont Fire Station. A one-time fair-share contribution equivalent to the Community Facilities District Number 1033 "in-lieu fee" established by Resolution Number 2004-107 of the Mayor and Common Council would mitigate the long-term impact of the project on emergency services of the Fire Department. As an alternative, an irrevocable agreement to annex the project site to Community Facilities District Number 1033 would satisfy this obligation.

5.12.2.8 Level of Significance After Mitigation

Upon implementation of the mitigation measure and compliance with existing regulations and standard conditions, the impacts to fire services would be less than significant.

5.12.3 Police Protection

5.12.3.1 Environmental Setting

Since the project site and the adjacent 26.4-acre annexation area are currently in the City's sphere of influence, police protection is currently provided to the project site by the San Bernardino County Sherriff's Department (Maass 2009). The portions of the City adjacent to the project site are within the Northwest District of the City of San Bernardino Police Department (SBPD). The Northwest District has 39 sworn officers assigned over four shifts. The nearest SBPD station to the site and annexation area is the Main Station at 710 North D Street, roughly eight miles southeast of the project site. SBPD does not currently have plans to develop any additional police facilities and does not presently have a funding source for new facilities. The City of San Bernardino assesses new developments with a law enforcement development impact fee.

Between January 1 and June 30, 2009, SBPD responded to a total of 45,145 service calls; 992 of these were for life-threatening emergencies. The average response time for such emergency calls was about 4.3 minutes. Average response time varies by type of call, up to roughly 46.1 minutes for property crimes and administrative activity.

5.12.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

PP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

5.12.3.3 Environmental Impacts

The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore, the analysis below uses the preferred development plan to assess impacts to police protection in the City. The analysis would be applicable for both scenarios.

IMPACT 5.12-2: THE PROPOSED PROJECT WOULD INTRODUCE NEW STRUCTURES AND RESIDENTS INTO THE SAN BERNARDINO POLICE DEPARTMENT'S SERVICE BOUNDARIES, THEREBY INCREASING THE REQUIREMENT FOR POLICE PROTECTION AND PERSONNEL. [THRESHOLD PP-1]

Impact Analysis: Upon annexation of the project site and county island, the SBPD would be providing police services to the project site. This would expand SBPD's service area and would likely result in an increase in calls for SBPD services. Such an increase in calls would be expected to create a need for additional police staff. The City of San Bernardino's development impact fee for law enforcement is $597.74 per unit for detached single-family residential units. With a total of 307 units, $183,506.18 would be charged to the project developer as law enforcement development impact fees. These fees may be spent on facilities, equipment, or vehicles.

5.12.3.4 Cumulative Impacts

Cumulative impacts on police services would occur if additional development is planned for the surrounding area, increasing the need for police services to the area. At General Plan buildout the City of San Bernardino, including areas now in the sphere of influence, is projected to have a population of roughly 265,515, an increase of 64,466, or 32.1 percent, over the 2005 population of 201,049. Additional developments in the City would be charged law enforcement development impact fees, as would the proposed project. Such fees, which may be spent on facilities, equipment, and vehicles, would help reduce cumulative impacts to police protection.

5.12.3.5 Level of Significance Before Mitigation

Impact 5.12-2 would be less than significant.

5.12.3.6 Mitigation Measures

No mitigation measures are required.

5.12.3.7 Level of Significance After Mitigation

No significant impacts have been identified.

5.12.4 School Services

5.12.4.1 Environmental Setting

The project site and adjacent 26.4-acre annexation area is within the service area of the San Bernardino City Unified School District (SBCUSD). SBCUSD schools serving the project site and surrounding areas are described below in Table 5.12-2.

Table 5.12-2
Existing Schools Serving the Project Site

School	Location	Grades Taught	Enrollment 2008–09	Capacity
North Verdemont Elementary	3555 Myers Road, San Bernardino, approx. 0.6 mile southeast of project site	K–6	518	600
Cesar E. Chavez Middle	6650 North Magnolia Avenue, San Bernardino, approx. 0.9 mile southeast of project site	6–8	1,077	1,400
Cajon High	1200 Hill Drive, San Bernardino, approx. 4.1 mile southeast of project site	9–12	2,636	2,900

Source: DeLand 2009.

As shown above in Table 5.12-2, the unused capacity at each of these three schools is 82 seats at North Verdemont Elementary School, 323 seats at Cesar Chavez Middle School, and 264 seats at Cajon High School. No additional schools are currently planned for this area.

There is a districtwide shortage of elementary school classroom space, with 28 of 44 elementary schools currently on a multitrack, year-round schedule.

Applicable Plans and Regulations

Senate Bill 50

Senate Bill 50 (SB 50, or Proposition 1A, California Government Code Section 65995) was enacted in 1988 to address how schools are financed and how development projects may be assessed for associated school impacts. SB 50 provides three ways to determine funding levels for school districts:

- **Level 1 Fee.** Education Code Section 17620 provides the basic authority for school districts to levy fees against construction for the purpose of funding construction or reconstruction of school facilities and receive a 50 percent match from state bond money, subject to limits set forth in Government Code Section 65995.

- **Level 2 Fee.** The alternative school fee collected pursuant to Government Code Section 65995.5. Certain requirements in accordance with Government Code Section 65995.5 have to be met to collect this level of fees.

- **Level 3 Fee.** The alternative school fee collected pursuant to Government Code Section 65995.7. This fee is collected only when the State Allocation Board is no longer approving apportionments for new construction funding.

The general school fees (Level 1 fees) collected by the SBCUSD pursuant to Education Code Section 17620 and Government Code Section 65995 are currently $5.40 per square foot (effective 2008) for new single-family residential units.

5.12.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

SS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services.

5.12.4.3 Environmental Impacts

The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to school services in the City. The analysis would be applicable for both scenarios.

IMPACT 5.12-3: ***THE PROPOSED PROJECT WOULD GENERATE ROUGHLY 102 NEW ELEMENTARY SCHOOL STUDENTS, 52 NEW MIDDLE SCHOOL STUDENTS, AND 60 NEW HIGH SCHOOL STUDENTS IN THE SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT SERVICE AREA. STUDENTS GENERATED BY THE PROJECT WOULD INCREASE ENROLLMENT AT NORTH VERDEMONT ELEMENTARY SCHOOL, CESAR CHAVEZ MIDDLE SCHOOL, AND CAJON HIGH SCHOOL. [THRESHOLD SS-1].***

Impact Analysis: Estimated student generation by the proposed project is shown below in Table 5.12-3, *Estimated Student Generation.*

Table 5.12-3
Estimated Student Generation for the Proposed Project

School Level	Student Generation Rate[1]	Households	Total Student Generation
Elementary	0.3310	307	102
Middle	0.1695	307	52
High	0.1933	307	60

[1] Dolinka Group 2008.

As shown in Tables 5.12-2 and 5.12-3 the project is estimated to generate roughly 102 additional students in the attendance area of North Verdemont Elementary School, 52 students in the attendance area of Cesar Chavez Middle School, and 60 students in the attendance area of Cajon High School. There is existing unused capacity at Cesar Chavez Middle School and Cajon High School to accommodate project-generated students. However, the unused capacity at North Verdemont Elementary School is 82 students, less than project-generated elementary school students. The project would create a potential need for teachers and support staff at the elementary, middle, and high school levels. In addition, the project may create a need for additional elementary school classroom space, depending on population trends in the area.

SBCUSD would charge the project Level 2 fees of $5.40 per square foot for single-family residential units. School fees levied by school districts under SB 50 are defined as comprising full mitigation for a project's impacts on public schools.

The existing four occupied, multiple-acre lots within the 26.4-acre annexation area would continue to be serviced by the San Bernardino City Unified School District Service Area.

5.12.4.4 Cumulative Impacts

If there are other residential projects in the Verdemont area in addition to the proposed project, the district anticipates the need for more classrooms and staffing at the elementary school level. The District expects increases in staffing at the middle school and high school levels without facilities impacts. School fees levied on related projects pursuant to SB 50 would constitute mitigation for those projects' impacts on schools. This analysis of cumulative impacts is applicable to both the preferred development plan and alternative (overhead electric lines) development plan.

5.12.4.5 Existing Regulations and Standard Conditions

State

- SB 50

5.12.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.12-3.

5.12.4.7 Mitigation Measures

No mitigation measures are required.

5.12.4.8 Level of Significance After Mitigation

No significant impacts have been identified.

5.12.5 Library Services

5.12.5.1 Environmental Setting

Library services are provided to the City of San Bernardino by the San Bernardino Public Library (SBPL). The closest library facility to the project site and adjacent 26.4-acre annexation area is the Dorothy Inghram

Branch Library at 1505 West Highland Avenue, 5.9 miles southeast of the project site. The facility is 3,000 square feet with a collection of 19,802 items; it is open five hours per day, Monday through Thursday, and is staffed by two part-time employees. A collection size of two items per person is generally considered to be adequate in the library profession (Price 2009a). The City of San Bernardino's population in 2008 was 205,493 (CDF 2008), and the SBPL's total collection size is 237,669 items (Price 2009b), or about 1.16 items per City resident. Therefore, the SBPL's existing collection does not meet the guideline for collection size commonly used in the library profession. The SBPL is funded mostly through City General Fund revenues, plus funding from the State Library, Friends of the Library, the San Bernardino Library Foundation, and individual donors. The City of San Bernardino charges a library facilities fee to new developments; for single-family residential developments the fee is $596.63 per residential unit.

5.12.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

LS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for library services.

5.12.5.3 Environmental Impacts

The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to library services in the City. The analysis would be applicable for both scenarios.

IMPACT 5.12-4: THE PROPOSED PROJECT WOULD ADD ROUGHLY 1,025 RESIDENTS TO THE PROJECT SITE, INCREASING THE SERVICE NEEDS FOR THE DOROTHY INGHRAM BRANCH LIBRARY. [THRESHOLD LS-1]

Impact Analysis: The project would include 307 single-family homes and would also involve the annexation of the project site into the City of San Bernardino. Upon annexation, the project would be in the service area of the San Bernardino Public Library, and the Dorothy Inghram Branch Library would be the closest SBPL facility. The average household size in the City of San Bernardino is roughly 3.34 persons. Therefore, the project at completion would be expected to add roughly 1,025 persons to the City. The 26.4-acre annexation area includes 13 current residents. The project along with the annexation area would thus result in an increase in demands for library service in the City. At a ratio of two volumes per resident, the project would create a need for roughly 2,050 additional library items. The annexation area would create a need for roughly 26 additional library items. The project-generated increase in population would also create increased need for technology such as computers at the Inghram Branch Library, and would contribute to a need for additional staffing. The library facilities fee that the City would charge to the project, $596.63 per residential unit, would help the SBPL to meet the project-related increase in demands for library services.

5.12.5.4 Cumulative Impacts

The City of San Bernardino estimates that the City's population will increase to about 265,515 by 2025, including the areas now in the City's sphere of influence, an increase of 64,466, or 32.1 percent, over the 2005 population of 201,149. The proposed project would account for roughly 1 percent of that population increase. Growth in the City will lead to increased demand for library services. New or expanded library

facilities will be needed, in addition to increases in materials, technology, and staffing (Price 2009). The SBPL is funded mostly through the City's General Fund. New developments built in the City will generate increased tax revenue, thus expanding the General Fund. Cumulative development therefore would not have a substantial adverse impact on library services, and the proposed project's impacts on library services would not be cumulatively considerable. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.12.5.5 Level of Significance Before Mitigation

Impact 5.12-4 would be less than significant.

5.12.5.6 Mitigation Measures

No mitigation is required.

5.12.5.7 Level of Significance After Mitigation

No significant impacts have been identified.

5.13 RECREATION

The project site and adjacent 26.4-acre annexation area are located within the City of San Bernardino sphere of influence. The project application, in part, requests that the site and adjacent 26.4-acre area be annexed to the City. Upon annexation, all regulations contained with the City of San Bernardino General Plan, Development Code, and City Municipal Code would govern the future development of the project and 26.4-acre annexation area.

5.13.1 Environmental Setting

City of San Bernardino

Type of Parks

Existing recreational facilities within the planning area are categorized into four classes: mini-parks, neighborhoods parks, community parks, and regional parks. Each of the following parks is based on standards commonly used by the park and recreation profession nationwide:

- **Regional Parks.** Regional parks are at least 50 acres and offer a wide range of amenities to attract the greatest range of users and interests within and outside of the city. Regional parks provide significant natural features and passive and active recreational features such as sports fields/courts, picnicking, fishing, hiking, and camping.

- **Community Parks.** Community parks are approximately 15 to 30 acres with a service radius of 1 to 2 miles. Typical amenities include pools, lighted sports fields and courts, picnic facilities, hiking, play areas, restrooms, off-street parking, and service yards.

- **Neighborhood Parks.** Neighborhood parks are 5 to 15 acres with a service radius of ½ to 1 mile. Neighborhood parks are easily accessible by walking or bicycling to the surrounding population. Typical amenities include both active and passive designs, court games, playground apparatus, picnic areas, informal fields, passive green space, and off-street parking.

- **Mini-Parks.** Mini-parks, pocket parks, or play lots are less than 5 acres with a service area of ¼ to ½ mile. Mini-parks are easily accessible to the surrounding population by walking or bicycling. Typical amenities include court games, playground apparatus, picnic areas, passive green space, and off-street parking.

Park Standards

According to the General Plan, the City utilizes a park acreage standard of five acres per 1,000 residents.

Existing Recreational Facilities

The City of San Bernardino Parks and Community Services Department owns and maintains 52 parks for public recreation activities totaling 540 acres. Of these, 3 are regional parks, 10 are community parks, 19 are neighborhood parks, 3 are special use parks, and 17 are mini-parks (San Bernardino 2005a, page 8-6). The parks contain a broad range of facilities, including children's play equipment, tennis and volleyball courts, and athletic fields. The special facilities include community buildings and senior centers.

The closest City park to the project site is Al Guhin Park at 3650 Little League Drive, about one mile south of the site. The park is approximately 28 acres and contains picnic shelter, 11 picnic tables, and restrooms.

Existing Multipurpose Trails and Bikeways

According to the Parks, Recreation, and Trails Element of the General Plan (Figure PRT-2), the City has a conceptual trail system that combines hiking, equestrian, and bike trails into what is called multipurpose trails. The on-street trail system consists of dedicated bike lanes along the pavement edge of streets. Pedestrian access and recreation are provided through the City's sidewalks and hiking trails. Many of the City's trails are still in the planning stages.

Parkland Needs

The Southern California Association of Governments (SCAG) projects the City's projected population to reach 265,515 by year 2035 (SCAG 2008). Based on the City's park acreage standard, 1,327.6 acres of total parkland are necessary to satisfy the projected population at buildout of the General Plan. According to Table PRT-2 in the General Plan, there are currently 539.98 acres of existing public parks. Therefore, there is a need for an additional 787.6 acres of public parkland to provide for the projected population at buildout.

Regulatory Background

State and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

State

Quimby Act

The 1975 Quimby Act (California Government Code, Section 66477) allows a city or county to require—as a condition of approval of a subdivision—dedication of land or payment of a fee in lieu of dedication, or a combination of both, for park or recreational purposes. This legislation established a maximum parkland dedication standard of three acres per 1,000 population for a new subdivision development, unless the amount of existing neighborhood and community parkland exceeds that limit.

Local

City of San Bernardino General Plan

The City of San Bernardino General Plan establishes comprehensive goals, policies, and implementation measures to meet the City's future needs. Applicable Goals and Policies of the Parks, Recreation, and Trails Element (Chapter 8) of the General Plan include:

Goal 8.1 Improve the quality of life in San Bernardino by providing adequate parks and recreation facilities and services to meet the needs of our residents.

Policies

8.1.2 Provide a variety of park "experiences," including those developed for intense recreational activity, passive open space enjoyment, and a mixture of active and passive activities.

8.1.3 Pursue the development of portions of the Santa Ana River, Lytle Creek, and flood control drainages and detention basins for recreational uses that will not inhibit flood control purposes or be adversely impacted by flooding.

8.1.5 Integrate parks and recreation facilities with the Master Plan for Trails and Bikeways.

8.1.6 Accommodate the recreational needs of the City's residents reflecting their unique social, cultural, ethnic, and physical limitations in the design and programming of recreational spaces and facilities.

Goal 8.2 Design and maintain our parks and recreation facilities to maximize safety, function, beauty, and efficiency.

Policies

8.2.5 Design and develop parks to complement and reflect their natural environmental setting and maximize their open space character.

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

Policies

8.3.1 Work cooperatively with appropriate regional agencies to facilitate development of interconnected trails that tie into major activity areas.



8.3.2 Establish a multi-purpose trail system, as shown on FigurePRT-2, along the foothills of the San Bernardino Mountains, Santa Ana River, Cajon and Lytle Creeks, and interconnecting linkages in collaboration with the U.S. Forest Service, County of San Bernardino, City of Highland, Loma Linda, and other adjacent communities.

8.3.9 Separate bikeway and trail systems from traffic and roadways wherever possible.

8.3.10 Provide clear separation of hikers, joggers, and equestrians where possible.

8.3.11 Seek the use of easements and rights-of-way from owners and continue to negotiate agreements for the use of utility easements, flood controls channels, and railroad rights-of-way to expand the park and trail system.

8.3.12 Incorporate the following features in multi-purpose trails, bike routes, and pedestrian paths:

a. Special paving or markings at intersections;

b. Clear and unobstructed signing and trail/lane markings;

c. Improved signal phasing;

d. Vehicular turning restrictions at intersections;

e. Hearing impaired cross walk signals;

f. Trees to provide shade;

g. Safe and well-lit rest areas; and

h. Coordinated street furniture, including signs, trash receptacles, newspaper stands, and drinking fountains.

8.4.7 Installation and/or replacement of the recreational facilities and equipment and the bikeway and trail system shall be carried out as part of the City's Capital Improvement Program.

City of San Bernardino Development Code

The following are provisions within the City's Municipal Code that are relevant to the proposed project:

Chapter 19.30.320 Parks and Recreation Facilities

- **19.30.320 (4) Park and Recreation Construction Fee.** A park and recreation construction fee shall be assessed for any mobile home lot or residential dwelling unit constructed in the City. Any person securing a building permit to construct a residential dwelling unit, shall pay one percent of the cost of the improvements for each single-family dwelling constructed, as determined by the building permit.

- **19.30.320 (7) Payment of Park and Recreation Construction Fee.** The fee required by Section 19.30.320(4) shall be due and payable upon the issuance of a building permit for either construction of any residential dwelling unit, or installation of electrical and/or plumbing equipment to provide service to a mobile home. A refund of this fee may be made to the person who paid the fee in the event the building permit expires, pursuant to Section 302(d) of the Uniform Building Code.

- **19.30.320 (10) Subdivisions not within City Limits.** When the proposed subdivision lies within the Sphere of Influence of the City, and the subdivider intends to annex, the subdivider shall, pay a fee in lieu thereof, dedicate land, or both in compliance with adopted park and recreational principles and standards of the City's General Plan, and pursuant to the provisions of section 19.30.320.

5.13.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

R-1 Would 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.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.13.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts for the proposed project. The applicable thresholds are identified in brackets after the impact statement.

The proposed project also includes the annexation of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. The annexation would not increase demand to recreational facilities.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 lots proposed in the preferred development plan. In the alternative plan, the area planned as open space totals 126 acres. The additional 0.9 acres of open space above what is shown in the preferred development plan accommodates an SCE easement. Therefore, the analysis below uses the preferred development plan to assess impacts to recreation facilities in the City.

Proposed Trails, Parks, and Open Space Plan

As shown on Figure 3-8, *Trails, Parks, and Open Space Plan*, Spring Trails accommodates 307 single-family detached units (306 new units and 1 existing residence) and a system of pathways that would connect the residences with neighborhood parks and natural open spaces. Development is focused within approximately 241.5 acres, or 68 percent of the total site, and includes 9 acres of parks and 125.1 acres of internal slopes and fuel modification zones. The remaining 32 percent of Spring Trails (111.3 acres) is preserved as natural open space.

Spring Trails would provide approximately 245.4 acres of public and private parkland, open space, and trails, as summarized in Table 5.13-1 and described in detail below. Also, Table 5.13-2, *Maintenance Plan*, describes the maintenance responsibilities for the neighborhood parks and trails in the project area.

Table 5.13-1
Open Space, Parks, and Recreation Facilities

Parks/Recreation Facilities	*Acres*
Public Parks	9.0
Open Space-Natural	111.3
Open Space-Controlled	125.1
Total	**245.4**

Table 5.13-2
Maintenance Plan

Parks and Open Space	Developed By	Maintained By	Owned By
Private Parks	Master Developer	HOA/LLMD	HOA/LLMD
Public Parks	Master Developer	HOA/LLMD	City of San Bernardino
Trails	Master Developer	HOA/LLMD	City of San Bernardino
Detention Basins	Master Developer	HOA/LLMD	HOA/LLMD
Cable Creek and Meyers Open Space Areas	Master Developer	HOA/LLMD	City of San Bernardino

HOA: Home Owners Association
LLMD: Landscape and Lighting Maintenance District

Parks

Neighborhood Parks

Neighborhood parks are public parks that would offer a localized opportunity for outdoor recreation in Spring Trails. The two neighborhood parks that are proposed for Spring Trails would be dual-use parks that would also serve as water detention basins. On- and offsite stormwater flows would be collected and routed through a series of catch basin inlets and storm drain systems that convey water to onsite detention basins, which double as parks. These parks would be designed to withstand the water storage when used as detention basins. For more information regarding the detention basins, refer to Section 5.7, *Hydrology and Water Quality*. Additional amenities may include but are not limited to: gathering areas that provide active and passive recreation for the adjacent residents, shade structures, picnic tables, and tot lots.

Dog Park

The dog park would be a private, 1.6-acre park that is conceptually envisioned to consist of a completely enclosed play area for dogs and an adjacent unenclosed family picnic area that includes view benches and a group picnic structure. Specific recreational amenities depicted are representational and would be determined in the final park plan approved by the City. If a dog park is approved, the dog play area would be secured by a combination tubular steel fence with decorative pilasters along the perimeter of the dog play area facing the local street. A chain-link fence would secure the play area around the remainder of the boundary.

Garden View Park

Garden View Park would be a 0.4-acre private park with a thematic garden, an observation point, and a tot lot. Specific recreational amenities would be determined in the final park plan approved by the City. Additional amenities may include but are not limited to: an outdoor fireplace, water feature, picnic benches, and gazebo.

Trails

A diverse and comprehensive trails system is an integral part of Spring Trails. The interconnected system would allow residents to walk or hike to neighborhood parks and within open space. The varied designs and scenic locations of planned trails would encourage trail use, help to reduce automobile use within the community, and promote healthier lifestyles.

The trail system would also connect to the offsite trails proposed by the Fifth Ward Trails Commission, as shown in Chapter 3, *Project Description*, Figure 3-8, *Trails, Parks, and Open Space Plan*. The Fifth Ward Trails Commission consists of residents who are involved in the planning of multiuse trails in the Verdemont area. All trail connections would be planned in coordination with the City's Parks and Recreation Department and the Development Services Department. The planned trail system comprises of a community trail, equestrian/pedestrian trails, and hiking trails, as shown in the figure .

Community Trail

The community trail would be an eight-foot-wide trail surfaced with decomposed granite or other appropriate surface and within the primary entry road right-of way. It would be intended for pedestrian and bicycle use.

Equestrian/Pedestrian Trails

Equestrian/pedestrian trails would consist of 12-foot-wide trails surfaced with decomposed granite or other appropriate surface. Equestrian/pedestrian trails would include observation points at scenic vistas, and access control fencing may be provided if needed for public safety. The trail connects with the City's existing offsite trail from the southern tip and the west side of the site.

Hiking Trails

The hiking trails on Figure 3-8 are conceptual and represent the need to provide off-street connections in certain locations; however, the exact alignment would be established with the approved tract map. Hiking trails would generally be a minimum of four feet wide.

As shown in Figure 3-8A, *Alternative (Overhead Electric Lines) Trails, Parks, and Open Space Plan,* the land underneath the central portion of the SCE easement is designated as graded slope. If permitted by SCE, a park and/or trail may be located under this portion of the electric lines as a permitted use; however, they are not assumed in the buildout of the alternative plan.

Trailheads

Trailheads would occur at Neighborhood Parks I and II and Garden View Park, and are identified on Figure 3-8. Trailheads would have maps of the trail system and signs to advise people of rules and regulations, trail etiquette, and permitted trail uses.

Observation Points

Observation points are areas with views of the surrounding natural open space elements. Observation points would be strategically located along the multipurpose and equestrian trails. Observation points would most likely include benches, trash receptacles, shade structures, and educational kiosks describing local geology and habitat.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.13-1: THE PROPOSED PROJECT WOULD INCLUDE UP TO 307 RESIDENTIAL DWELLING UNITS TO THE SAN BERNARDINO AREA, RESULTING IN A SUBSEQUENT INCREASE IN USE OF EXISTING RECREATIONAL FACILITIES AND A POSSIBLE DEMAND FOR ADDITIONAL FACILITY DEVELOPMENT. [THRESHOLDS R-1 & R-2]

Impact Analysis: According to the Parks, Recreation, and Trails Element of the San Bernardino General Plan, five acres of parkland and/or recreations facilities per 1,000 population is required for residential development projects. The maximum buildout of the Spring Trails Specific Plan would accommodate 307 units. Based on the City of San Bernardino's General Land Use Element, the 2008 average household size is 3.34 persons, and the project would therefore generate a population of approximately 1,025 residents (307 units x 3.34 = 1,025).

Based on the Quimby Act legislation allowing a maximum parkland dedication standard of 3 acres per 1,000 population, approximately 3.1 acres of parkland or equivalent fees or improvements would be required to serve the residents of the proposed project. Based on the City's General Plan performance standard for parks and recreation facilities (5 acres per 1,000 population), the project would generate the need for 5.13 acres of parkland.

The Spring Trails Specific Plan would provide 245.4 acres of public and private parkland, open space, trails, and recreational amenities on the project site. More specifically, 9.0 of the 245.4 acres would be designated public and private parks: 2.0 acres of private parks and 7.0 acres of public parks. Therefore, the project would exceed the City requirements by 3.87 acres of parkland. Additionally, the project responds to the City's Parks, Recreation, and Trails Element Goals 8.1 and 8.3 by providing parks and creating a trail system that would connect to future and existing regional and City trails. The parks and open space components would provide passive and active recreational opportunities. The exact number, precise location, configuration, type, and amount of amenities and facilities, and the size of the parks and open space areas would be established at the time of development of the tentative tract map(s) of the proposed project.

The proposed parks and open space acreage of the Spring Trials Specific Plan would meet and exceed the amount of parkland and/or recreation facilities defined by the Quimby Act and the more conservative performance standard outlined in the City's General Plan. Therefore, the proposed project's parks and open space components would ensure that recreational facilities would be available to new residents of the proposed project. Since park needs would be met and exceeded onsite, it is not expected that the residents of the proposed project would, in any appreciable manner, need to use City or regionwide parks that are located offsite. Additionally, the proposed public parks, trails, and open space components would also serve residents of the existing and future surrounding communities. Impacts from construction of the parks and trail system are included in the discussion of impacts for the overall development in this EIR.

The above analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.13.4 Cumulative Impacts

Buildout of the Spring Trails Specific Plan would accommodate 307 residential units, generating a total of 1,025 residents. According to the Parks, Recreation, and Trails Element, the City is currently deficient in park space and needs 787.6 acres of public parkland to provide for the projected population. The project itself would generate a need for a total of 5.16 acres of parkland. However, the project would provide 9 acres of public and private parkland and an additional 236.4 acres of open space, providing additional acreage beyond the park requirements and lessening the City's overall parkland needs.

The proposed project increases the cumulative acreage of parks in the City, improving the City's current deficiency of parkland. Additionally, the Spring Trails Specific Plan meets the goals of the Parks, Recreation, and Trails Element of the General Plan—encourage creation of a system of parks, bikeways, trails, and recreation facilities that serve residents needs and connect different neighborhoods to the City; and develop a system of open spaces, bikeways, and trails to connect individual neighborhoods into the fabric of the entire community.

The above analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.13.5 Existing Regulations and Standard Conditions

- City of San Bernardino Development Code, Section 19.30.320, *Parks and Recreation Facilities*.

5.13.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impact would be less than significant: 5.13-1.

5.13.7 Mitigation Measures

No mitigation measures are required.

5.13.8 Level of Significance After Mitigation

No significant impacts have been identified and no mitigation measures are required.



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5.14 TRANSPORTATION AND TRAFFIC

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Spring Trails project to result in transportation and traffic impacts in the City of San Bernardino and its sphere of influence at opening year 2013 and cumulative conditions in 2035.

The analysis in this section is based in part on the following technical report(s):

- *Spring Trails Traffic Impact Analysis*, Kunzman Associates, Inc., May 27, 2011.

A complete copy of this study is included in the Technical Appendices to this Draft EIR (Volume II, Appendix K).

5.14.1 Environmental Setting

Traffic Analysis Methodology

Kunzman Associates conducted a traffic analysis to quantify existing and future traffic conditions. The analysis considers the weekday AM and PM peak hours of traffic. The traffic analysis was conducted based on 329 total residential units, not 307 units as proposed in this project, because previous development plans for the Spring Trails project had included 329 units. The analysis of 329 units is being used in this section of the DEIR to maintain consistency with the technical study prepared for the project. Using this analysis projects a more conservative estimate of future traffic conditions than would an analysis based on 307 units. Actual impacts would be slightly less due to the reduction in units. The following traffic conditions were analyzed:



- Existing Conditions (Year 2011)
- Existing Plus Project Conditions (Year 2011)
- Project Opening Year Conditions (Year 2013)
- Horizon Year Conditions (Year 2035)

Opening year and horizon year average daily traffic (ADT) volumes were calculated using the growth increment approach of the East Valley Traffic Model (EVTM) Year 2000 and Year 2035 average daily traffic volume forecasts. The incremental growth in ADT was factored to reflect growth between existing year 2011 and horizon year 2035. For this purpose, linear growth between the Year 2000 base condition and the forecast Year 2035 condition was assumed. Since the increment between Year 2011 and Year 2035 is 24 years of the 35 year time frame, a factor of 0.69 (i.e., 24/35) was used.

The level of service (LOS) evaluation was based on the 2000 Highway Capacity Manual (HCM), with the definition of an intersection deficiency based on the City of San Bernardino General Plan. Table 5.14-1 has the definitions for intersection LOS as found in the HCM. The City of San Bernardino defines the acceptable level of intersection service as LOS D or better.

Table 5.14-1
Intersection Level of Service

LOS	Interpretation	Volume to Capacity Ratio
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.00–0.60
B	Represents stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles.	0.61–0.70
C	Stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasional drivers may have to wait through more than one red signal intersection, and backups may develop behind turning vehicles.	0.71–0.80
D	Encompasses a zone of increasing restriction approaching instability. Delays to approaching vehicles may be substantial during short peaks with the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.	0.81–0.90
E	Represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00), there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles).	0.90–1.00
F	Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable because full utilization of the approach may be prevented by outside conditions.	>1.00

Source: Highway Capacity Manual 2000.

Existing Roadway Network

Regional access to the project site is provided by Interstate 215 (I-215) and Interstate 15 (I-15). Local access is provided by various roadways in the vicinity of the site. The east–west roadways that would be most affected by the project include the Primary Access Road, Meyers Road, Belmont Avenue, Irvington Avenue, Frontage Road, and Kendall Drive. North–south roadways expected to provide local access include Secondary Access Road, Little League Drive, Magnolia Avenue, and Palm Avenue. The City's roadway network is shown in Figure 5.14-1*, City of San Bernardino Circulation Plan*. The project area is depicted in Figure 5.14-2, *Traffic Analysis Study Area.* Detailed travel lanes and intersection configurations for this study area are shown in Figure 5.14-3, *Existing Roadways and Intersection Controls*.

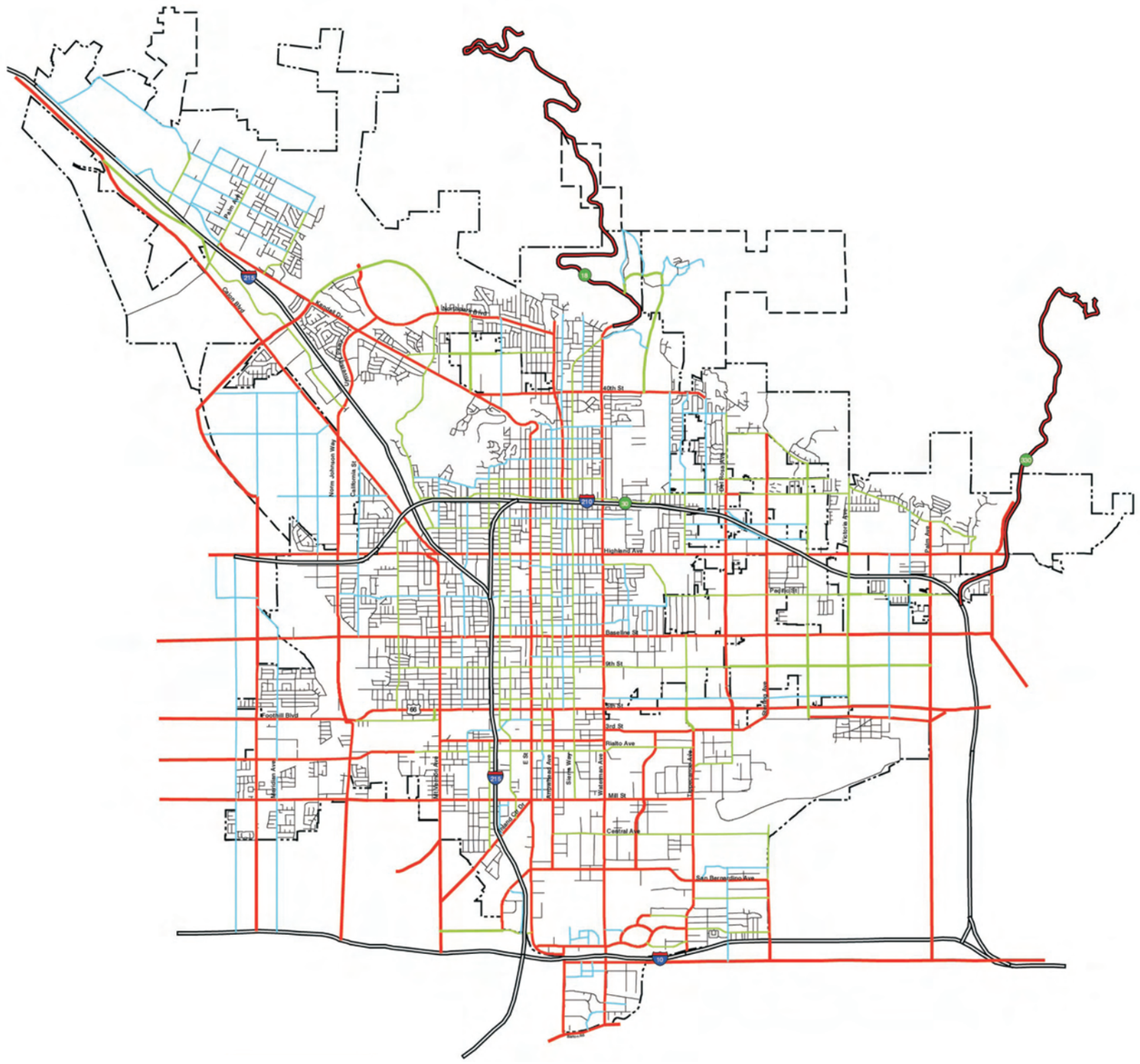
Roadway Classification

The City of San Bernardino General Plan defines city roadways in Chapter 6 of the General Plan, Circulation (pages 6-5 and 6-6).

- **Major Arterials** can accommodate six or eight travel lanes and may have raised medians. These facilities carry high traffic volumes and are the primary thoroughfares linking San Bernardino with adjacent cities and the regional highway system. Driveway access to these roadways is typically limited to provide efficient high volume traffic flow.

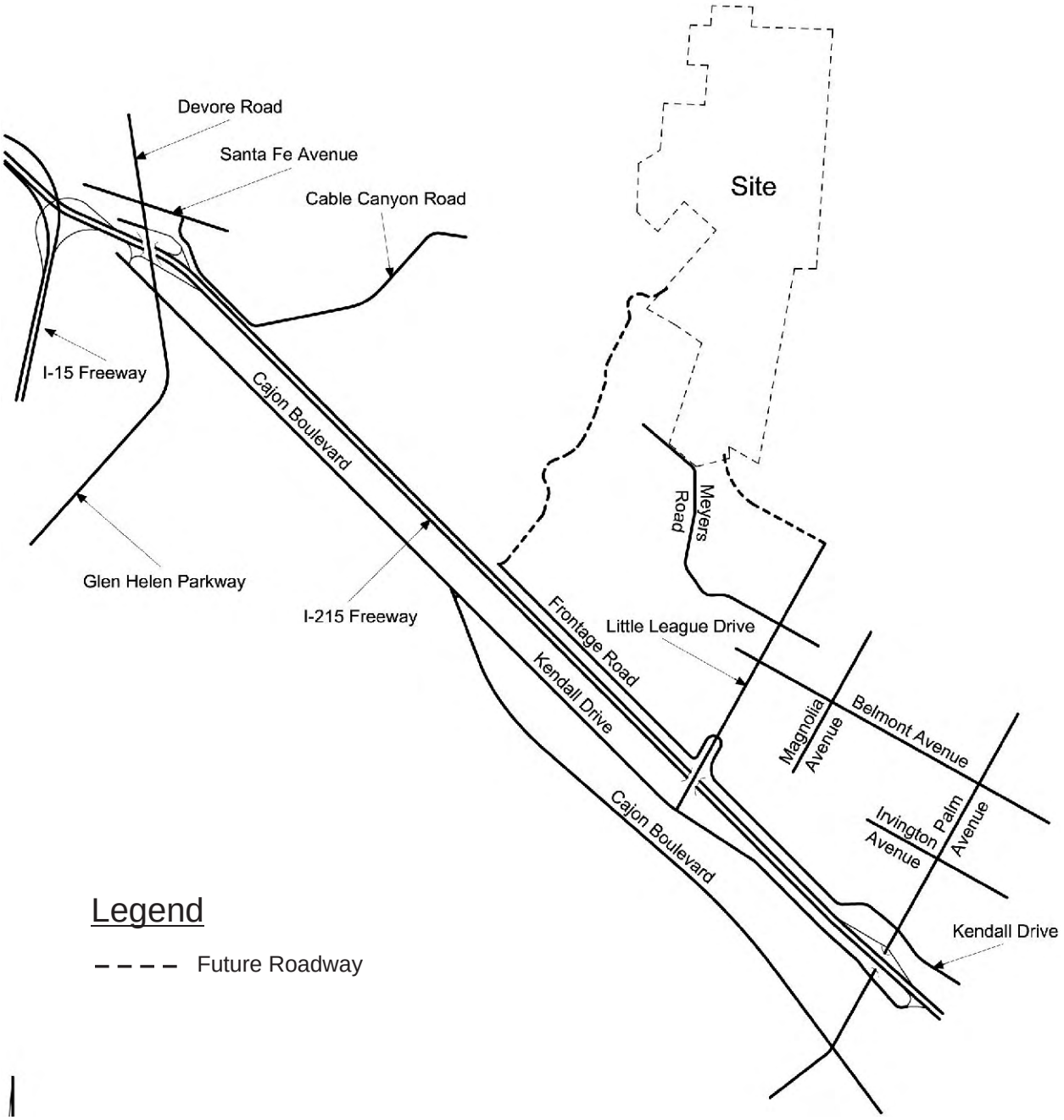
- **Secondary Arterials** are typically four-lane streets, providing two lanes in each direction. These highways carry traffic along the perimeters of major developments, provide support to major arterials, and are also through streets enabling traffic to travel uninterrupted for longer distances through the City.

City of San Bernardino Circulation Plan



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Traffic Analysis Study Area

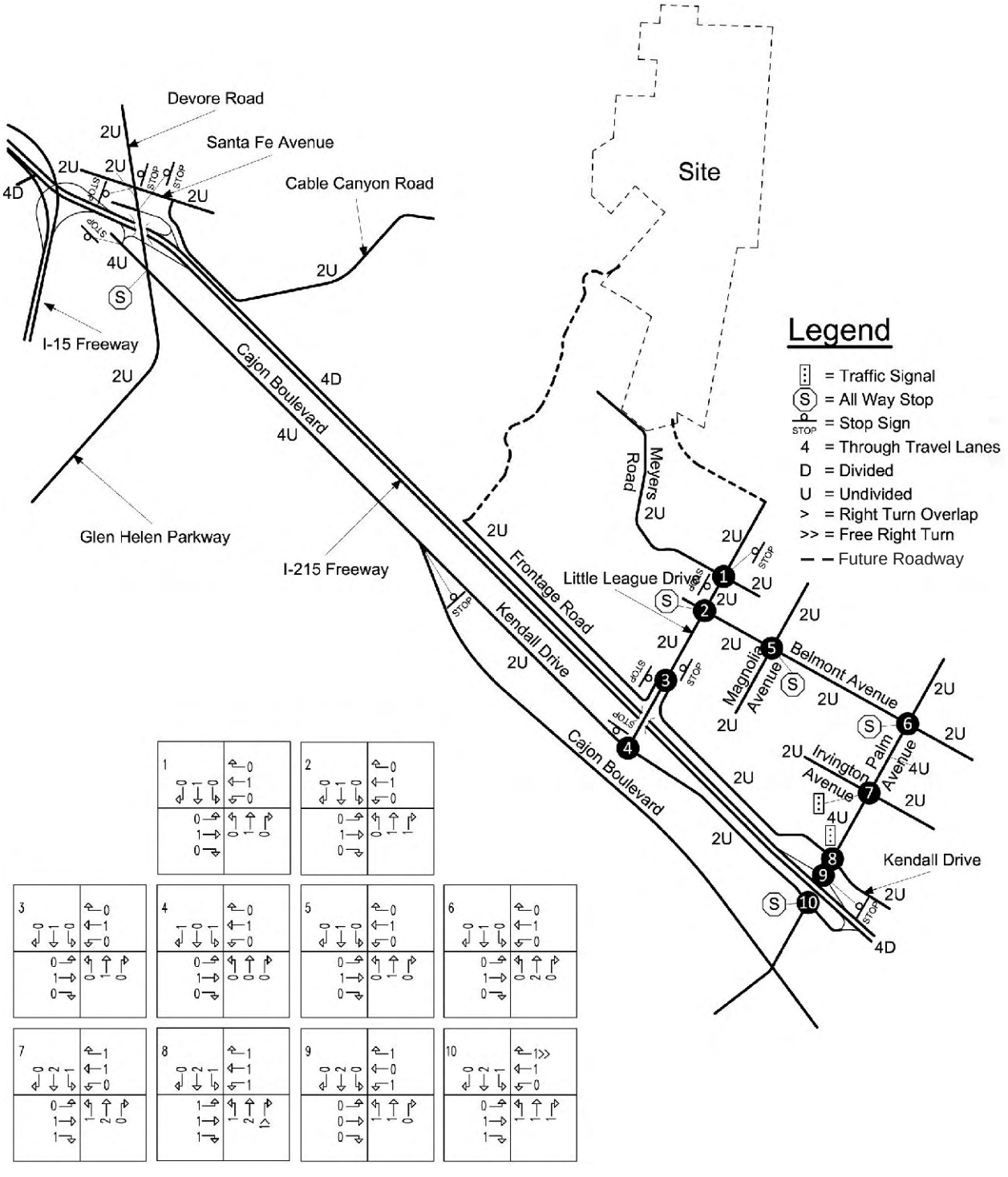


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Source: Kunzman Associates Inc.

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Existing Roadways and Intersection Controls



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Source: Kunzman Associates Inc.

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- **Collector Streets** are typically two-lane streets that connect the local streets with the secondary arterials allowing local traffic to access the regional transportation facilities.

- **Local Streets** are typically two-lane streets that are designed to serve neighborhoods within residential areas. There are several variations on local streets depending on location, length of the street, and type of land use (San Bernardino 2005a).

Public and Alternative Transportation

The City of San Bernardino supports public and alternative transportation options in addition to vehicle travel. There are two main forms of public transportation, the Omnitrans bus service and a Metrolink station that connects the City with regional train stations. The nearest bus stop to the project site is an Omnitrans stop at Palm Avenue and Ohio Street, over two miles walking distance from the project site. Bus service from this stop connects passengers to the main Metrolink Station near the intersection of West Third Street and North K Street in San Bernardino.

Alternative transportation is supported by a series of multipurpose and Class I through Class III bicycle lanes throughout the City. Class I bikeways are dedicated travel ways for bicyclists, usually used around bodies of water, in utility easements, within college campuses, or within or between parks. Class II bikeways are rights-of-way assigned for bicyclists along roadways (i.e., bike lanes). Class III bikeways are shared facilities where bicycles are allowed as secondary uses, usually on roadways or pedestrian pathways. The bicycle and trail network is shown in Figure 5.14-4, *Multipurpose Trails and Bicycle Routes*. The nearest dedicated alternative transportation route to the project site is the Foothills Trail, which traverses northern San Bernardino and down Magnolia Avenue, approximately two miles from the project site.

Existing Traffic Conditions

Existing Roadway Daily Traffic Volumes

Existing average daily traffic volumes on freeways were obtained from the 2009 Traffic Volumes on California State Highways from the California Department of Transportation (Caltrans) and factored from peak hour counts. Existing average daily traffic volumes on streets were factored from peak hour counts taken in October 2008 by Kunzman Associates. Based on discussions with the City of San Bernardino staff and information in a previous traffic study, it is projected that a nominal increase in traffic has occurred in the study area from 2008 to 2011. Existing average daily traffic volumes for freeways and streets are shown in Figure 5.14-5, *Existing Average Daily Traffic Volumes*.

The roadway segment currently carrying the highest ADT within the study area is the segment of I-15 north of the I-215/I-15 interchange (154,000 ADT within the project study area).

Existing Peak Hour Traffic Volumes

Existing intersection traffic conditions were established through morning and evening peak hour traffic counts taken in October 2008 by Kunzman Associates. Counts were taken during the two-hour periods from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. Traffic counts for some intersections were taken on a Thursday prior to the Columbus Day holiday weekend; however, since Columbus Day is on a Monday, traffic counts would not be substantially different because of the holiday.

Existing Intersection Traffic Level of Service Analysis

The existing delay and LOS for intersections in the vicinity of the project are shown in Table 5.14-2. The study area intersections currently operate at an acceptable level LOS of D or better during the peak hours for existing traffic conditions.

Table 5.14-2
Existing Intersection Delay and Level of Service

Intersection	Traffic Control	Peak Hour Delay in Seconds (LOS)	
		Morning	Evening
Little League Drive (NS) at:			
Meyers Road (EW)	CSS	12.0-B	9.3-A
Belmont Avenue (EW)	AWS	8.9-A	7.4-A
Frontage Road (EW)	CSS	12.2-B	8.9-A
Kendall Drive (EW)	CSS	9.7-A	9.6-A
Magnolia Avenue (NS) at:			
Belmont Avenue (EW)	AWS	7.6-A	7.1-A
Palm Avenue (NS) at:			
Belmont Avenue (EW)	AWS	9.8-A	9.2-A
Irvington Avenue (EW)	TS	14.5-B	15.4-B
Kendall Drive (EW)	TS	31.3-C	31.2-C
I-215 Freeway NB Ramps (EW)	CSS	29.2-D	29.9-D
I-215 Freeway SB Ramps (EW)	AWS	34.8-D	14.2-B

Source: Kunzman Associates 2009.
CSS = cross-street stop; AWS = all-way stop; TS = traffic signal; NS = north–south; EW = east–west; NB = northbound; SB = southbound

Existing Freeway Segment Level of Service

The proposed project would contribute traffic to both the I-215 and I-15 freeways. The segment of I-215 analyzed for Spring Trails is the segment between Palm Avenue and I-15. This section of I-215 currently operates at a level of service of B to C for AM and PM peak hours (SANBAG 2003). The section of I-15 analyzed for Spring Trails is the section between Sierra Avenue and I-215, which also currently operates at an LOS of B or C during AM and PM peak hours (SANBAG 2003).

Applicable Plans and Regulations

City of San Bernardino General Plan (2005)

The 2005 San Bernardino General Plan identifies goals and policies regarding the service and safety standards for the roadway network in San Bernardino. These policies are meant to be guidelines for development and do not serve any regulatory purpose.

Goal 6.2: Maintain efficient traffic operations on City streets.

Policy 6.2.1 Maintain a peak hour level of service D or better at street intersections.

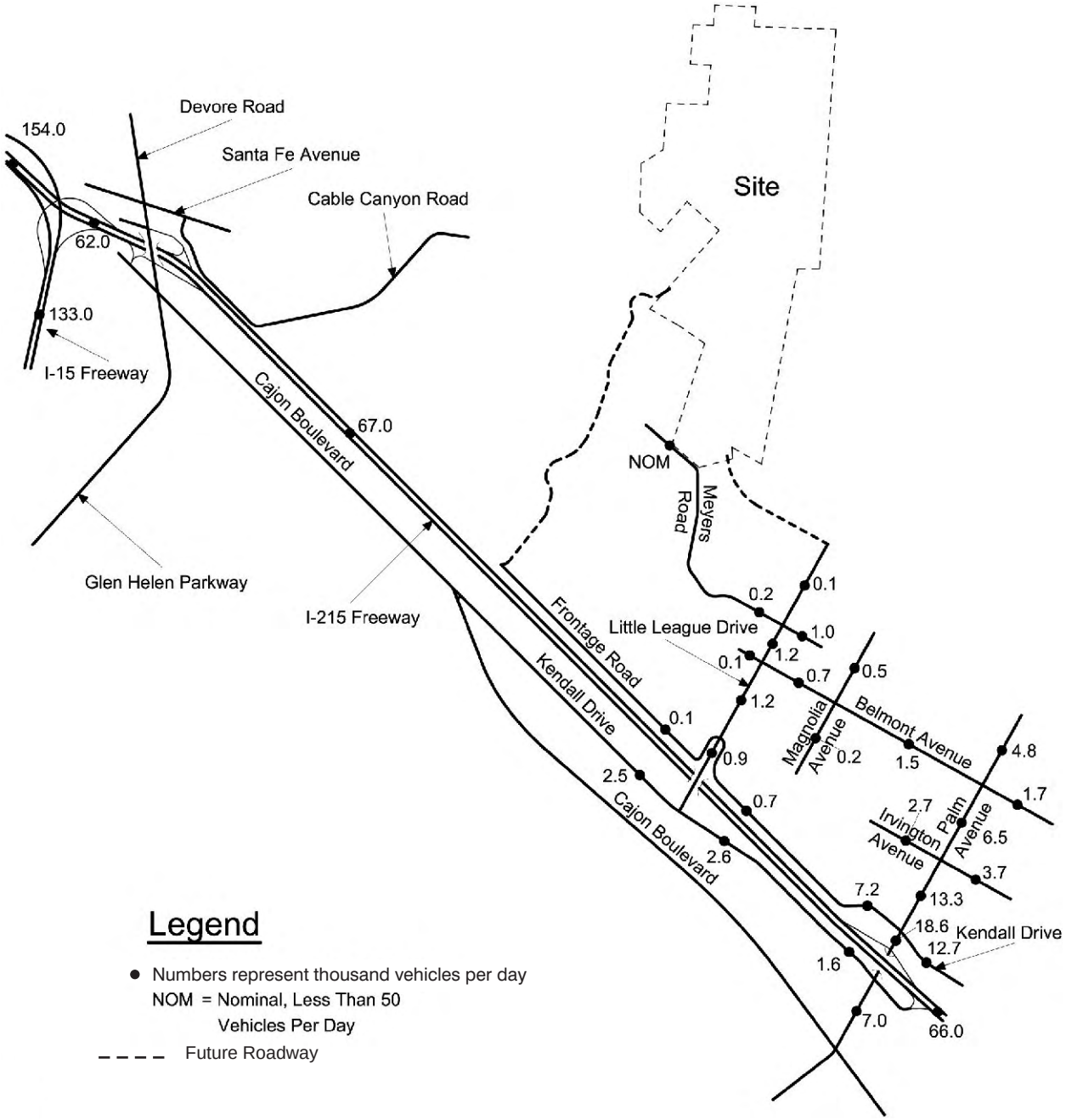
Multipurpose Trails and Bicycle Routes



Source: San Bernardino General Plan

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Existing Average Daily Traffic Volumes



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Source: Kunzman Associates Inc.

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Policy 6.2.2 Design each roadway with sufficient capacity to accommodate anticipated traffic based on intensity of projected and planned land use in the City and the region while maintaining a peak hour level of service (LOS) "C" or better.

Policy 6.2.3 Keep traffic in balance with roadway capacity by requiring traffic studies to identify local roadway and intersection improvements necessary to mitigate the traffic impacts of new developments and land use changes.

Policy 6.2.4 Review the functioning of the street system as part of the Capital Improvement Program to identify problems and address them in a timely manner.

Policy 6.2.5 Design roadways, monitor traffic flow, and employ traffic control measures (e.g. signalization, access control, exclusive right and left turn-turn lanes, lane striping, and signage) to ensure City streets and roads continue to function safely within our Level of Service standards.

Policy 6.2.6 Improve intersection operations by modifying signal timing at intersections and coordinating with other signals, as appropriate.

Policy 6.2.7 Install new signals as warranted.

Goal 6.3: Provide for a safe circulation system.

Policy 6.3.1 Promote the principle that streets have multiple uses and users, and protect the safety of all users.

Policy 6.3.2 Discourage high speeds and through traffic on local streets through traffic control devise such as signage, speed bumps, etc. as acceptable by the local neighborhood.

Policy 6.3.3 Require that all City streets be constructed in accordance with the Circulation Plan and the standards established by the Development Services Director.

Policy 6.3.4 Require appropriate right-of-way dedications of all new developments to facilitate construction of roadways shown on the Circulation Plan.

Policy 6.3.5 Limit direct access from adjacent private properties to arterials to maintain an efficient and desirable quality of traffic flow.

Policy 6.3.6 Locate new development and their access points in such a way that traffic is not encouraged to utilize local residential streets and alleys.

Policy 6.3.7 Require that adequate access be provided to all developments in the City including secondary access to facilitate emergency access and egress.

The General Plan also identifies intersections and roadway segments that are operating at unacceptable levels of service. There are no intersections near the project site identified in the San Bernardino General Plan that are currently operating with an unacceptable LOS.

San Bernardino County Congestion Management Plan (2003)

The San Bernardino County Congestion Management Plan (CMP), developed and administered by the San Bernardino Association of Governments (SANBAG), requires that a traffic impact analysis (TIA) be completed for any project that would generate 250 two-way peak hour trips or more. The TIA must include all freeway links with 100 or more peak hour two-way project trips, other CMP roadways with 80 or more peak hour two-way project trips, and any other "key intersections" as identified by the CMP within the study area. The study area depends on the magnitude of the project and does not need to extend beyond five miles. The CMP roadway system includes all state highways and principal arterials, as defined in the CMP. Key intersections are also identified in the CMP; they may be intersections of two or more key roadways or any intersection that has an LOS of D or worse. I-215 and I-15 are the only roadways within the project area that are identified in the CMP.

The existing intersections identified in the CMP are:

- I-215 freeway (northbound) and Palm Avenue
- I-215 freeway (southbound) and Palm Avenue

5.14.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project could:

T-1 Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio (v/c) on roads, or congestion at intersections).

T-2 Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

The following standard applies for local intersections:

- Minimum acceptable peak hour intersection LOS of D (City of San Bernardino General Plan)

The following standard applies for freeway segments:

- Minimum acceptable peak hour LOS for freeways is E to be maintained.
- For levels of service at E and worse: if the LOS is currently F, there is no significant impact; if the LOS drops from E to F, the impact would be significant (Caltrans/SANBAG agreement).

T-3 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.

T-4 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-5 Result in inadequate emergency access.

T-6 Result in inadequate parking capacity.

T-7 Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant: T-3 and T-6

These impacts will not be addressed in the following analysis.

5.14.3 Environmental Impacts

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 units proposed in the preferred development plan. Impacts to transportation and traffic associated with implementation of the preferred development plan and the alternative development plan are addressed in this section.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. The annexation would not contribute to additional future impacts related to transportation and traffic.

Project Trip Generation and Distribution

Table 5.14-3 shows the projected ADT and morning and evening peak hour trips for the proposed project.

Table 5.14-3
Project Trip Generation

Time Period	*Trips Generated per DU*	*Trips Generated by 329 DU*
Morning Peak Hour		
Inbound	0.19	63
Outbound	0.56	184
Total	**0.75**	**247**
Evening Peak Hour		
Inbound	0.64	211
Outbound	0.37	122
Total	**1.01**	**333**
Average Daily Trips (ADT)		
Daily	**9.57**	**3,149**

Source: Kunzman Associates 2009.
DU = dwelling units

Trip generation is determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates assume that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and our lifestyles remain similar to what we know today. For the proposed project, trip generation was determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use based on the rates provided by the Institute of Transportation Engineers in *Trip Generation (*8th edition).

During the AM peak hour, the project would generate about 247 trips, and during the PM peak hour, it would generate about 333 trips. To determine trip distribution, the East Valley Traffic Model was used to evaluate the regional distribution of project traffic. A select zone analysis with socioeconomic data inputs was used to determine the distribution of trips for the project (see Figure 5.14-6, *Project Trip Distribution*). Based on the identified traffic generation and distribution, project average daily traffic volumes have been calculated and are shown in Figure 5.14-7, *Project Average Daily Trip Volumes*. The proposed single-family residential development would generate about 3,149 total ADT.

The average daily trip volumes for existing plus project traffic conditions are shown in Figure 5.14-8, *Year 2011 Average Daily Trip Volume (with Project)*. The average daily trip volumes for years 2013 and 2035 without and with the project for the study area are depicted in Figures 5.14-9 through 5.14-12. The project would increase daily traffic volumes mainly on Little League Drive, Belmont Avenue, Palm Avenue, and the frontage road, as depicted in these figures. The roadway segment (nonfreeway) with the highest ADT would be the section of Palm Avenue between I-215 and the frontage road (21,000 ADT in 2013 with project, 19,300 ADT in 2013 without project, 28,200 ADT in 2035 with project, and 26,500 ADT in 2035 without project).

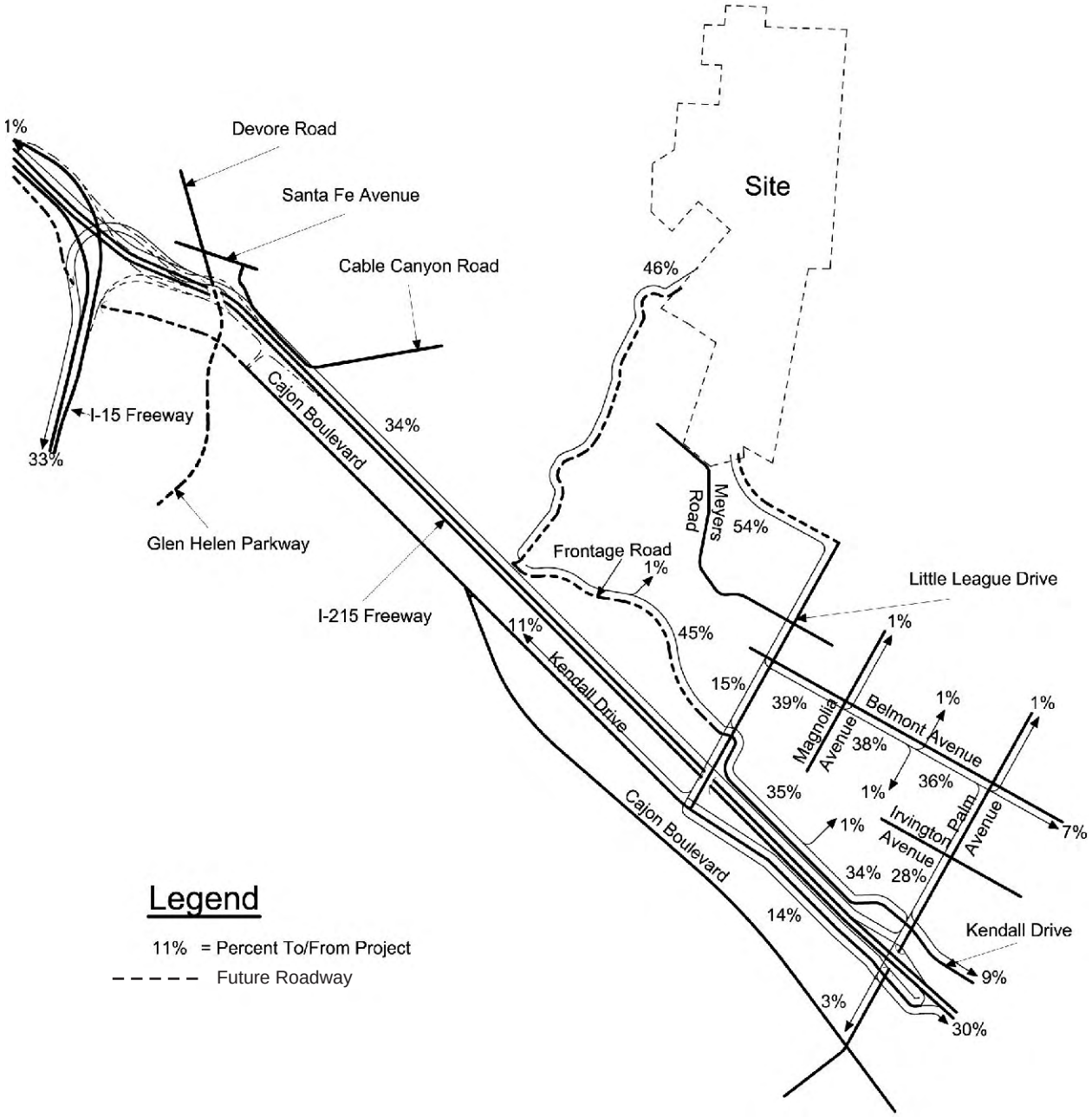
Future Level of Service

The average daily traffic volume forecasts were determined using the growth increment approach on the East Valley Traffic Model year 2000 and year 2035. The incremental growth in average daily traffic has been factored to reflect the forecast growth between 2011 and 2035 conditions. The opening year (2013) traffic volumes were interpolated from the year 2035 traffic volumes based upon a proportion of the future growth increment. Project traffic volumes were then added to the year 2035 East Valley Traffic Model volumes.

Table 5.14-4 shows projected LOS for the project area for existing year (2011) with the project and years 2013 and 2035 with and without the project.

Under both existing plus project conditions (year 2011) and future conditions (years 2013 and 2035) with and without the project, study intersections would operate at acceptable levels of service (LOS D or better), with the exception of the Palm Avenue/I-215 ramp intersections in both the north and south directions and the intersection of Palm Avenue at Kendall Drive.

Project Trip Distribution

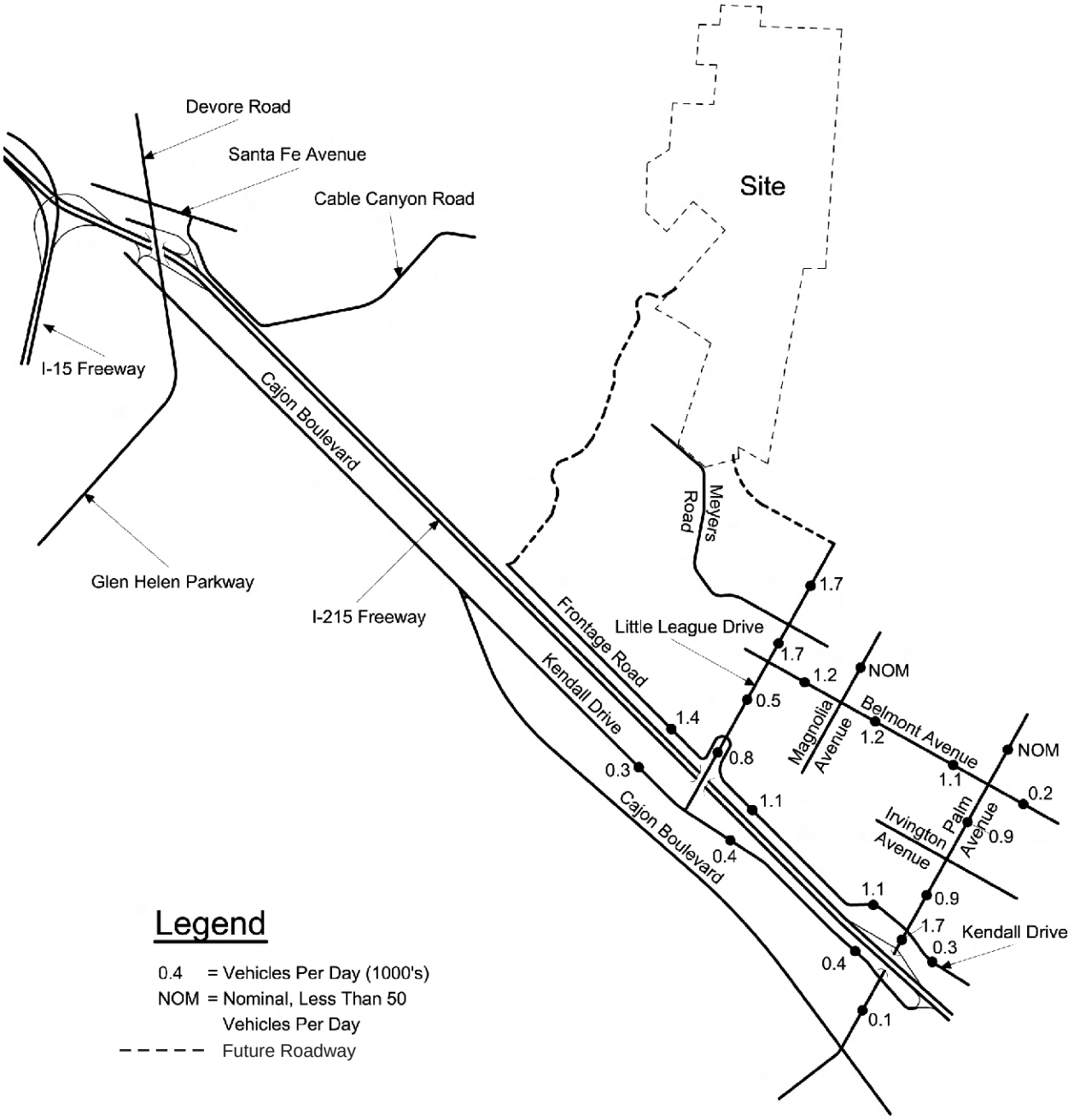


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Project Average Daily Trip Volumes

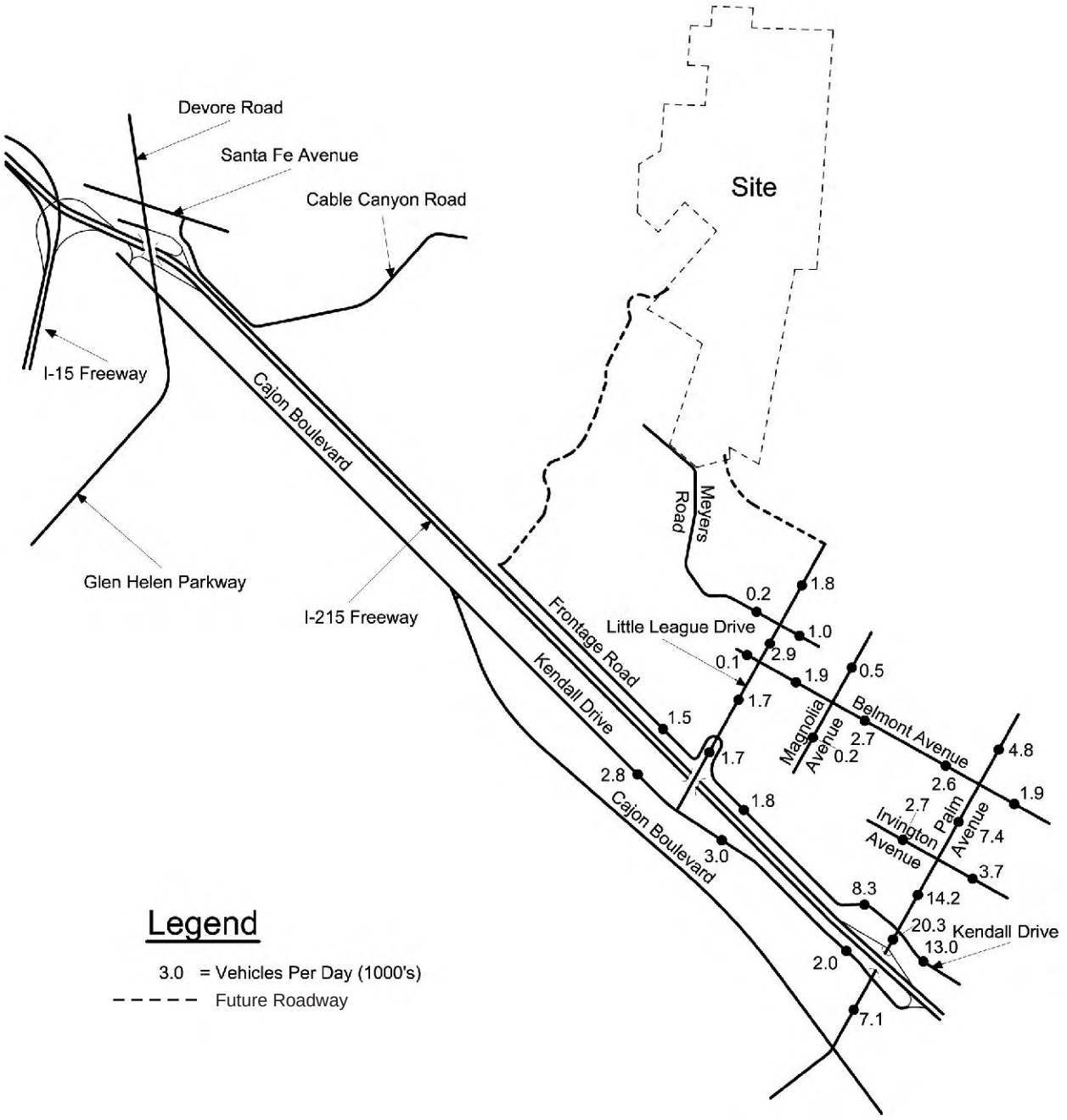


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Year 2011 Average Daily Trip Volumes (with Project)

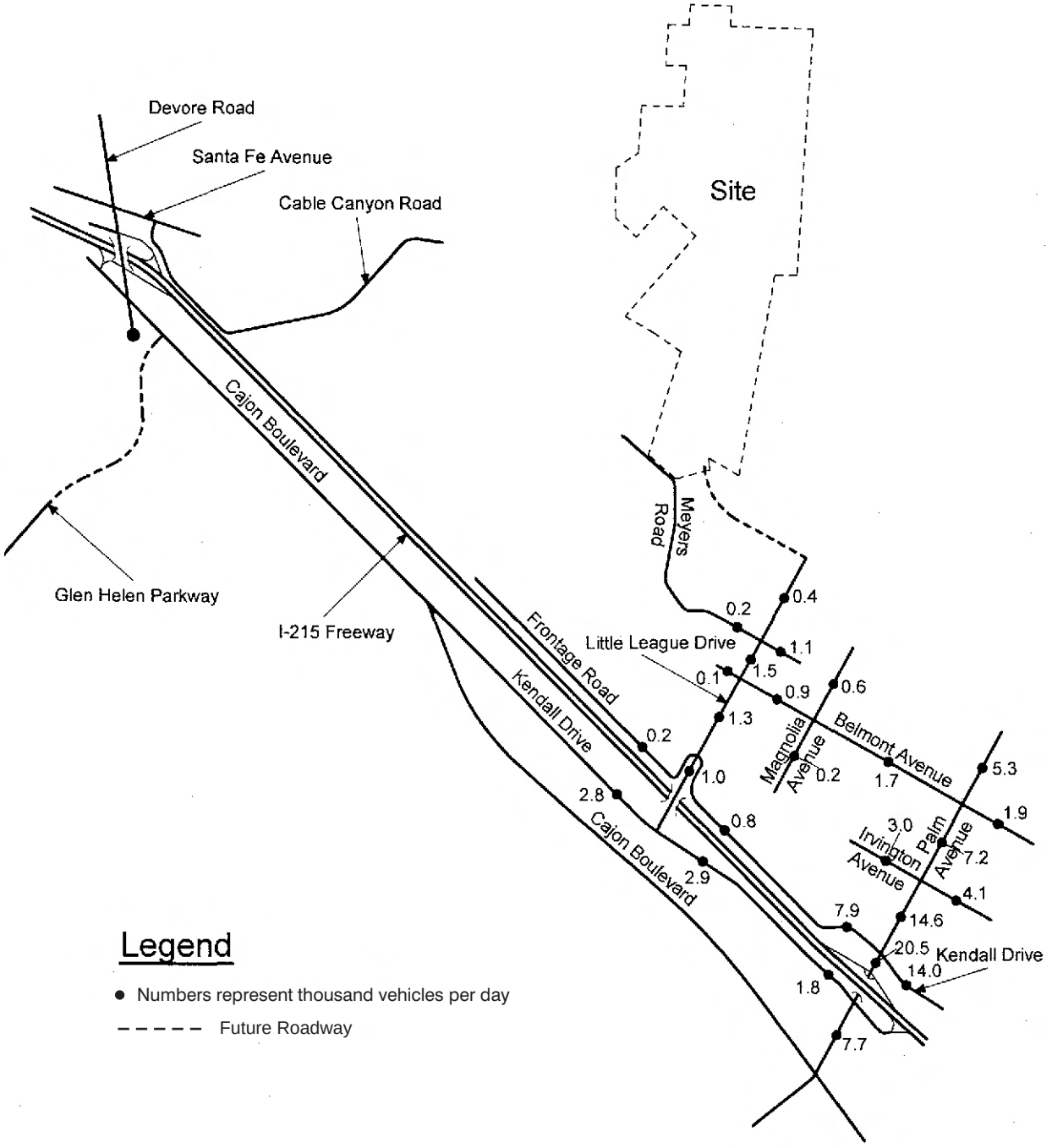


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Year 2013 Average Daily Trip Volumes (without Project)

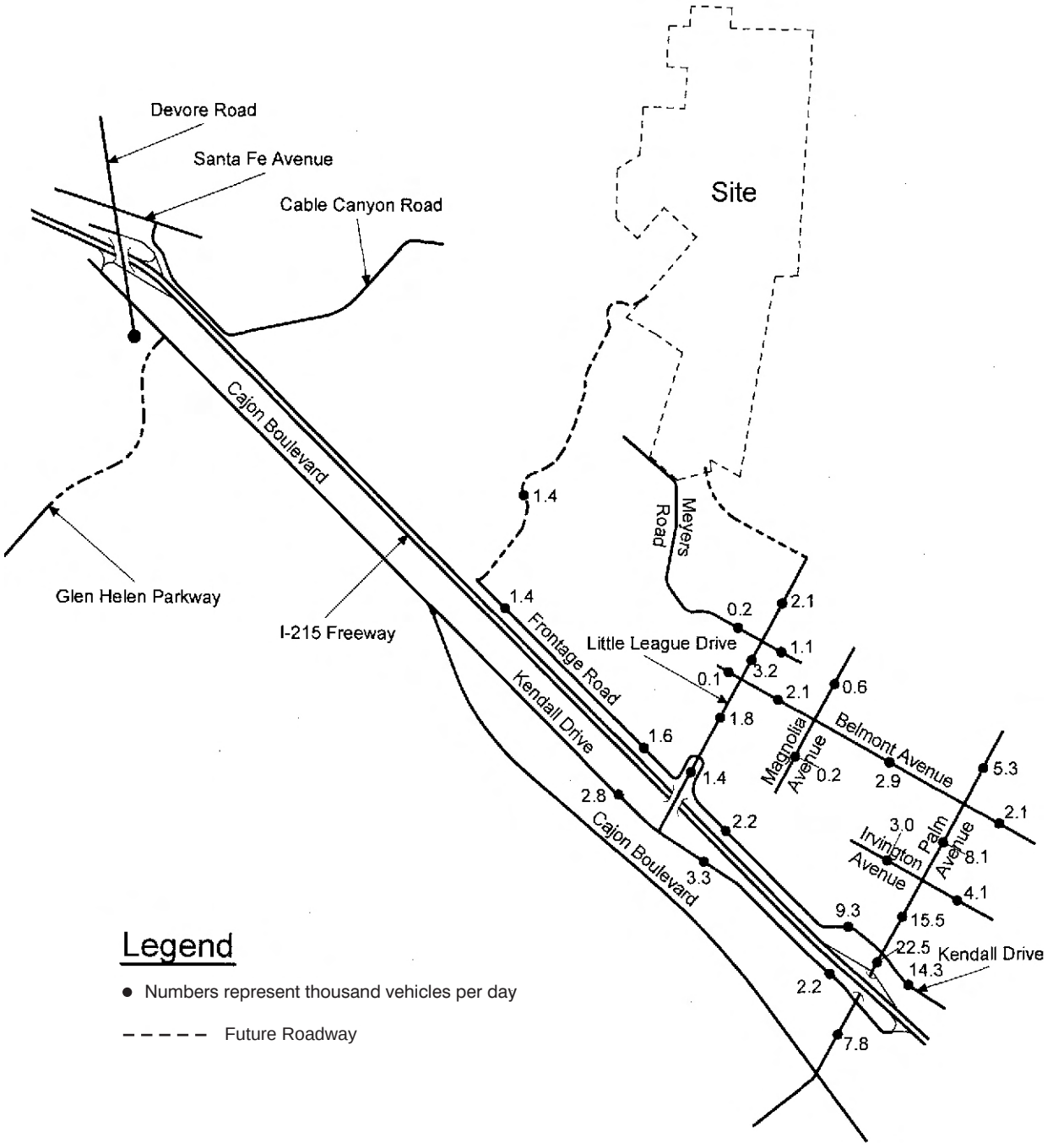


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Year 2013 Average Daily Trip Volumes (with Project)

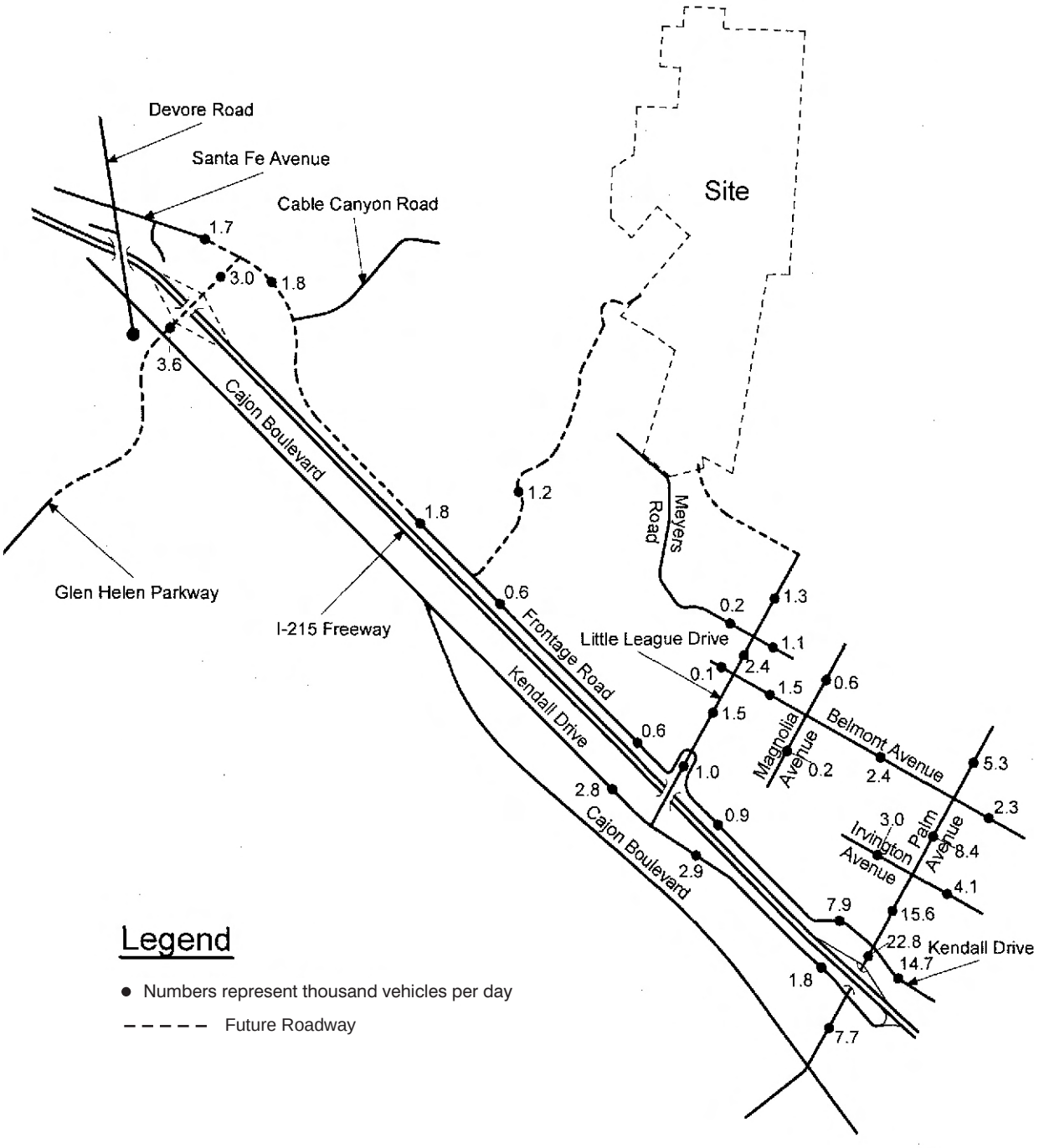


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Year 2035 Average Daily Trip Volumes (without Project)

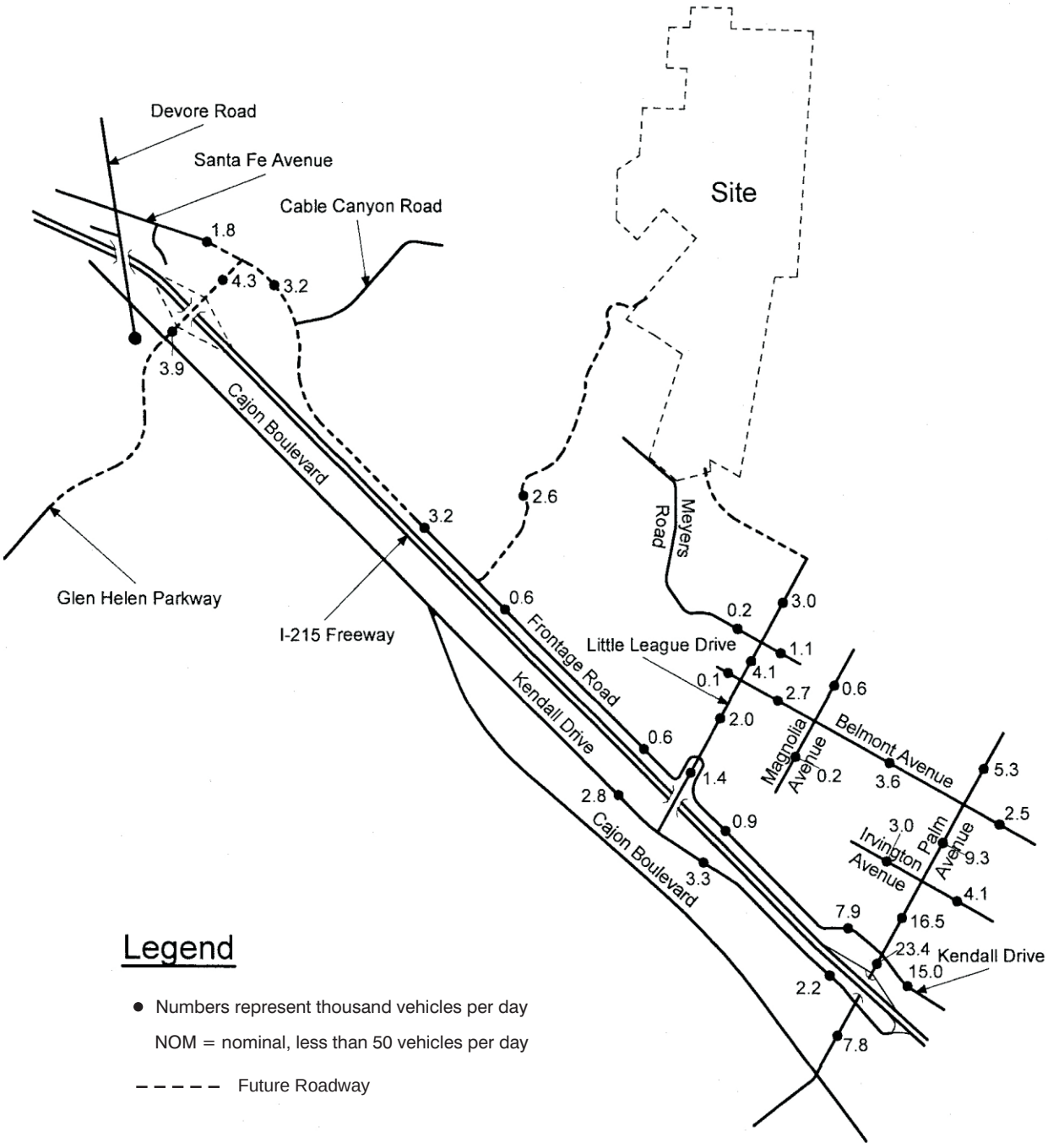


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Year 2035 Average Daily Trip Volumes (with Project)



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Table 5.14-4
Peak Hour Level of Service

No.	Intersection	Traffic Control	Existing Plus Project		Opening Year 2013 without Project		Opening Year 2013 with Project		Year 2035 without Project		Year 2035 with Project	
			Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour
Little League Drive (NS) at:												
1	Meyers Road (EW)	CSS	18.0-C	12.0-B	12.5-B	9.5-A	19.2-C	12.3-B	10.0-A	9.5-A	11.2-B	11.0-B
2	Belmont Avenue (EW)	AWS	11.5-B	8.3-A	9.1-A	7.4-A	11.8-B	8.4-A	7.9-A	7.4-A	8.8-A	8.0-A
3	Frontage Road (EW)	CSS	15.4-C	10.0-B	12.5-B	9.2-A	16.0-C	11.3-B	10.8-B	9.8-A	11.8-B	12.1-B
4	Kendall Drive (EW)	CSS	10.1-B	10.2-B	9.8-A	9.6-A	10.2-B	10.3-B	10.4-B	10.8-B	10.7-B	11.4-B
Magnolia Avenue (NS) at:												
5	Belmont Avenue (EW)	AWS	8.3-A	7.8-A	7.7-A	7.2-A	8.5-A	7.8-A	7.4-A	7.2-A	7.8-A	7.7-A
Palm Avenue (NS) at:												
6	Belmont Avenue (EW)	AWS	10.6-B	10.0-A	10.0-A	9.3-A	10.8-B	10.1-B	9.7-A	10.3-B	10.3-B	11.3-B
7	Irvington Avenue (EW)	TS	14.7-B	15.6-B	14.6-B	15.4-B	14.8-B	15.7-B	14.3-B	14.8-B	14.4-B	14.9-B
8	Kendall Drive (EW)	TS	32.9-C	33.7-C	32.0-C	32.4-C	33.4-C	35.2-D	40.7-D	***73.0-E***	41.9-D	***74.2-E***
9	I-215 Freeway NB Ramps (EW)	TS	34.7-D	***54.2-F***	33.4-D	39.3-E	***40.7-E***	***76.2-F***	***144.6-F***	***499.5-F***	***181.5-F***	***688.5-F***
10	I-215 Freeway SB Ramps (EW)	TS	45.8-E	15.4-C	38.4-E	15.2-C	***50.4-F***	16.6-C	***130.0-F***	***121.5-F***	***149.8-F***	***154.0-F***

Source: Kunzman Associates 2009.
CSS = cross-street stop; AWS = all-way stop; TS = traffic signal; NS = north–south; EW = east–west; NB = northbound; SB = southbound

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Construction-Related Impacts

During project construction, both construction workers and the haul trucks used to move soil would be entering and leaving the site throughout the workday, creating some impacts on traffic volume. Most of these construction-related trips would occur during nonpeak hours with the exception of 282 during the morning peak hour and 73 during the evening peak hour.

The construction of the two access roads would involve the removal of 251,000 or more net cubic yards (cy) of soil (as indicated in Table 3-3 in Chapter 3, *Project Description*). Based on an estimated 14 cy capacity per haul truck, an estimated 17,929 truck trips would be required to export soil to complete the access roads. This is estimated to occur over an approximately three-month period and, therefore, based on a six-day week, requires approximately 249 truck trips per day. The 249 truck trips per day would be equivalent to 1,494 daily passenger car equivalent trips per day, based on a truck equaling three passenger cars. The typical construction activity is anticipated to begin at 7:00 AM and end at 4:00 PM. The total number of haul truck trips occurring during the morning peak hour would be 282. No haul truck trips would occur during the evening peak hour since construction activities would end by 4:00 PM.

In general, the majority of the construction workers (approximately 50 employees plus truck drivers) are expected to arrive at the project site before the morning peak hour (i.e., prior to 7:00 AM) but they would be leaving during the evening peak hour. The number of construction worker vehicles is estimated using the average ridership of 1.135 persons per vehicle per the South Coast Air Quality Management District's *CEQA Air Quality Handbook* (1993). It is anticipated that the majority of the construction workers would remain onsite throughout the day and would not leave the site for lunch via their vehicles. When the workers leave the site at 4:00 PM, they would be contributing 73 evening peak hour trips to the local roadways. Overall, the proposed construction export phase is projected to generate approximately 1,640 daily vehicle trips, which includes both worker and truck trips. Of the total, approximately 282 truck trips would occur during the morning peak hour and 73 worker trips would occur during the evening peak hour.



Construction traffic could potentially contribute to deficiencies at the Palm Avenue/I-215 northbound and southbound ramps intersections during morning and evening peak hours (7:00 to 9:00 AM and 4:00 to 6:00 PM respectively).

Consistency with Applicable Plans

San Bernardino County CMP

Future Freeway Conditions

The I-215 I-15 freeways are identified in the county CMP. The only intersections identified in the CMP within the project study area are the intersections of Palm Avenue and the I-215 northbound ramps and Palm Avenue and the I-215 southbound ramps.

As stated in the CMP, an analysis of freeway LOS is required for all freeway segments that carry 100 or more two-way project trips in the morning or evening peak hour. The freeway peak hour volume forecasts were also developed using the peak period East Valley Traffic Model data directly. The project would contribute traffic greater than the freeway threshold of 100 two-way trips to the I-215 and I-15 freeways during the evening peak hour. The project-generated freeway trips and the corresponding future LOS for area freeway segments without roadway improvements are shown in Table 5.14-5.

Table 5.14-5
Freeway LOS for Morning and Evening Peak Hours

Freeway	Segment Limits	Lanes		Capacity	Project Trips	Year 2035 without Project			Year 2035 with Project		
		Gen. Use	HOV			Trips	V/C	LOS	Trips	V/C	LOS
Year 2035 Freeway Mainline Morning Peak Hour Operation Analysis											
I-215 Freeway NB	Palm Avenue to Devore Road	2	0	4,600	63	4,200	0.91	D	4,263	0.93	D
	Devore Road to I-15 Freeway	2	0	4,600	63	3,994	0.87	D	4,057	0.88	D
I-215 Freeway SB	I-15 Freeway to Devore Road	2	0	4,600	21	6,733	1.46	*F*	6,754	1.47	*F*
	Devore Road to Palm Avenue	2	0	4,600	21	7,259	1.58	*F*	7,280	1.58	*F*
I-15 Freeway NB	Sierra Avenue to Glen Helen Parkway	4	0	9,200	21	5,893	0.64	C	5,914	0.64	C
	Glen Helen Parkway to I-215 Freeway	3	0	6,900	21	5,666	0.82	D	5,687	0.82	D
I-15 Freeway SB	I-215 Freeway to Glen Helen Parkway	3	0	6,900	61	11,147	1.62	*F*	11,208	1.62	*F*
	Glen Helen Parkway to Sierra Avenue	4	0	9,200	61	11,310	1.23	*F*	11,371	1.24	*F*
Year 2035 Freeway Mainline Evening Peak Hour Operations Analysis											
I-215 Freeway NB	Palm Avenue to Devore Road	2	0	4,600	41	7,603	1.65	*F*	7,644	1.66	*F*
	Devore Road to I-15 Freeway	2	0	4,600	41	7,446	1.62	*F*	7,487	1.63	*F*
I-215 Freeway SB	I-15 Freeway to Devore Road	2	0	4,600	72	4,651	1.01	*F*	4,723	1.03	*F*
	Devore Road to Palm Avenue	2	0	4,600	72	6,344	1.38	*F*	6,416	1.39	*F*
I-15 Freeway NB	Sierra Avenue to Glen Helen Parkway	4	0	9,200	70	13,258	1.44	*F*	13,328	1.45	*F*
	Glen Helen Parkway to I-215 Freeway	3	0	6,900	70	13,111	1.90	*F*	13,181	1.91	*F*
I-15 Freeway SB	I-215 Freeway to Glen Helen Parkway	3	0	6,900	40	6,436	0.93	E	6,476	0.94	E
	Glen Helen Parkway to Sierra Avenue	4	0	9,200	40	6,897	0.75	C	6,937	0.75	C

Source: Kunzman Associates 2009.
NB = northbound; SB = southbound; HOV = high-occupancy vehicle; V/C = volume-to-capacity ratio

Four freeway segments are projected to operate at an unacceptable LOS for year 2035 with and without project traffic conditions during the morning peak hour:

- The I-215 freeway segment between Palm Avenue and Devore Road (southbound)
- The I-215 freeway segment between Devore Road and I-15 (southbound)
- The I-15 freeway segment between I-215 and Glen Helen Parkway (southbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (southbound).

Six freeway segments are projected to operate at an unacceptable LOS for year 2035 with and without project traffic conditions during the evening peak hour:

- The I-215 freeway segment between Palm Avenue and Devore Road (northbound and southbound)
- The I-215 freeway segment between Devore Road and I-15 (northbound and southbound)
- The I-15 freeway segment between I-215 and Glen Helen Parkway (northbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (northbound).

Emergency Access and Circulation

The site is susceptible to a number of hazards, such as fires, floods, and seismic activity. In addition to other medical and public emergencies, these risks create a need for adequate emergency service access. Design standards for emergency vehicle access have been incorporated into the site plan for Spring Trails. The Foothill Fire Zones Overlay District (FF District) identified by the City has requirements for emergency access and circulation. There are three zones in the FF District: A, B, and C. Portions of the Spring Trails site are located in all three zones. The provisions for emergency access incorporated into the Spring Trails site plan that would meet the FF District design standards are shown in Table 5.14-6.



Table 5.14-6
Foothill Fire Zones Emergency Access Design Standards

Standard Number	FF District Standard	Spring Trails Compliance
1.A.	Local hillside street standards shall be used to minimize grading and erosion potential while providing adequate access for vehicles, including emergency vehicles. The right-of-way shall be 48.5 feet with 40 feet of paved width and parking on both sides and a sidewalk on 1 side. (A + B)	Cul-de-sacs with homes fronting on both sides have a right-of-way of 46 feet with parking on both sides and a paved width of 36 feet. Cul-de-sacs with homes fronting on only one side have a right-of-way of 40 feet with parking on one side and a paved width of 32 feet. All other streets have a right-of-way of 50 feet, except as noted in 1.B. below.
1.B.	Streets shall have a paved width of 32 feet with parking and sidewalk on 1 side of the street only and right-of-way of 40.5 feet, subject to review and recommendation by the Fire Chief and the City Engineer, with approval by the Commission. (A + B)	Secondary local roads have a right-of-way of 40 feet with parking and sidewalk on one side of the street and a paved width of 32 feet.
1.C.	Subdivisions shall be designed to allow emergency vehicle access to wildland areas behind structures. This is to be accomplished in either of 2 ways:	
	1. Provide a perimeter street along the entire wildland side of development or	Spring Trails provides a perimeter road along portions of the eastern side of the development.
	2. Provide a fuel-modified area, a minimum of 150 feet in depth from the rear of the structure, adjacent to the subdivision and connected to the interior street by flat 12 foot minimum access ways placed no more that 350 feet apart. If designed as a gated easement, access ways may be part of a side yard. (A + B + C where abuts wildland)	Spring Trails also provides a minimum 170-foot-deep fuel-modified area from the rear of structures that are adjacent to wildland areas.
1.D.	No dead-end streets are permitted. Temporary cul-de-sacs are required.	Spring Trails does not have dead-end streets.
1.E.	All permanent cul-de-sac turnarounds and curves shall be designed with a minimum radius of 40 feet to the curb face. No parking shall be allowed on the bulb of a cul-de-sac. (A + B + C)	Cul-de-sacs within Spring Trails are designed with a minimum radius of 40 feet, and no parking will be allowed on the bulb of the cul-de-sac.
1.F.	Cul-de-sacs to a maximum of 750 feet in length may be permitted with a maximum of 30 dwelling units, and to a maximum of 1,000 feet in length with a maximum of 20 dwelling units. (A + B)	The cul-de-sacs comply with this requirement. The maximum proposed cul-de-sac length is 885 feet with 9 D.U.
1.G.	Driveways to residential garages of more than 30 feet in length shall extend for a minimum distance of 20 feet from the garage, on a maximum grade of 5%. Driveways less than 30 feet in length shall have a maximum grade of 8% for a minimum distance of 20 feet from the garage. No portion of a driveway shall exceed a grade of 15%, unless approved by the Fire Chief and City Engineer. Driveways shall be designed so that the algebraic difference in grades will not cause a vehicle to drag or hang-up. (A+B+C)	Driveways greater than 30 feet in length shall have maximum grade of 10% for a minimum distance of 20 feet from the garage. Driveways less than 30 feet in length shall have a maximum grade of 12% for a minimum distance of 20 feet from the garage. Any variance would require approval from the Fire Chief and/or City Engineer.

Source: Spring Trails Specific Plan 2009.

These design standards for the FF District would be applicable for any emergency situation that requires the access of emergency vehicles. As indicated in the right column, the specific plan would have design standards that meet the requirements of the FF District, and these would allow adequate emergency access to the site. In addition, the secondary access road would have emergency access (though not general public access through the use of a gate barrier) to Meyers Road. There are no significant impacts to onsite emergency access.

Public and Alternative Transportation

Since the project site is mostly vacant, there are no bus or public transit routes running near the site. The nearest bus stop to the project site is an Omnitrans stop at Palm Avenue and Ohio Street, over two miles walking distance from the project site (Omnitrans 2009; Google Maps 2009). This is the northwesternmost stop for Route 7, which runs every hour and connects to other bus routes along its route, including Route 1, which connects to the San Bernardino Metrolink station near the intersection of 3rd Street and J Street in San Bernardino.

Magnolia Avenue is also designated as a primary multipurpose trail in the City of San Bernardino General Plan (see Figure 5.14-4, *Multipurpose Trails and Bicycle Routes*). Primary multipurpose trails accommodate hiking, equestrian, and bicycle users. Little League Drive is part of the Greenbelt Trail, which traverses the foothill region in the northern portion of the City. This trail would be about 1.5 miles walking distance from the project site (Google Maps 2009).

There are no bus routes or other public transit facilities planned for the development. Since it is a residential neighborhood, the primary users of the roads would be local residents. Walking, biking, and equestrian use would be allowed and encouraged on rights-of-way and on public trails throughout the site. Private vehicles would most likely be the most common form of transportation used onsite since the site is not in the immediate vicinity of public transit stations. If bus or other public transit service were expanded in the area of the proposed project, the proposed project would not interfere with potential routes.

Roadway Improvements

Intersection/Roadway Improvements

For opening year 2013 and horizon year 2035, roadway improvements have been identified that would eliminate deficiencies for local study area intersections. The LOS values without improvements are shown in Table 5.14-4. Improvements are recommended by year 2013 for the Palm Avenue/I-215 ramps intersections:

- Palm Avenue at I-215 northbound ramps:
  - Replace the cross-street stop with a traffic signal stop

- Palm Avenue at I-215 southbound ramps:
  - Replace the all-way stop with a traffic signal stop
  - Increase the southbound left turn approach lane from one lane to two lanes

The following improvement is identified for year 2035:

- Palm Avenue at Kendall Drive:
  - Install additional westbound left turn lane

In addition, the construction of the project access roads would include these improvements:

- Extension of Little League Drive to the project site to form the primary access road, including improvements to the existing segment of Little League Drive north of Meyers Road.

- Extension of the secondary access road from southwest corner of project site to the frontage road.

The implementation of roadway improvements would improve project area LOS as shown in Table 5.14-7.

Table 5.14-7
Future LOS for Project Intersections with Roadway Improvements

No.	Intersection	Traffic Control	Opening Year 2013		Year 2035	
			Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour
Little League Drive (NS) at:						
5	Meyers Road (EW)	CSS	19.2-C	12.3-B	11.2-B	11.0-B
6	Belmont Avenue (EW)	AWS	11.8-B	8.4-A	8.8-A	8.0-A
7	Frontage Road (EW)	CSS	16.0-C	11.3-B	11.8-B	12.1-A
8	Kendall Drive (EW)	CSS	10.2-B	10.3-B	10.7-B	11.4-B
Magnolia Avenue (NS) at:						
9	Belmont Avenue (EW)	AWS	8.5-A	7.8-A	7.8-A	7.7-A
Palm Avenue (NS) at:						
10	Belmont Avenue (EW)	AWS	10.8-B	10.1-B	10.3-B	11.3-B
11	Irvington Avenue (EW)	TS	14.8-B	15.7-B	14.4-B	14.9-B
12	Kendall Drive (EW)	TS	33.4-C	35.2-D	35.9-D	47.3-D
13	I-215 Freeway NB Ramps (EW)	TS	14.7-B	18.7-B	17.2-B	42.7-D
14	I-215 Freeway SB Ramps (EW)	TS	14.2-B	14.1-B	26.0-C	28.1-C

Source: Kunzman Associates 2011.
CSS = cross-street stop; AWS = all-way stop; TS = traffic signal; NS = north–south; EW = east–west; NB = northbound; SB = southbound

Freeway Mainline Improvements

Recommended improvements to freeway segments are summarized in Table 5.14-8. The freeway segments that operate with unacceptable LOS values during the morning and/or evening peak hours before improvements for year 2035 are shown in Table 5.14-5.

Per the SANBAG/Caltrans "I-15/1-215 Devore Interchange Reconfiguration Project Study Report" (January 2009), the following freeway improvements have been proposed:[1]

- I-215 (between Palm Avenue and Devore Road)
  - Add one general use lane in northbound and southbound directions
- I-215 (between Devore Road and I-15 Freeway)
  - Add one general use lane in northbound and southbound directions
- I-15 (between Glen Helen Parkway and I-215)
  - Add two general use lanes in northbound and southbound directions

[1] A portion of the funding for the SANBAG/Caltrans I-15/I-215 improvements would be from the State Highway Operations and Protection Program. The balance would be sought from other federal, state, and local funding sources, including Measure I, the half-cent sales tax for transportation improvements in San Bernardino County (SANBAG 2011).

With improvements, the following two freeway segments would continue to operate at an unacceptable LOS for year 2035 with project traffic conditions during the morning peak hour:

- The I-215 freeway segment between Palm Avenue and Devore Road (southbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (southbound).

With improvements, the following four freeway segments would continue to operate at an unacceptable LOS for year 2035 with project traffic conditions during the evening peak hours:

- The I-215 freeway segment between Palm Avenue and Devore Road (northbound)
- The I-215 freeway segment between Devore Road and I-15 (northbound)
- The I-15 freeway segment between I-215 and Glen Helen Parkway (northbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (northbound).

Table 5.14-8
Freeway LOS for Morning and Evening Peak Hours with Improvements

Freeway	Segment Limits	Improvement (Lanes Added)		Improved			
		Gen. Use	HOV	Capacity	Trips	V/C	LOS
Year 2035 Freeway Mainline Morning Peak Hour Operations Analysis with Improvements							
I-215 Freeway NB	Palm Avenue to Devore Road	1	0	6,900	4,263	0.62	C
	Devore Road to I-15 Freeway	1	0	6,900	4,057	0.59	C
I-215 Freeway SB	I-15 Freeway to Devore Road	1	0	6,900	6,754	0.98	E
	Devore Road to Palm Avenue	1	0	6,900	7,280	1.06	***F***
I-15 Freeway NB	Sierra Avenue to Glen Helen Parkway	0	0	9,200	5,914	0.64	C
	Glen Helen Parkway to I-215 Freeway	2	0	11,500	5,687	0.49	B
I-15 Freeway SB	I-215 Freeway to Glen Helen Parkway	2	0	11,500	11,208	0.97	E
	Glen Helen Parkway to Sierra Avenue	0	0	9,200	11,371	1.24	***F***
Year 2035 Freeway Mainline Evening Peak Hour Operations Analysis with Improvements							
I-215 Freeway NB	Palm Avenue to Devore Road	1	0	6,900	7,644	1.11	***F***
	Devore Road to I-15 Freeway	1	0	6,900	7,487	1.09	***F***
I-215 Freeway SB	I-15 Freeway to Devore Road	1	0	6,900	4,723	0.68	C
	Devore Road to Palm Avenue	1	0	6,900	6,416	0.93	D
I-15 Freeway NB	Sierra Avenue to Glen Helen Parkway	0	0	9,200	13,328	1.45	***F***
	Glen Helen Parkway to I-215 Freeway	2	0	11,500	13,181	1.15	***F***
I-15 Freeway SB	I-215 Freeway to Glen Helen Parkway	2	0	11,500	6,476	0.56	C
	Glen Helen Parkway to Sierra Avenue	0	0	9,200	6,937	0.75	C

Source: Kunzman Associates 2009.
NB = northbound; SB = southbound; V/C = volume-to-capacity ratio

Summary of Roadway Improvements and Funding

The San Bernardino Associated Governments Development Mitigation Nexus Study (2009) identifies the fair share contributions from new development for regional transportation improvements (freeway interchanges, railroad grade separations, and regional arterial highways). The Nexus Study identifies specific improvement projects and includes a cost estimate for the projects. Each jurisdiction must develop a schedule of fees or other per-unit mitigation levels that can be demonstrated to achieve the development contribution levels specified in the Nexus Study. Improvements to the Palm Avenue/I-215 ramps intersections are included in the Nexus Study. The project's contribution to these improvements is $2,435 per dwelling unit, as established by the City of San Bernardino Regional Circulation System Fee. At this per unit cost, the total improvement cost would be $10,929,000.

Improvements to the Palm Avenue/Kendall Drive intersection are not included in a City plan or program. If the necessary improvements to this intersection have not been completed at the time combustible materials are placed on the Spring Trails site, the project would be required to fund construction of the improvements.

I-15 and I-215 freeway mainline improvements are proposed per the SANBAG/Caltrans "I-15/1-215 Devore Interchange Reconfiguration Project Study Report." Funding for these improvements is not included in any plan or program at this time.

The project applicant would be funding 100 percent of the construction of the primary and secondary access road and improvements to the segment of Little League Drive between Meyers Road and the primary access road. Construction of the primary and secondary access roads and improvements to Little League Drive north of Meyers Road would occur prior to the placement of combustible material on the project site.

Impact Threshold Analysis

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.14-1: THE PROPOSED PROJECT WOULD GENERATE 3,149 AVERAGE DAILY TRIPS, 247 MORNING PEAK HOUR, AND 333 EVENING PEAK HOUR TRIPS TO THE PROJECT AREA, THEREBY CONTRIBUTING TO EXISTING AND FUTURE UNACCEPTABLE LEVELS OF SERVICE AT THE PALM AVENUE/I-215 RAMPS INTERSECTIONS AND AT THE PALM AVENUE/KENDALL DRIVE INTERSECTION. [THRESHOLD T-1]

Impact Analysis: The City of San Bernardino has an acceptable intersection LOS standard of D or better. All area intersections are currently operating at an acceptable LOS, as shown in Table 5.14-2. The following analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Operational Phase

Spring Trails would include the development of 307 single-family detached houses, with the final phase of construction to be completed by year 2013. The analysis in this report quantifies the impacts of 329 single-family units, and therefore slightly overstates the actual impact anticipated for the 307-unit single-family residential development. The traffic generated by Spring Trails would increase the number of trips on local roadways and freeways, thereby worsening the LOS on these systems. The following intersections would operate at unacceptable levels of service during AM and PM peak hours:

- I-215 northbound ramps and Palm Avenue
- I-215 southbound ramps and Palm Avenue
- Palm Avenue and Kendall Drive

Without roadway improvements, these project area intersections would have unacceptable levels of service (E or worse). However, interchange improvements to the Palm Avenue and I-215 ramps intersection are included in the SANBAG Nexus Study funded by the City of San Bernardino Regional Circulation System Fee. These improvements would improve the LOS to B during morning peak hour traffic on the northbound ramp, to D during evening peak hour traffic on the northbound ramp, and to C during both morning and evening peak hour traffic on southbound ramps. Development impact fees paid by the project applicant would contribute to the Regional Circulation System Fee.

Improvements to the Palm Avenue/Kendall Drive intersection are not included in a City plan or program. If the necessary improvements to this intersection are not in place at the time the Spring Trails project is completed, a significant impact would result.

Construction Phase

Construction traffic would contribute to deficiencies at the Palm Avenue/I-215 northbound and southbound ramps intersections during morning and evening peak hours (7:00 to 9:00 AM and 4:00 to 6:00 PM respectively), resulting in a significant impact.

IMPACT 5.14-2: PROJECT-RELATED TRIP GENERATION IN COMBINATION WITH EXISTING AND PROPOSED CUMULATIVE DEVELOPMENT WOULD RESULT IN DESIGNATED ROADS AND/OR HIGHWAYS EXCEEDING SANBAG'S CONGESTION MANAGEMENT PLAN SERVICE STANDARDS. [THRESHOLD T-2]

Impact Analysis: The traffic analysis for Spring Trails was completed in accordance with the definition of deficiency of the San Bernardino County CMP The analysis is applicable to both the preferred development plan and the Alternative (overhead electric lines) development plan. For freeway facilities, the definition of deficiency is based on maintaining a level of service standard of LOS E or better, except where an existing LOS F is already identified. There are two roadways identified in the CMP that would be impacted by project traffic:

- I-215 freeway
- I-15 freeway

Four segments of these two freeways are expected to have an LOS of F during morning peak hours with or without the project in year 2035, and six segments are expected to have an LOS of F during evening peak hours with or without the project in year 2035 (see Table 5.14-5). All of these segments, except the northbound and southbound segments of I-15 between Sierra Avenue and Glen Helen Parkway, are included in the Caltrans improvement plans for the Devore interchange.

With improvements, four of these freeway segments would operate at acceptable levels. However, the following freeway segments would continue to operate at an unacceptable LOS for year 2035 with improvements (see Table 5.14-8):

- The I-215 freeway segment between Palm Avenue and Devore Road (northbound and southbound)
- The I-215 freeway segment between Devore Road and I-15 (northbound)

- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (northbound and southbound)
- The I-15 freeway segment between I-215 and Glen Helen Parkway (northbound)

Spring Trails would contribute more than 100 two-way trips during the evening peak hour to I-15 and I-215 in the project study area and would generate traffic that contributes to the unacceptable levels of service on these freeway segments. As a result these impacts are significant.

IMPACT 5.14-3: PROJECT CIRCULATION IMPROVEMENTS HAVE BEEN DESIGNED TO ADEQUATELY ADDRESS POTENTIALLY HAZARDOUS CONDITIONS (SHARP CURVES, ETC.), POTENTIAL CONFLICTING USES, AND EMERGENCY ACCESS. [THRESHOLDS T-4 AND T-5]

Impact Analysis: The proposed Spring Trails Specific Plan would involve the development of single-family residences with a local roadway network of cul-de-sac right-of-ways, a main loop road, and two access roads. These two access roads would connect the project site to the existing Meyers Road, Little League Drive, and Perrin Road. The access roads and onsite circulation would follow the design standards of the FF District that allow emergency access to the site and would not create any dangerous conditions. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

IMPACT 5.14-4: THE PROPOSED PROJECT PROVIDES ACCESS FOR ALTERNATIVE TRANSPORTATION. [THRESHOLD T-7]

Impact Analysis: The proposed roadway network of the Spring Trails project includes two access roads, a primary local street, a secondary local street, and two types of cul-de-sac streets. There are no planned public transit uses for the site, but residents would have indirect access to the Omnitrans bus system (approximately two miles to bus stop). The project's trail system would tie into areawide trails that would help facilitate access to public transit. It would provide trails and routes for pedestrian, bicycle, and equestrian use. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.14.4 Cumulative Impacts

The proposed project would result in both project-specific and cumulative potentially significant impacts. The local roadways would experience growth in average daily trips as a result of not only this project but other growth in the area. The analysis completed in the traffic study and used for Impacts 5.14-1 and 5.14-2 combined the future traffic generation projections for years 2013 and 2035 as determined in the East Valley Traffic Model with projected project-specific traffic generation. Recommended intersection and freeway segment improvements would improve cumulative traffic conditions based upon the East Valley Traffic Model and project-specific projections. However since some of these improvements are not funded at this time, cumulative impacts would be significant and unavoidable. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.14.5 Existing Regulations and Standard Conditions

City of San Bernardino Regional Circulation System Fee is implemented with the purpose of funding regional improvement projects, including the improvements at the I-215 northbound and southbound ramps at Palm Avenue. As required, the proposed project would pay into this fee schedule the amount of $2,435 per dwelling unit.

5.14.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.14-3 and 5.14-4.

Without mitigation, the following impact would be **potentially significant**:

- Impact 5.14-1 During the operational phase, the proposed project would contribute to the unacceptable LOS conditions at the following intersections:
  - Palm Avenue and Kendall Drive
  - Palm Avenue and I-215 northbound ramps
  - Palm Avenue and I-215 southbound ramps

  During the construction phase, the proposed project would contribute to the unacceptable LOS condition at the Kendall Drive and Palm Avenue intersection.
- Impact 5.14-2 The proposed project would contribute to unacceptable LOS conditions on CMP-identified mainline segments of the I-215 and I-15 freeways.

5.14.7 Mitigation Measures

Impact 5.14-1

14-1 If at the time combustible materials are placed on the project site the Palm Avenue/Kendall Drive intersection has not been improved, the project shall be responsible for funding and constructing the dual westbound left turn lane intersection improvements at Palm Avenue/ Kendall Drive. All improvements to this intersection must be completed to the satisfaction of the Director of Public Works/Civil Engineering prior to issuance of occupancy permits.

14-2 The easterly (primary) project access road between Little League Drive and the project site shall be constructed and paved to meet the City of San Bernardino Fire Department's minimum standards prior to placement of combustible materials on the project site. The access road shall be designed and constructed to meet the City of San Bernardino Public Works/Engineering Division's design standards prior to issuance of occupancy permits. Concurrently, the segment of Little League Drive north of Meyers Road shall be improved to Public Works Department design standards.

14-3 The westerly (secondary) project access road shall be constructed and paved to meet the City of San Bernardino Fire Department's minimum standards prior to placement of combustible materials on the project site. The access road shall be designed and constructed to meet the City of San Bernardino Public Works/Engineering Division's design standards prior to the issuance of occupancy permits.

14-4 Prior to the issuance of grading permits, the project applicant shall prepare a construction traffic plan that shall be approved by the City of San Bernardino Public Works/Engineering Division. The construction traffic plan shall:

- Prohibit project construction traffic from using the Kendall Drive/Palm Avenue intersection during the morning peak hour (7:00 AM and 9:00 AM) and the evening peak hour (4:00 PM and 6:00 PM)
- Establish truck haul routes on the appropriate transportation facilities.
- Provide Traffic Control Plans (for detours and temporary road closures) that meet the minimum Caltrans, City, and County criteria.
- Minimize offsite road closures during the peak hours.
- Keep all construction-related traffic onsite at all times.

Impact 5.14-2

No funding program is currently available for the proposed Caltrans/SANBAG I-215 and I-15 freeway mainline improvements. No additional mitigation measures are available to reduce Impact 5.14-2.

5.14.8 Level of Significance After Mitigation

Impact 5.14-1

The City of San Bernardino Regional Circulation System Fee will reduce impacts at the following intersections:

- o I-215 northbound ramps/Palm Avenue
- o I-215 southbound ramps/Palm Avenue

Mitigation Measure 14-1 would reduce operational impacts to the Kendall Drive and Palm Avenue intersection.

Mitigation Measure 14-4 would reduce construction impacts to the Kendall Drive and Palm Avenue intersection.

Therefore, Impact 5.14-1 would be less than significant during both the operational and construction phases.

Impact 5.14-2

Recommended mainline improvements to I-15 and I-215 freeways are not included in a fee program at this time. As a result Impact 5.14-2 is significant and unavoidable.

5.15 UTILITIES AND SERVICE SYSTEMS

The proposed project would require the extension of utility services to the project site in order to meet the demands of the proposed 307 residential units. This section describes existing water, sewer, storm drain, electrical, and natural gas service in the area and the impact of proposed project on these existing services.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 units proposed in the preferred development plan. Impacts to water, sewer, and solid waste services associated with implementation of the preferred development plan and the SCE alternative development plan are analyzed in this section.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels.

5.15.1 Water Services

5.15.1.1 Environmental Setting

San Bernardino Municipal Water Department

Potable and recycled water would be supplied to the proposed project site by the City of San Bernardino Municipal Water Department (SBMWD). Residences in the 26.4 acre annexation area currently obtain potable water through onsite wells. Upon annexation into the City of San Bernardino, these residences would continue to obtain potable water through onsite wells. In the future water supply infrastructure may be extended into the 26.4 acre annexation area by SBMWD.

SBMWD obtains water mainly from the Bunker Hill Groundwater (BHG) Basin, also known as the San Bernardino Basin area, and provides service to the City of San Bernardino and surrounding unincorporated areas (SBMWD 2005; SBVMWD 2009a). SBMWD has a service area of 45 square miles, 151,000 customers, 551 miles of pipeline, 4,000 fire hydrants, 4 treatment plants, 32 storage facilities with a combined capacity of 100 million gallons, 27 chlorinated facilities, and 66 booster pumps. The service area covers portions of the City of San Bernardino and outlying undeveloped areas, including parkland and flood protection areas. Population within the service area is expected to increase from 173,359 in 2005 to 186,454 in 2030 (SBMWD 2005).

The main planning document used by SBMWD to guide infrastructure planning and water supply decision-making is the Urban Water Management Plan (UWMP). SBMWD is required by the Urban Water Management Planning Act to develop a UWMP that is to be updated every five years. The most recent UWMP was released in 2005 and provides guidance for the planning period between 2000 and 2020. At the time this DEIR was written, the 2010 UWMP was being finalized.

The Municipal Water District Act requires SBMWD to coordinate with other water utility agencies in the San Bernardino Valley. This coordination is managed by the San Bernardino Valley Municipal Water District (SBVMWD), a State Water Project contractor for the San Bernardino Valley. SBMWD must coordinate its plans with SBVMWD with respect to groundwater management issues. SBMWD also has an agreement with SBVMWD for delivering treatment plant discharges to the Santa Ana River to satisfy water rights of downstream users.

Furthermore, water utility agencies and cities in the Upper Santa Ana River Watershed region, within which San Bernardino lies, have jointly agreed to prepare an integrated regional water management plan (IRWMP). SBVMWD is the lead agency in this planning effort. This effort began in 2005 and has not yet been completed (SBVMWD 2009b). The main purpose of this report are to develop a process for managing the use of water in the San Bernardino Valley and to recognize regional projects that would be eligible to receive federal or state funding.

Water Distribution Systems

Potable Water Distribution System

Groundwater is pulled from the BHG Basin through 57 wells, ranging from 50 to 1,300 feet in depth. Water is pumped from these wells at rates that range from 50 to 3,500 gallons per minute (SBMWD 2005). The water is distributed throughout the service area through a system consisting of pipelines, storage reservoirs, pumping stations, hydroelectric generating stations, manual and automatic control valves, fire hydrants, and water meters throughout 19 individual pressure zones. Pressure zones are at elevations of 1,249 to 2,100 feet above mean sea level feet. The groundwater wells can reach a maximum daily demand of 90 million gallons per day (mgd).

There are three reservoirs near the project site: the Meyers Canyon Reservoir in the 2,100-foot pressure zone, the Cajon Reservoir in the 1,916-foot pressure zone, and the Palm Avenue Reservoir in the 1,720-foot pressure zone, all in the northern portion of the community of Verdemont. SBMWD has been expanding water supply service in the Verdemont area, including a new reservoir near the Meyers Canyon Reservoir, pumping stations, and waterlines in the 1,916-, 2,100-, and proposed 2,300-foot pressure zones.

Spring Trails lies in the proposed 3,000-, 2,700-, and 2,500-foot pressure zones. To the southeast is the proposed 2,300-foot pressure zone and to the south is the 2,100-foot pressure zone, as shown in Figure 3-10, *Conceptual Water Plan, Area*, in Chapter 3, *Project Description*. An existing 16-inch water line in the 2,100-foot pressure zone runs in the Meyers Road alignment near the proposed project site to Little League Drive. At this point, it is reduced to a 12-inch line and connects to a 24-inch water line in Magnolia Avenue. In Magnolia Avenue, this 24-inch water line runs both north to the Meyers Canyon Reservoir in the 2,100-foot pressure zone and south to connect to the Cajon and Palm Avenue Reservoirs. A 24-inch water line connects the Cajon and Palm Avenue Reservoirs in the 1,916-foot pressure zone. These water lines are also shown in Figure 3-10. Pumping stations are at the Palm Avenue Reservoir, at the intersection of Magnolia Avenue and Irvington Avenue, on Belmont Avenue between Little League Drive and Magnolia Avenue, and on Little League Drive north of I-215. Existing water infrastructure is shown in Table 5.15-1.

Table 5.15-1
Existing Water Infrastructure near the Proposed Project Site

Reservoirs	Location
Meyers Canyon Reservoir (2.0 million gallons)	½ mile northeast of Meyers Road at the terminus of Perrin Road (in proposed 2300 Zone, supplies for 2100 Zone)
Cajon Reservoir (5.0 million gallons)	500 feet south of the junction of Kendall Avenue and Cajon Boulevard (1916 Zone)
Palm Avenue Reservoir (5.325 million gallons)	630 feet southwest of Palm Avenue/I-215 on-ramps intersection, south of I-215 (1916 Zone)
Water Lines	**Location**
16-inch water line	Meyers Road
12-inch water line	Little League Drive/Belmont Avenue
16-inch water line	Cajon Reservoir to Magnolia Avenue
24-inch water line	Cajon Reservoir to Palm Avenue Reservoir
24-inch water line	Meyers Canyon Reservoir to intersection of Cajon Boulevard and Magnolia Avenue
Pumping Stations	**Location**
Palm Avenue Pumping Station	Palm Avenue Reservoir (1916 Zone)
Magnolia Avenue Pumping Station	Magnolia Avenue and Irvington Avenue (in 1916 Zone, pumps to 2100 Zone)
Meyers Canyon Pumping Station	Little League Drive and the I-215 on-ramps (in 1916 zone, pumps to 2100 Zone)

Source: Spring Trails Specific Plan; Nevarez 2009a; SBMWD 2007.

Recycled Water Distribution System

SBMWD operates the 33-mgd-capacity (36,965 acre-feet per year [afy]) Margaret H. Chandler Water Reclamation Plant (WRP), which treats wastewater to secondary treatment levels. This allows it to meet National Pollution Discharge Elimination Standards, but water from this plant is not directly used as recycled water. After being treated to secondary standards, a portion of the effluent from the WRP is sent to the Rapid Infiltration Extraction (RIX) Tertiary Treatment Facility in the City of Colton. This facility has a capacity of 34 mgd (38,085 afy) and is jointly operated by the City of Colton and SBMWD, under the sole ownership of the City of San Bernardino. In 2005, the RIX facility treated about 36,948 acre-feet of wastewater. About 81.8 percent, or 30,230 acre-feet of this wastewater came from the WRP. About 16,000 afy of the treated effluent from RIX is used to maintain water flows in the Santa Ana River as part of the agreement SBVMWD has with downstream agencies. The remainder (20,948 afy) has potential for water reuse.

Recently, SBMWD has begun using recycled water from the RIX facility within its service area. Most recycled water use from the RIX facility is infeasible because of the economic costs of transporting water from the RIX facility to the service area. The RIX facility is about 300 feet lower than the lowest pressure zone (1,249 feet), and the cost to transfer water up this incline is high. However, approximately 0.75 mgd or 840 afy of water treated at RIX is now being used at the San Bernardino Municipal Golf Course and the California Department of Transportation land adjacent to Interstate 210 (I-210) (UWMP 2005).

The 2005 UWMP has determined that there is potential to increase recycled water use within the service area by about 2.25 mgd, or 2,519 afy. This would most likely require the placement of satellite reclamation and distribution facilities within the SBMWD service area.

Water Supply

The BHG Basin

The BHG Basin is the main water supply for the SBMWD. The 5-million-acre-foot BHG Basin has 1.5 million acre-feet of extractable water. It is recharged naturally through precipitation and surface water streams, as well as through the rerouting of streams into percolation basins and with imported water purchased by SBMWD. The management of water extractions from the BHG Basin is under the direction of SBVMWD. Table 5.15-2 shows the annual and cumulative change in the basin's groundwater storage since the baseline year (1934). It also shows the amount of water SBMWD has withdrawn from 2000 through June of 2009. SBMWD used 57,237 acre-feet of water in 2008 and 24,347 by June 2009 (Litchfield 2009).

Table 5.15-2
Withdrawals from the BHG Basin and Cumulative Change in Groundwater Storage (in afy)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
SBMWD Usage										
Amount of BHG Basin Water Used by SBMWD	47,487	45,676	48,504	42,850	48,311	47,301	57,391	59,594	57,237	24,347[1]
Percent of Total Water Supply for SBMWD[2]	100%	100%	100%	100%	100%	99.5%	97.6%	98.5%	99.4%	NA
Change in BHG Basin										
Annual Change in BHG Basin Storage[3]	(115,824)	(71,048)	(110,929)	(29,706)	(80,017)	(223,178)	(27,539)	(88,767)	(35,158)	NA
Cumu-lative Change in BHG Basin Storage[3]	(134,609)	(205,657)	(316,586)	(346,292)	(426,309)	(203,131)	(230,670)	(319,437)	(354,595)	NA

Source: 2005 UWMP; Litchfeld 2009; SBVMWD 2009a.
[1] As of June 2009.
[2] Other sources of water include recycled water from the RIX Facility and exchanges with the East Valley Water District.
[3] Indicates the change from base year (1934). Changes in groundwater levels result from changes in annual precipitation, total withdrawals from basin, and changes to natural and artificial recharge. Parentheses indicate a negative change.

BHG Basin Recharge

The BHG Basin is recharged with surface water and imported water. Surface water recharge comes from flows down the San Gabriel and San Bernardino mountains and precipitation. The San Bernardino Department of Water Conservation monitors the recharging of the BHG Basin. Average collection of rainfall and surface water to recharge the basin is 65,000 afy. Imported water is purchased by SBVMWD from the State Water Project (SWP). According to the California Department of Water Resources (CDWR), 102,600 afy of water from the SWP is contracted to SBVMWD. SBVMWD is able to use this water to recharge the BHG Basin. Drought conditions and environmental concerns with endangered species (the delta smelt) habitat preservation in the Bay Delta, however, have reduced the actual allocation amount from the SWP. For 2009, SBVMWD was allocated 41,040 afy, a 60 percent reduction (CDWR 2009a).

Legal Cases Adjudicating Allocations and Withdrawals from the San Bernardino Basin Area

Withdrawal allocations are primarily governed by the judgment of *Western Municipal Water District et al. v. East San Bernardino County Water District et al.* (the Western Judgment). Other judgments followed the Western Judgment, including the judgments from *City of San Bernardino v. City of Riverside, Orange County Water District v. City of Chino* (1969; Orange County Judgment), and *City of San Bernardino v. United States of America* (Consent Decree).

The Western Judgment gives SBVMWD responsibility over ensuring that water quantities are available over the basin safe yield of 167,238 afy within its jurisdictional boundaries (SBMWD 2005). The total safe yield of the BHG Basin is 232,100 afy (SBVMWD 2009a). Individual agencies within the SBVMWD service area, such as SBMWD, are not given allocations by this judgment, but the amount of water they receive from the basin is monitored by SBMVWD. The *City of San Bernardino v. City of Riverside* (1922) judgment and subsequent amendments set the maximum amount of water that can be pumped in the most prolific portion of the San Bernardino Basin and, to some extent, limits the geographic areas in which pumping may occur. The Orange County Judgment ultimately determined the amount of water (42,000 afy) to be delivered from the northern to southern portion of the Santa Ana River watershed to ensure a base flow rate. SBVMWD is responsible for 16,000 afy of this delivery, all of which comes from the RIX Facility in Colton. The Consent Decree provides judgment related to the Newmark Groundwater Contamination Superfund Site. The City of San Bernardino must develop a groundwater management plan to regulate the amount of pumping in the management area of the Newmark site as well as spreading activities.

UWMP-Projected Supply and Demand

Service Area

Supplies for potable and recycled water are estimated in the 2005 UWMP. SBMWD would have a total 73,504 afy of water from the BHG Basin and the RIX Facility by year 2025, as shown in Table 5.15-3. This supply is determined by the amount of water that would be provided by existing and planned water projects during normal weather conditions.

Table 5.15-3
Projected Water Supplies for SBMWD (Normal Year) without Project (afy)

Supply Source	*2010*	*2015*	*2020*	*2025*
BHG Basin	53,940	61,039	66,850	72,664
RIX Facility	840	840	840	840
Total	**54,780**	**61,879**	**67,690**	**73,504**

Source: 2005 UWMP.
SBMWD also transfers a small quantity of water to the East Valley Water District to blend with the EVWD's supply water to meet safe drinking water standards. In return EVWD transfers water back to SBMWD at a 2.5:1 ratio to compensate for energy and other costs of transferring the water. This water is not included in the projected water supply because projections are not known.

Normal, Dry, and Multiple Dry Year Projections

The 2005 UWMP projects the reliability of water for future years based on varying weather conditions: with normal weather conditions, with a single-dry year, and with multiple dry years. The demands for water are based on buildout conditions in 2053 (364,600 afy). Table 5.15-4 presents the projected water supply and demand through year 2025 for normal weather conditions and for a single dry year condition. If a single dry year were to occur, in this case in 2025, the water supplies would shortfall by 11 percent, which represents a

10 percent reduction in demand. In order to adapt to conditions such as this, SBMWD would need to increase conservation and public education efforts. By doing so, SBMWD has indicated that they would be able to supply water to all customers in these conditions.

Table 5.15-4
Projected Water Supply and Demand for Normal and Single Dry Conditions without Project

	2010	2015	2020	2025
Normal Year				
Total Demand	54,780	61,879	67,690	73,504
Percent of 2005	115%	130%	142%	155%
Total Supply	54,780	61,879	67,690	73,504
Percent of 2005	115%	130%	142%	155%
Difference (Supply minus Demand)	0	0	0	0
Difference as Percent of Supply	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%
Single Dry Year				
Total Demand	54,780	61,879	67,690	73,504
Percent of 2005	115%	130%	142%	155%
Total Supply	54,780	61,879	67,690	66,154
Percent of 2005	115%	130%	142%	155%
Difference (Supply minus Demand)	0	0	0	7,350
Difference as Percent of Supply	0%	0%	0%	11%
Difference as Percent of Demand	0%	0%	0%	10%

Source: 2005 UWMP.

Different scenarios for multiple dry years are shown in Tables 5.15-5 through 5.15-7. The ability for SBMWD to accommodate dry water years is dependent on the activities of SBVMWD, such as the amount of SWP water they have reserved and the amount of water allocated to SBVMWD and the water agencies within its service area (including SBMWD) from the BHG Basin. Depending on when the multiple dry years would occur, the impacts on water supply and demand would vary. If the multiple dry years were to occur between 2011 and 2015 or between 2016 and 2020, SBMWD would be able to accommodate drought years by depending on SWP reserves of SBVMWD and groundwater supplies in the BHG Basin. Shortfalls would occur after 2022 because the projected population within the service area would be high enough to create a demand for water that exceeds the dry year condition supplies. As shown in Table 5.15-7, multiple dry years between 2022 and 2025 would result in supply levels dropping by 700 afy in 2022 to 7,350 afy in 2025.

Table 5.15-5
Multiple Dry Year Conditions for 2011 through 2015 without Project

	2011	2012	2013	2014	2015
Total Demand	56,200	57620	59,039	60,459	61,879
Total Supply	56,200	57,620	59,039	60,459	61,879
Difference (Supply minus Demand)	0	0	0	0	0
Difference as Percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Source: UWMP 2005.

Table 5.15-6
Multiple Dry Year Conditions for 2016 through 2020 without Project

	2016	2017	2018	2019	2020
Total Demand	63,041	64,203	65,366	66,528	67,690
Total Supply	63,041	64,203	65,366	66,528	67,690
Difference (Supply minus Demand)	0	0	0	0	0
Difference as Percent of Supply	0%	0%	0%	0%	0%
Difference as Percent of Demand	0%	0%	0%	0%	0%

Source: UWMP 2005.

Table 5.15-7
Multiple Dry Years for 2021 through 2025 without Project

	2021	2022	2023	2024	2025
Total Demand	68,853	70,016	71,178	72,341	73,504
Total Supply	68,853	69,315	68,331	67,277	66,154
Difference (Supply minus Demand)	0	-700	-2,847	-5,064	-7,350
Difference as Percent of Supply	0%	-1%	-4%	-8%	-11%
Difference as Percent of Demand	0%	-1%	-4%	-7%	-10%

Source: UWMP 2005.

Assumptions Made for Spring Trails Project Site in 2005 UWMP

The Spring Trails site was included in the 2005 UWMP with a water demand based on 2005 City of San Bernardino General Plan land uses (Litchfield 2009). The total projected water demand in opening year 2013 would be 59,039 afy, to be met by available water supply of 59,039 afy.[1] The Spring Trails area is designated as Residential Estate (RE) in the 2005 General Plan, which has a water demand rate of 0.93 gallons per minute (gpm) per acre. This demand rate is based on the actual demand of 388 (out of approximately 400) existing accounts in SBMWD's service area that fall into the RE land use designation at the time of the 2005 UWMP (Nevarez 2009a). The demand rate of 0.93 and an 85 percent buildout assumption were used to find the total demand of areas designated as RE; this total demand is reflected in the 2005 UWMP. Table 5.15-8 shows the demand of the project site as it was assumed in the 2005 UWMP. By 2025, according to General Plan projections, the buildout on the Spring Trails site would cover 300 acres, demanding an average of 450 acre-feet of water per year.

Table 5.15-8
2005 UWMP Assumptions for the Project Site (without Project)

Project Site Area	85% Buildout Assumption	Demand Rate for RE Land Use	Total Water Demand for Project Site
353 acres	300 acres	0.93 gpm/ac	328 gpm (450 afy)

Source: City of San Bernardino 2005a; Litchfield 2009.

[1] Based on a forecasted amount between the 2010 and 2015 supply projections in the 2005 UWMP.

Assumptions Made for Spring Trails Project Site in 2010 UWMP (with Project)

The proposed project's projected water demand has been taken into account in the 2010 San Bernardino Valley Regional UWMP, which includes the supply and demand for SBVMWD, East Valley Water District, City of Loma Linda, City of Redlands, West Valley Water District, Yucaipa Valley water District, and the City of Colton. At the time this DEIR was written, the 2010 San Bernardino Valley Regional UWMP had been adopted by the SBVMWD Board of Directors but it had not yet been adopted by CDWR.

Total average water use in the SBMWD service area is projected to reach 52,474 afy in 2015 and increasing to 55,653 in 2035. The projected average water supply is projected to reach 68,639 afy in year 2015 and 100,164 afy in year 2035. Water supply would adequately meet water demands within the SBMWD service area. The 2010 San Bernardino Valley Regional UWMP assumes the project site would use an average 530 afy (SBVMWD 2011).

Indications and Planning for Long-Term Water Supply in California

On June 5, 2008, Governor Arnold Schwarzenegger declared a statewide drought and directed state agencies and departments to take specified actions. Governor Schwarzenegger proclaimed a state of emergency on February 27, 2009, and directed all state government agencies to utilize their resources, implement a state emergency plan, and provide assistance for people, communities, and businesses impacted by the drought. Spring 2008 marked the fourth driest spring on record, coming off of a record dry year.

On April 20, 2011, the California Department of Water Resources released the most recent statement on SWP allocations to water contractors in California. At this time, total allocations are 3,337,701 acre-feet of water per year, 80 percent of the total requested amount (4,172,126 afy). This allocation percentage may be revised based on hydrological conditions throughout the remainder of the year.

Southern California faces the challenge of satisfying its water requirements and securing its firm water supplies. 2009 marked the third year of drought for California. Water year 2007–2008 resulted in 63 percent of average annual precipitation and water year 2008–2009 resulted in 72 percent of average annual precipitation. This caused drastic reductions of water deliveries through the SWP, especially to central and southern California, and can be reflected in the recent conditions of the state's major reservoirs. Table 5.15-9 shows water levels during the recent drought and current water levels of the state's reservoirs in comparison to their capacity and historical averages. Since 2009, annual precipitation has increased and is currently at 138 percent of annual averages (CDWR 2011a).

Table 5.15-9
California Reservoir Conditions

Reservoir	Capacity (TAF)	Current Level as Percentage of Capacity		Current Level as Percentage of Historic Average	
		2009 (Drought)	2011 (Normal)	2009 (Drought)	2011 (Normal)
Trinity Lake	2,448	48%	97%	58%	110%
Shasta Reservoir	4,552	52%	97%	71%	116%
Lake Oroville	3,538	45%	99%	60%	117%
Folsom Lake	977	65%	94%	87%	109%
New Melones	2,420	51%	91%	84%	146%
Don Pedro Reservoir	2,030	81%	NA	106%	NA
Exchequer Reservoir	1,025	58%	87%	85%	120%
Millerton Lake	520	87%	76%	132%	94%
San Luis Reservoir	2,033	18%	91%	35%	126%
Pine Flat Reservoir	1,000	38%	87%	69%	121%
Pyramid Lake	171	97%	96%	103%	102%
Castaic Lake	325	74%	96%	87%	109%

Source: CDWR 2009b; CDWR 2011
TAF = Thousand acre feet.

Other factors aside from precipitation affect water supply reliability. Delta pumping restrictions due to the endangered delta smelt, climate change, and levee vulnerability to floods and earthquakes have increased uncertainty regarding the reliability of water sources. Continued population and economic growth correspond to increased water demands in the region, putting an even larger burden on local supplies. Significant areas affecting delivery reliability are discussed below.

Supply Limitation from Northern California: The Delta Smelt

The delta smelt is a federally and state-listed threatened fish species that inhabits the estuaries of the Bay-Delta region. In May 2007, a federal court invalidated the biological opinion issued by the US Fish and Wildlife Service for operations of the SWP and Central Valley Project with regard to the Delta smelt. On August 31, 2007, the federal court ordered interim operating rules until a new biological opinion is approved. Under the ruling, operational limits on delta pumping are in place from the end of December, when fish are about to spawn, until June, when the smelt migrate. The federal ruling and protective measures will be in effect until the biological opinion is rewritten. According to the Metropolitan Water District (MWD), the protective measures will have an effect on future SWP operations and supplies. According to the 2007 MWD Integrated Resource Plan Implementation Report, based on initial estimates, MWD could see as much as 22 percent reduction, on average, of its SWP supplies in 2008 and beyond. In addition to the interim remedies and the proceedings to address immediate environmental concerns, the Delta Vision process and the Bay-Delta Conservation Plan process are defining long-term solutions for the Delta. The Final Bay-Delta Conservation Plan is expected to be completed by 2013 (BDCP 2011). Prior to the court decision, MWD's board approved a Delta Action Plan in May 2007 that described short-, mid- and long-term conditions and the actions to mitigate potential supply shortages and to develop and implement long-term solutions.

Climate Change and its Effects on California Water Supply

The CDWR released the report, "Progress on Incorporating Climate Change into Management of California's Water Resources" (July 2006), considering the impacts of climate change on the state's water supply. CDWR emphasizes that "the report represents an example of an impacts assessment based on four scenarios defining an expected range of potential climate change impacts." CDWR's major goal is to extend the

analysis for long-term water resource planning from "assessing impacts" to "assessing risk." The report presents directions for further work in incorporating climate change into the management of California's water resources. Emphasis is placed on associating probability estimates with potential climate change scenarios in order to provide policy makers with both ranges of impacts and the likelihoods associated with those impacts. DWR's report acknowledges "that all results presented in this report are preliminary, incorporate several assumptions, reflect a limited number of climate change scenarios, and do not address the likelihood of each scenario. Therefore, these results are not sufficient by themselves to make policy decisions."

The potential climate change impacts on the Colorado River Basin are included in the 2006 CDWR report. The Colorado River depends mainly on annual snow melt as a water supply. An increase of 1.1 to 2.0 degrees Celsius is expected in the basin by 2050, causing a peak in snowmelt runoff 5 to 25 days earlier. This is not seen as a critical concern for the river's yield. The change in amount of precipitation would be a greater concern affecting water supplies from the river basin. A large percentage (85 percent) of the upper basin runoff comes from high elevations, suggesting that changes in mountain temperature and precipitation would have substantial effects on the river's annual water yield. An increase in temperature would also increase evaporation rates in reservoirs and evapotranspiration rates in plants along the river and its tributaries. Along with increasing water demand, these potential reductions in water supply from the Colorado River indicate that responsive and smart water planning would be needed in the future for the Colorado River basin and agencies that depend on it for potable and nonpotable water.

In April 2009, CWDR released the report "Using Future Climate Projections to Support Water Resources Decision Making in California," which projects future water supply and demand conditions for the SWP and the Central Valley Project, based on the potential impacts from climate change. Predictions disclosed in this report for the 21st century are based on the conversion of global climate models (GCM) to regional models specific for California. They take into consideration changes in sea level, changes in stream flow, the amount of water demanded by agriculture and outdoor water uses, and predictions in climate variability (CDWR 2009b). Based on the conversions of GCMs to California models, future water supply scenarios indicate that annual Bay Delta exports would reduce by approximately 7 to 10 percent by the middle of the 21st century and by 21 to 25 percent by the end of the century; reservoir carryover storage would reduce by 15 to 19 percent by midcentury and by 33 to 38 percent by the end of the century; and annual groundwater pumping is likely to increase for most California localities (CDWR 2009b). Again, an increase in water demand in combination with a reduction in SWP and reservoir supplies indicates a strong need for smarter water management and planning by jurisdictions in southern California, including SBMWD.

Water Supply Management and Planning

Integrated Regional Water Management Plan for the Upper Santa Ana River Watershed

SBVMWD is the lead water agency directing the development of IRWMP, with active participation from SBMWD and other water agencies and stakeholders. The CDWR has granted a fund to SBVMWD to complete this plan. When completed, the plan would guide water management for cities and communities from Big Bear Lake and the headwaters of the Santa Ana River to the Riverside Narrows (approximately 824 square miles), covering portions of both San Bernardino and Riverside counties. It would coordinate the existing planning documents and legal documents governing the management of groundwater and surface water within SBVMWD's service area with other plans for the region, including the Santa Ana River Watershed Project Authority regional plan (SBVMWD 2007; SBMWD 2005).

The Drought Water Bank

During the recent drought years, the CDWR established a Drought Water Bank to help facilitate the exchange of water throughout the state and assist water suppliers like MWD and SBVMWD at risk of experiencing drought-related shortages and requiring supplemental supplies to meet anticipated demands. CDWR purchased water from willing sellers upstream of the Sacramento-San Joaquin Delta and transferred it to public and private water suppliers that were at risk of experiencing water shortages in 2009. In 2010, CDWR adopted a drought contingency plan, to be updated every five years, to improve drought response and coordination with local agencies (CDWR 2010).

Principles Governing CEQA Analysis of Water Supply

In *Vineyard Area Citizens for Responsible Growth, Inc., v. City of Rancho Cordova* (February 1, 2007), the California Supreme Court articulated the following principles for analysis of future water supplies for projects subject to CEQA:

- To meet CEQA's informational purposes, the EIR must present sufficient facts to decision makers to evaluate the pros and cons of supplying the necessary amount of water to the project.

- CEQA analysis for large, multiphase projects must assume that all phases of the project will eventually be built and the EIR must analyze, to the extent reasonably possible, the impacts of providing water to the entire project. Tiering cannot be used to defer water supply analysis until future phases of the project are built.

- CEQA analysis cannot rely on "paper water." The EIR must discuss why the identified water should reasonably be expected to be available. Future water supplies must be likely, rather than speculative.

- When there is some uncertainty regarding availability of future water supply, an EIR should acknowledge the degree of uncertainty, include a discussion of possible alternative sources, and identify the environmental impacts of such alternative sources. Where a full discussion still leaves some uncertainly about the long-term water supply's availability, mitigation measures for curtailing future development in the event that intended sources become unavailable may become a part of the EIR's approach.

- The EIR does not need to show that water supplies are definitely assured because such a degree of certainty would be "unworkable, as it would require water planning to far outpace land use planning." The requisite degree of certainty of a project's water supply varies with the stage of project approval. CEQA does not require large projects, at the early planning phase, to provide high degree of assurances of certainty regarding long-term future water supplies.

- The EIR analysis may rely on existing urban water management plans, as long as the project's new demand was included in the water management plan's future demand accounting.

- The ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project.

5.15.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.

5.15.1.3 Environmental Impacts

The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to water distribution facilities in the City. This analysis can be applied to either scenario to determine impacts.

IMPACT 5.15-1: SPRING TRAILS WOULD USE 529 ACRE-FEET PER YEAR AND IS INCLUDED IN THE 2010 SAN BERNARDINO REGIONAL URBAN WATER MANAGEMENT PLAN PROJECTIONS. THE PROJECT WOULD REQUIRE THE CONSTRUCTION OF ADDITIONAL WATER DISTRIBUTION INFRASTRUCTURE, INCLUDING RESERVOIRS, PUMP STATIONS, AND WATER MAINLINES THAT ARE NOT PART OF A CAPITAL IMPROVEMENTS PLAN. [THRESHOLDS U-2 AND U-4]

Impact Analysis: The water supply and demand analysis for this section is based on the research included in the "Water Distribution Analysis for Tentative Tract Map 15576," prepared for the SBMWD in March 2010.

The *Water Distribution Analysis for Tentative Tract Map 15576* used the following information and demand factors from the 2007 Water Master Plan to determine water use:

- Residential Estate (<2.05 du/ac) – 0.93 gpm per acre
- Residential Low (2.05 to 3.8 du/ac) – 2.08 gpm per acre
- Residential Suburban (3.8 to 6.75 du/ac) – 2.68 gpm per acre
- Residential Urban (6.75 to 11.5 du/ac) – 3.61 gpm per acre

Projected Water Demands

In the *Distribution Analysis*, water demand for the project site is based on average density over the entire project site area (352.8 acres). Considering the overall Spring Trails development of 307 residential dwelling units on 352.8 acres of land, the average parcel size for the entire development is estimated at 0.87 units per acre (SBMWD 2010). Proposed development plans indicate that individual parcels would range in size from 10,000 to over 600,000 square feet, averaging 27,337 square feet or 0.62 acres. Hence, this development would fall under the Residential Estate category with an average water demand of 0.93 gpm per acre. Based on a total development of 353 acres, rather than 85 percent buildout under the existing General Plan, the average annual water demand is estimated at 328 gpm, or 529 afy, as shown in Table 5.15-10.

Table 5.15-10
Project Water Demand

Total Acres	Demand Rate for RE Land Use	Total Water Demand for Project Site
353	0.93 gpm/acre	529 afy

Source: SBMWD 2010.

As shown in Table 5.15-8, the assumptions made by the City's General Plan for residential land uses of the project site were used in determining water demand in the 2005 UWMP. The updated 2010 UWMP for SBMWD has been incorporated into the San Bernardino Valley Regional UWMP. This regional UWMP also includes the supply and demand for SBVMWD, East Valley Water District, City of Loma Linda, City of Redlands, West Valley Water District, Yucaipa Valley water District, and the City of Colton. At the time this DEIR was written, the 2010 San Bernardino Valley Regional UWMP had been adopted by the SBVMWD Board of Directors but it had not yet been adopted by CDWR.

The proposed project's projected water demand has been taken into account in the 2010 San Bernardino Valley Regional UWMP. The same water distribution analysis prepared for this DEIR was also used to assume water demand of the proposed project in the 2010 San Bernardino Valley Regional UWMP (an average yearly demand of 530 acre-feet). Total average water use in the San Bernardino Valley region is projected to reach 52,474 afy in 2015 and increasing to 55,653 in 2035. The projected average water supply is projected to reach 68,639 afy in year 2015 and 100,164 afy in year 2035, indicating a surplus in water supply for the SBMWD service area (SBVMWD 2011).



Onsite Water Storage Requirements

Maximum daily demand flows can be used to determine the amount of onsite water storage needed for the project. During days of high demand and peak hours, the water demand for the site would increase. Between average days and high demand days, the gpm rate would increase by a factor of 1.73, resulting in a total rate of 568 gpm on high demand days. Between high demand days and peak hours, the gpm rate would increase by a factor of 2, resulting in a peak hour demand rate of 1,136 gpm.

Table 5.15-11 shows the amount of water storage that would be needed to meet maximum daily demand flows, emergency storage, operational storage, and fire flow requirements. Since each pressure zone would have a reservoir, the storage requirements for each reservoir are shown in comparison to the proposed capacity of the reservoirs.

Table 5.15-11
Onsite Water Storage Facilities

Pressure Zone	2,300	2,500	2,700	3,000	Total
Units	**11**	**24**	**138**	**136**	**309**
Maximum Daily Demand (173% of average gpm/ac)	20 gpm	44 gpm	254 gpm	250 gpm	568
Emergency Storage[1]	28,800 glns	63,360 glns	365,760 glns	360,000 glns	817,920
Operational Storage[2]	7,200 glns	15,840 glns	91,440 glns	90,000 glns	204,480
Fire Flow Storage[3]	360,000 glns	360,000 glns	360,000 glns	360,000 glns	1,080,000
Total Storage Required	**396,000 glns**	**439,200 glns**	**817,200 glns**	**810,000 glns**	**2,102,400**
Storage Provided by Reservoirs Serving the Project Site (in 2007 SBMWD Master Plan)	**4,000,000 glns**	**2,500,000 glns**	**900,000 glns**	**900,000 glns**	**8,300,000**

Source: SBMWD 2010.
glns = gallons; gpm = gallons per minute; ac = acre
[1] Equivalent to one full day of maximum demand
[2] Equivalent to 25% of one full day of maximum demand
[3] Fire flow required of 1,500 gpm for four-hour duration

Water Delivery Systems

Offsite Improvements

Spring Trails would require the construction of new water supply infrastructure. SBMWD has begun planning for infrastructure expansion in the Verdemont area that would accommodate Spring Trails. This expansion, the Verdemont infrastructure improvements, would occur in two phases and is needed to serve the 2,300-foot pressure zone.

Phase I Improvements

- **Palm Avenue booster pump station:** This station would have a total capacity of 10,343 gpm and would be able to pump water from the 1,720-foot pressure zone to the 1,916-foot pressure zone. Individual pump capacity would be 3,500 gpm.

- **Magnolia Avenue booster pump station:** This station would have a capacity of 6,737 gpm and would be able to pump water from the 1,916-foot pressure zone to the 2,100-foot pressure zone. Individual pump capacity would be 2,600 gpm.

- **24-inch Palm Avenue connector:** This would be a transmission line in the 1,916-foot pressure zone (Litchfield 2009, Nevarez 2009b).

These improvements were analyzed for environmental impacts in 2007. A mitigated negative declaration was approved by the SBMWD Board of Water Commissioners in April of 2007. Funding for these improvements was approved by the City, is included in SBMWD's Capital Improvements Program, and is incorporated into the 2009–2010 City budget (Litchfield 2009).

Phase II Improvements

The second phase for the Verdemont infrastructure improvements would connect the 2,100-foot pressure zone to the 2,300-foot pressure zone and is necessary to bring water supply to the Spring Trails site.

- **2300 zone east reservoir:** This reservoir, to be located adjacent to the Meyers Canyon Reservoir, approximately a quarter mile north of Perrin Drive, would have a capacity of 2 million gallons.

- **2300 zone east 4.8 mgd pumping station:** This pumping station would have a capacity of 3,333 gpm and would pump water from the 2100 to 2300 pressure zone.

- **2300 zone east 20-inch transmission main:** This would be a transmission main in the 2300 zone.

These improvements would be required for supplying water and maintaining appropriate water storage for the Spring Trails project. Currently, there is no funding planned for these improvements (Litchfield 2009).

Onsite Improvements

In addition to the proposed Verdemont infrastructure improvements, the Spring Trails plan includes onsite infrastructure improvements to be completed by the developer:

- **3000 zone reservoir:** This reservoir would be in the northeastern portion of the site and have 900,000 gallons of capacity.

- **2700 zone pumping station:** This would be a 1,200-gpm pump that would pump water between the 2,700-foot and 3,000-foot pressure zone.

- **2700 zone reservoir:** This reservoir would be in the eastern portion of the site and have 900,000 gallons of capacity.

- **2500 zone pumping station:** This would be a 1,400-gpm pump that would pump water between the 2,500-foot and 2,700-foot pressure zones.

- **2500 zone reservoir:** This reservoir would be in the southeastern portion of the site and have 2,000,000 gallons of capacity.

All offsite and onsite improvements are depicted in Figure 3-10, *Conceptual Water Plan, Area*, and Figure 3-11, *Conceptual Water Plan, Onsite Water Mains*, in Chapter 3, *Project Description*. The onsite improvements would need to be constructed and funded by the developer prior to the development of the site. The pipelines within the development are considered distribution lines for all practical purposes. The pipelines that connect pump stations to the reservoirs would be a minimum of 20 inches in diameter. All looping lines would be 12 inches in diameter and other distribution pipelines would be 8 inches in diameter.

The Phase I and Phase II improvements would need to be included in the SBMWD Capital Improvements Plan (CIP) and incorporated into the City's budget. Phase I improvements were included in the 2009–2010 City Budget, but the Phase II improvements were not. Funding for the offsite improvements in the CIP would come from developer impact fees, which would be paid in part (fair share) by the developer.

All the planned water infrastructure improvements that would be necessary to serve Spring Trails are summarized in Table 5.15-12. The existing and planned infrastructure would have enough capacity to support the planned development.

Table 5.15-12
Planned Water Infrastructure Projects

Planned Structure	Capacity	Funding
Verdemont Infrastructure Improvements – Phase 1		
Palm Avenue booster pump station	16,683 afy (10,343 gpm)	Yes, in 2009–2010 City budget
Magnolia Avenue booster pump station	10,867 afy (6,737 gpm)	Yes, in 2009–2010 City budget
24-inch Palm Avenue connector	NA	Yes, in 2009–2010 City budget
Verdemont Infrastructure Improvements – Phase 2		
2300 zone east reservoir	12.28 af (4 million gal)	No present funding
2300 zone east pump station	2,940 afy (2,048 gpm)	No present funding
2300 zone east 20-inch transmission main	NA	No present funding
Onsite Planned Infrastructure		
2500 zone reservoir	7.67 af (2.5 million gal)	Would be funded by developer
2700 zone reservoir	2.76 af (0.9 million gal)	Would be funded by developer
3000 zone reservoir	2.76 af (0.9 million gal)	Would be funded by developer
2700 zone pump station	1,936 afy (1,750 gpm)	Would be funded by developer
2500 zone pump station	3,232 afy (2,004 gpm)	Would be funded by developer
Onsite 12-inch transmission mains	NA	Would be funded by developer
Total Existing Reservoir Capacity in Verdemont (see Table 5.15-1)	37.82 af (12.3 million gal)	
Total Planned Reservoir Capacity (Onsite)	25.54 af (8.3 million gal)	
Total Reservoir Capacity (Planned and Existing)	**63.36 af (20.6 million gal)**	

Source: Litchfield 2009; Nevarez 2009a; Spring Trails Specific Plan.
af = acre-feet
afy= acre-feet per year
gpm = gallons per minute

Fire Flow Analysis

Fire flow for Spring Trails would need to meet a requirement of 1,500 gpm with a four hour duration, as indicated by the San Bernardino Fire Department. SBMWD would be able to meet this demand once the proposed infrastructure in the 2,300-foot zone is completed (Litchfield 2009). The same pipelines that would supply the site with domestic water would also be used for fire suppression through connections with fire hydrants.

Reliability of Water Supplies

SWP Allocations

2009 was the third consecutive drought year for California, and the impacts were seen through changes to water allocations of SWP water. In April 2011, CDWR increased water allocations to 80 percent of the requested amounts (CDWR 2011). SBVMWD, the SWP contractor for the San Bernardino Valley, is included on this list of contractors and should receive 82,080 acre-feet in 2011, 80 percent of its entitlement. Projected SWP reliability throughout future years is uncertain. Ultimate contract amounts total 4.2 million afy, but yearly deliveries are only a fraction of this amount. SBVMWD and other water agencies reliant on some portion of SWP water should reduce their dependence on this source of water and focus on alternative technologies, conservation efforts, and storage activities to guarantee water supply in the future.

BHG Basin Trends

The BHG Basin is the most important source of water for the SBMWD. Approximately 1.5 million acre-feet of groundwater in the basin is extractable. In 2008, the cumulative change in groundwater storage since 1934

was a negative 354,595 acre-feet. Annual changes in storage capacity are shown in Table 5.15-2. The last year the basin had a positive cumulative change was 1998 (74,083 afy).

Onsite Water Conservation

Chapter 5 of the Spring Trails Specific Plan includes a number of design guidelines and practices that would improve onsite water conservation. Some of these guidelines and practices include:

- Required diversion of stormwater runoff into onsite detention basins to enable recharge
- Recommended collection of rainwater and additional stormwater runoff by diverting runoff to pervious surfaces or bioswales to reduce unnecessary runoff
- Required use of high efficiency, xeriscape irrigation systems to reduce the amount of water devoted to landscaped areas
- Includes bubbler irrigation and low-angle, low-flow nozzles on sprayheads
- Required installation of properly programmed EvapoTranspiration-based controllers on homeowners' properties with the appropriate information for the homeowners
- Required installation of motion sensors and other similar irrigation technology to ensure that landscaping is watered only as needed
- Required planting of plant species that are drought tolerant, heat resistant, and hardy
- Prohibition of the use of large turf areas in landscaping by substituting water-conserving native groundcovers or perennial grasses, shrubs, and trees
- Recommended construction of trails with pervious materials such as earth or decomposed granite.
- Required grouping of plants with similar water requirements together, a technique known as hydrozoning (reference is available from the California Department of Water Resources)
- Recommended mulching of planting beds and apply compost and environmentally friendly fertilizers to promote healthy topsoil, maximize plant growth, reduce plant replacement, and reduce the need for longer or more frequent irrigation run times

The following practices are recommended for buildings:

- Required installation of water-efficient faucets and appliances in residences
- Required installation of sensor-operated faucets in nonresidential buildings
- Recommended use of toilets that use less that 1.6 gallons per flush, waterless urinals in nonresidential buildings, and faucets and showerheads that use less than 2.5 gallons per minute

The implementation of these practices would help to reduce the amount of water by reducing the water used by each residence and through controlling water loss in public areas by using water-smart landscaping and reclamation techniques.

5.15.1.4 Cumulative Impacts

Cumulative impacts would occur if the Spring Trails project, in combination with other planned or projected urban development within the service area of SBMWD, would create additional need for infrastructure expansion and/or improvements, or create a cumulative demand for water in the SBMWD service area. The buildout of San Bernardino and its sphere of influence would increase the number of residential units to 95,644 and the amount of nonresidential square feet to 203,604,932. Development in the Verdemont area would use some of the same water distribution infrastructure as Spring Trails. Phases I and II of the improvements are meant to serve future growth in this area. The onsite infrastructure improvements would not be used by adjacent development. This analysis of cumulative impacts to water distribution facilities is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.15.1.5 Existing Plans, Programs, and Policies

San Bernardino Municipal Code, Chapter 13.24, *Water Supply System*

San Bernardino Municipal Water Department Capital Improvements Plan

5.15.1.6 Level of Significance Before Mitigation

Without mitigation, the following impact would be potentially significant:

- Impact 5.15-1: Spring Trails would require the construction of additional off-site water distribution infrastructure, including reservoirs, pump stations, and water mainlines that are not part of a CIP.

5.15.1.7 Mitigation Measures

15-1 Completion of the Phase II Verdemont water delivery infrastructure improvements shall be verified by the SBMWD prior to issuance of occupancy permits for Spring Trails. The offsite improvements as shown in Table 5.15-13, include the east reservoir, east pump station, and east 20-inch transmission main. The project applicant shall contribute fair-share funding for the improvements through development impact fees or through an alternate financial arrangement with the SBMWD. A funding and phasing program for the improvements shall be in-place (e.g., Capital Improvements Program) or negotiated with the project applicant prior to issuance of building permits.

5.15.1.8 Level of Significance After Mitigation

Mitigation measures 15-1 and 15-2 would reduce the project's significance related to water supply entitlements to a less than significant level.

5.15.2 Sewer Services and Site Drainage

5.15.2.1 Environmental Setting

The proposed Spring Trails project site would be served by the City of San Bernardino Public Works Department (Public Works Department) upon annexation of the site. The Public Works Department has a Wastewater Collection System Master Plan (2002) that provides policies that guide the design and

construction of wastewater collection systems. Project engineers are in charge of designing systems in accordance to this master plan.

Residents of the 26.4-acre annexation area currently use onsite septic systems to dispose of wastewater. Upon annexation into the City of San Bernardino, wastewater would continue to be disposed of in this manner until the City expands sewer facilities to this area in the future.

Wastewater Treatment and Collection

The nearest sewer line to the proposed project site is an eight-inch diameter sewer line at the intersection of Meyers Road and Little League Drive to the southeast of the site. From here, wastewater drains east on West Little League Drive to Kendall Drive, then to 40th Street, continuing to Mountain View Avenue, and then to Waterman Avenue before emptying into the 33 mgd capacity Margaret H. Chandler Water Reclamation Plant (WRP).

The WRP is a secondary treatment facility serving a population of over 185,000, including the cities of San Bernardino and Loma Linda, the East Valley Water District customers (some of which are within the City of San Bernardino), the San Bernardino International Airport, Patton State Hospital, and parts of San Bernardino County. The WRP has been owned and operated by SBMWD since 1973, treating both residential and industrial wastewater. The WRP treatment process includes screening, grit removal, primary clarification, activated sludge (biological oxidation) with nitrification and denitrification, and secondary clarification, ensuring all water discharged into the Santa Ana River is properly treated. A portion of this water is then sent to the RIX Facility to be treated to tertiary standards and used as recycled water for landscaping irrigation or pumped into the Santa Ana River to meet flow rate standards in the lower Santa Ana River Watershed. Table 5.15-13 shows the projected average wastewater collection of the WRP and the RIX Facility.

Table 5.15-13
Projected Wastewater Flow and Treatment in the SBMWD Service Area (in afy)

Wastewater Facility	2000	2005	2010	2015	2020	2025	Effluent Flow	Treatment Level
WRP	28,371	30,230	30,790	35,828	38,627	41,426	Flows to RIX	Secondary
RIX Facility	35,089	36,948	39,747	42,546	45,345	48,114	Santa Ana River & recycled water	Tertiary/Title 22

Source: 2005 UWMP.

Three trunk lines feed into the WRP: the Arrowhead, "E" Street, and East Side trunks. Table 5.15-14 gives the various flow rates for these three trunk lines.

Table 5.15-14
San Bernardino Wastewater Reclamation Plant Trunk Lines

Trunk Name/Location	Size (inches)	MGD
Arrowhead: Arrowhead Avenue & Orange Show Road	54	8.04
"E" Street: "E" Street & Chandler Place	20	3.06
East Side: Amos Avenue & Dumas Street	54	14.23

Source: San Bernardino 2005b.

Storm Drainage Systems

The existing drainage on the proposed project's site follows generally natural patterns, with most stormwater drainage flowing into the Cable Canyon and Meyers Canyon drainageways. In general, stormwater runoff flows from Cable Canyon to Cable Creek, and then into the Devil Creek Diversion Channel, where it is directed to Lytle Creek and eventually into the Santa Ana River. Onsite drainage flows into one of four drainage areas (drainage areas A, B, C, and D) that are described in more detail in Section 5.7, *Hydrology and Water Quality*. The stormwater drainage on the adjacent 26.4 acre annexation area currently flows into Cable Creek and then into the Devil Creek Diversion Channel, where it is directed to Lytle Creek and eventually into the Santa Ana River.

5.15.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-1 Would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

U-3 Would 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.

U-5 Would result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.15.2.3 Environmental Impacts

The alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to stormwater drainage facilities in the City.

IMPACT 5.15-2: DEVELOPMENT OF THE PROJECT SITE WOULD REQUIRE CONSTRUCTION OF NEW STORMWATER DRAINAGE SYSTEMS AND FACILITIES THAT WOULD MEET REGIONAL WATER QUALITY CONTROL BOARD REQUIREMENTS. [THRESHOLDS U-1 AND U-3]

Impact Analysis: The development of the proposed project would require the construction of new stormwater drainage facilities and infrastructure. For the most part, natural drainage patterns would be preserved with the proposed development of the site. Major improvements would include three stormwater detention basins that would also serve as community parks. Two of these, in the western and southern portion of the site, near Meyers Road, would serve as neighborhood parks. The other, in the south-central portion of the site, would be a dog park. The water in these detention basins would be treated and then discharged at a controlled rate into Cable Canyon Creek.

Other stormwater drainage facilities would consist of 24-inch to 96-inch reinforced concrete pipes that would be placed along the major looped road. Culverts would be constructed to maintain natural drainage patterns in each of the drainage areas (A, B, C, and D) where proposed roadways would otherwise obstruct the drainage flow. The proposed retention basins, reinforced concrete pipes, and culverts may be seen in Figure 3-9, *Conceptual Drainage Plan,* in Chapter 3, *Project Description*.

Prior to site grading, a stormwater pollution prevention plan permit must be approved by the Santa Ana Regional Water Quality Control Board (RWQCB). A water quality management plan has also been prepared for the Spring Trails Specific Plan in accordance with the Santa Ana RWQCB. This plan includes best management practices (BMPs) to reduce the volume, rate, and amount of stormwater runoff that must be treated and reduce the potential for urban runoff and pollutants from coming into contact with one another. Section 5.7, *Hydrology and Water Quality*, includes additional discussion on stormwater and runoff impacts on water quality.

Although the proposed development would necessitate the construction of new facilities and infrastructure, their construction would help to maintain the natural drainage patterns of the site and would control the stormwater runoff flow so that it would not exceed the capacities of Cable Canyon Creek leaving the site.

The existing stormwater drainage patterns of the adjacent 26.4-acre annexation area would not be impacted by the proposed project and would continue to function as it does currently.

IMPACT 5.15-3: ***THE WASTEWATER FLOW OF THE PROPOSED PROJECT WOULD NOT EXCEED THE FULL FLOW CAPACITIES OF EXISTING SEWER LINES OR WASTEWATER FACILITIES; HOWEVER, NEW ONSITE PIPELINES WOULD NEED TO BE CONSTRUCTED TO SERVE THE PROJECT AND A POTENTIAL UPGRADE WOULD BE NEEDED FOR THE EXISTING PIPELINE AT LITTLE LEAGUE DRIVE. [THRESHOLD U-5]***

Impact Analysis: The proposed Spring Trails project would be served by the Public Works Department upon the annexation of the project site. The design, construction, and conveyance capabilities of the sewer lines are the responsibility of the project engineer and would be required to follow the Public Works Department sewer design policies and requirements. As shown in Figure 3-12, *Conceptual Sewer Plan*, in Chapter 3, *Project Description*, the proposed sewer lines would connect to the eight-inch sewer line at the intersection of Meyers Road and Little League Drive.

A residential wastewater generation rate of 182 gpd per acre was used to determine the daily flow rates of the proposed project. This rate is used for developments with residential densities of one unit per acre or less. The Sewer Capacity Analysis prepared for the project site by Rick Engineering (Appendix L) finds the flow rate of the proposed project would reach 327,283.2 gallons per day (366.6 afy). The WRP has a projected wastewater flow of 35,828 afy in 2015 (31.985 mgd). With a capacity of 33 mgd, the plant would have remaining capacity for 1.015 mgd. The project's expected wastewater flow of 327,283.2 gpd is within the projected flow capacity of the WRP near opening year 2013 (35,828 afy in 2015).

The onsite sewer lines would be eight inches in diameter, designed to accommodate a flow rate of 1.354 cubic feet per second (cfs) (203 gpm). The actual onsite flow would be 0.5064 cfs. The Sewer Capacity Study assessed the existing conditions of the sewer system that would be used by the Spring Trails project and the capacity that would be required for proposed sewer lines. The report used the City of San Bernardino Public Works Sewer Policy and Procedures design criteria for sanitary sewers based on City sewer buildout conditions in year 2020. The City's Sewer Master Plan is based on City buildout in 2020. The analysis of the existing sewer system found that four locations had a pipe flow over that of the design flow for the pipe section. These four locations were still below the full flow capacity of the sewer pipe sections. The recommended changes to the pipe sections with flow greater than design flow are listed in Table 5.15-15.

Table 5.15-15
Existing and Proposed Sewer Pipe Diameters

ID	Location	Existing Diameter	Full Flow	Design Flow	2020 Pipe Flow with Project	Difference between Design and Pipe Flow	Recommended Diameter
201	North Little League Drive	8 inches	2.813 cfs	1.401 cfs	1.433 cfs	0.032 cfs	10 inches
27	West Little League Drive	10 inches	3.061 cfs	1.525 cfs	1.568 cfs	0.043 cfs	12 inches
571	Little Mountain Drive at Kendall Drive	12 inches	4.931 cfs	2.457 cfs	3.957 cfs	1.5 cfs	15 inches
2241	Central Avenue at Waterman Avenue	54 inches	26.179 cfs	23.835 cfs	25.279 cfs	1.444 cfs	Parallel system[1]

Source: Rick Engineering 2009.
[1] It is recommended that a parallel sewer line be added next to this existing pipe rather than resizing it.

Since all of the pipeline sections are still within the full flow capacity, upgrades are not required. The existing sewer system would be able to accommodate the wastewater flow from the proposed project. However, the slope of the proposed pipeline in Verdemont Drive is not known. Depending on this slope, the pipeline would be either 8 or 10 inches in diameter. If a 10-inch pipeline is used, the existing pipeline at North Little League Drive would need to be upgraded from 8 to 10 inches, since it is not recommended to have a 10-inch pipeline upstream of an 8-inch pipeline. The need for this upgrade would be determined during final engineering.

The proposed project would require the construction of new pipelines on the project site. The construction of new pipelines and pipeline improvements is designed within the road right-of-ways. Potential environmental impacts associated with these improvements are therefore addressed in this EIR in conjunction with the assessment of the development footprint.

5.15.2.4 Cumulative Impacts

Stormwater Drainage Systems

Cumulative impacts caused by the need to construct additional stormwater conveyance infrastructure could occur if Spring Trails were to use the same infrastructure as other developments. The Spring Trails project would discharge its treated stormwater into Cable Canyon Creek at a controlled rate. Impacts could occur if development north of or immediately adjacent to Spring Trails contributed stormwater runoff to the same drainage system as Spring Trails. Since Spring Trails is immediately surrounded by unincorporated San Bernardino County or San Bernardino National Forest, it is unlikely that development would occur in these areas. Additionally, any future developments would be required to ensure that there would not be any net peak increase in stormwater flow to the existing infrastructure. There would not be any cumulatively significant impacts related to the construction of stormwater facilities. This analysis of cumulative impacts to stormwater drainage systems is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Wastewater Systems

The proposed Spring Trails Specific Plan would generate 63 afy of wastewater. This represents 0.18 percent of the total wastewater flow capacity of the WRP (35,828 afy). In combination with growth in the area, the project would not have cumulatively significant impacts on wastewater infrastructure. The sewer study prepared for this report analyzed the project's contribution to projected flow rates of the existing sewer system in 2020. The projected flow rates were acquired from the City's Sewer Master Plan for year 2020 and incorporates projected growth in the service area. Since the project's wastewater flow would not exceed the full capacity flows of the existing sewer system as projected in 2020, there would not be any cumulative impacts related to the need for additional sewer system improvements. This analysis of cumulative impacts to wastewater systems is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.15.2.5 Regulations and Standards Conditions

- San Bernardino Municipal Code, Section 15.04.130, On-site Improvement Permits, states "no person shall construct any on-site improvement for … the disposal of waste through a private sewer main [or] the conveyance of storm waters … without first obtaining a permit from the City Engineer."

- General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit 99-08-DWQ)

- NPDES permit No. CAG998001 and Regional Water Quality Control Board (RWQCB) Order No. R8-2003-0061 for discharges into storm sewers.

5.15.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.15-2 and 5.15-3.

5.15.2.7 Mitigation Measures

Impacts are less than significant and no mitigation measures are necessary.

5.15.2.8 Level of Significance After Mitigation

No mitigation measures have been identified. Sewer and stormwater system improvements would not have significant impacts on the environment.

5.15.3 Solid Waste

5.15.3.1 Environmental Setting

Regulatory Setting

Assembly Bill 939 and Senate Bill 1016

Assembly Bill (AB) 939 (Chapter 1095, Statutes of 1989), the Integrated Waste Management Act, requires, among other things, every California city and county to divert 50 percent of its waste from landfills by the year 2000. In addition, AB 939 requires each county and each city within the county to prepare a Source

Reduction and Recycling Element for its jurisdiction, identifying waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste (asbestos, sewage sludge, etc.), and household hazardous waste, and a countywide siting element, specifying areas for transformation or disposal sites to provide capacity for solid waste generated in the jurisdiction that cannot be reduced or recycled for a 15-year period.

In 2008, Senate Bill (SB) 1016 was filed with the secretary of state, amending the process of measuring the 50 percent diversion requirements of AB 939 (CalRecycle 2009b). With SB 1016, jurisdictions measure their 50 percent diversion rate by using a per capita indicator rather than basing it on the total tonnage solid waste disposal and diversion. The jurisdiction's goal is to reach a 50 percent per capita disposal target, which is based on the actual tonnage disposed of by a jurisdiction when it is meeting a 50 percent diversion rate on an overall basis. This per capita target rate depends on the jurisdiction's total waste disposal as reported quarterly to CalRecycle and the annual population as reported by the Department of Finance. The jurisdiction must meet the 50 percent waste diversion rate of base years 2003 through 2006, expressed through a per capita disposal rate. To be in compliance with the 50 percent diversion rate requirements, jurisdictions must not dispose of more than 50 percent of their per capita disposal target. Waste diversion rates post-2007 will be expressed as per capita disposal (CalRecycle 2009b).

The waste diversion rates for the City of San Bernardino for years 1995 through 2006 are shown in Table 5.15-16. These rates use the total tonnage indicator of 50 percent waste diversion.

Table 5.15-16
Board Reviewed Waste Diversion Rates for City of San Bernardino

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Waste Diversion Rate	23%	35%	44%	43%	46%	46%	45%	45%	42%	45%	53%	54%

Source: CalRecycle 2009a.
Percentages for years 2003 and 2004 have received time extensions for board approval.

The post-2006 50 percent diversion rates are based on the per capita indicator. CalRecycle has posted these rates online and made them available for jurisdictions so that they may set goals in reaching the 50 percent diversion rate. In the case of San Bernardino, these rates have not been board-approved and they do not indicate compliance. The rates for 2007 and 2008 are shown in Table 5.15-17.

Table 5.15-17
Per Capita 50 Percent Diversion Rates for City of San Bernardino

	Target Disposal Rates (in lbs.day)		Actual Disposal Rates (in lbs/day)	
Year	Residential 50 Percent Per Capita Disposal	Employee 50 Percent Per Capita Disposal	Residential 50 Percent Per Capita Disposal	Employee 50 Percent Per Capita Disposal
2007	6.6	15.4	6.1	13.7
2008	6.6	15.4	5.6	12.3

Source: CIWMB 2009c.

Assembly Bill 75

AB 75 (Chapter 764, Statutes of 1999) requires that state agencies develop and implement an integrated waste management plan and that community service districts report disposal and diversion information to the city, county, or regional agency in which the community service district is located. The City of San Bernardino reports waste disposal and diversion information to CalRecycle.

Solid Waste Services

Solid waste service would be provided to the Spring Trails site and the adjacent 26.4 acre annexation area by the City of San Bernardino Refuse and Recycling Division, which provides service to residential and commercial customers for solid waste, recyclables, and green waste pick-up.

For 2007, the City of San Bernardino disposed of 227,594 tons of solid waste (CalRecycle 2009a). This amount reflects the total waste disposed after diversion of recyclable materials. The diversion rates for years 1995 through 2006 are shown on Table 5.15-17. Residential waste disposal accounted for approximately 30 percent of total waste (approximately 68,500 tons). Paper and other organic materials accounted for the majority of disposed waste materials, at 40 and 27.5 percent, respectively. Commercial waste disposal accounted for the remaining 70 percent of total waste (approximately 159,500 tons). In 2004, paper and other organic materials also accounted for the majority of waste disposed by commercial facilities at 33.8 and 32.6 percent, respectively (CalRecycle 2009a).

Mainly two landfills would be receiving solid waste from the proposed project: the Mid-Valley and San Timoteo sanitary landfills. The Mid-Valley Sanitary Landfill has a remaining capacity of 35,270,000 cubic yards, and the permitted maximum daily disposal rate is 7,500 tons. San Timoteo Sanitary Landfill has a remaining capacity of 9,491,163 cubic yards, and the maximum daily disposal rate is 1,000 tons.



5.15.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

U-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

5.15.3.3 Environmental Impacts

The Alternative (overhead electric lines) development plan contains 304 units compared to 307 units proposed in the preferred development plan. Therefore the analysis below uses the preferred development plan to assess impacts to solid waste services in the City. This analysis can be applied to either scenario to determine impacts.

IMPACT 5.15.4: THE PROPOSED PROJECT WOULD BE ADEQUATELY SERVED BY THE MID-VALLEY AND SAN TIMOTEO SANITARY LANDFILLS AND WOULD COMPLY WITH AB 939. [THRESHOLDS U-6 AND U-7]

Impact Analysis: The proposed Spring Trails specific plan involves 307 residential units that would generate solid waste to be disposed at Mid-Valley and/or San Timoteo landfills. The solid waste generated by each

residential unit can be estimated at 12.23 pounds of household waste per dwelling unit per day (Los Angeles County CEQA Threshold Guidelines). Based on this estimation, the proposed project would generate approximately 1,370,433 lbs/year (685 tons of solid waste per year, or 1.88 tons per day).

San Timoteo Landfill can receive a maximum of 1,000 tons per day until 2016. Since this closure date is not long after the buildout of the proposed project, the majority of the waste from the project would go to the Mid-Valley landfill, which has a closure date of 2033. The Mid-Valley Landfill can receive up to 7,500 tons of waste per day, and the average daily waste flow is 2,790 tons. The daily wasteflow plus the wasteflow of the proposed project totals 2,791.88 tons per day, which would be under the permitted daily capacity of the landfill.

The County and City of San Bernardino have recycling programs and incentives to reduce the amount of solid waste being transported to landfills. The waste reduction and pollution prevention programs of the City help both residents and businesses reduce waste and find recycling solutions. The City offers pick-up services for waste, green waste, and recycling for residents and businesses (CalRecycle 2009a). Impacts related to solid waste generation would be less than significant.

Regulatory Compliance

As shown on Table 5.15-16, the City of San Bernardino was in compliance with AB 939 in 2005 and 2006 based on the 50 percent waste diversion rate. In 2007 and 2008, San Bernardino did not meet the per capita disposal rate targets, but these numbers do not necessarily indicate noncompliance (see Table 5.15-17). The figures must be reviewed and approved by the board before they are used to determine the City's compliance with AB 939 (and SB 1016). These figures have not yet been approved by the board and the effect Spring Trails would have on the City's ability to meet its diversion targets is speculative. In worse-case conditions, the project would decrease the amount of waste being diverted from landfills and lessen the City's likelihood of compliance with AB 939.

Spring Trails does not offer any additional incentives to reduce the amount of waste being sent to landfills during construction or operation. Residents living in Spring Trails would participate in City-sponsored waste and recycling collection programs. Residential wasteflow generated during the operation of the project would have to be incorporated into the City's calculations on how to meet the 50 percent diversion goal. Although it would increase the amount of waste that would need to be disposed of by the City, this increase is not expected to cause significant impacts.

Construction material waste must also be reported to CalRecycle to indicate compliance with AB 939. Spring Trails does not have any steps for reducing construction material waste. The construction material would also need to be incorporated into the City's calculations to meet the 50 percent diversion goal. Since there would not be demolition of existing structures involved with the construction activities, there would not be a substantial amount of waste to be discarded.

5.15.3.4 Cumulative Impacts

Solid waste planning in San Bernardino County is guided by the San Bernardino County Solid Waste Management Plan, which directs the actions of the San Bernardino County Solid Waste Advisory Committee (San Bernardino 2005). The City of San Bernardino has a representative on this committee. The need for any additional landfills or transfer stations in the future must be incorporated into the solid waste management plan.

The EIR for the San Bernardino General Plan Update estimates that, at buildout, the City would be generating 2,628 tons of solid waste per day (after diversion). The Mid-Valley landfill can receive up to 7,500 tons of solid waste per day through its closure date in 2033. Over 70 jurisdictions send solid waste to this landfill, and the total daily disposal averages 2,790 tons. Between 2005 and 2007, total tons disposed per year decreased from 855,135 to 762,729 tons. When the proposed project disposal rate (1.89 tons per day) is included with the buildout disposal rate for the City (2,628 tons per day), the total is 2,629.89 tons per day, which is more than the current daily average for the landfill but less than the maximum capacity. The proposed project would not significantly contribute to the projected solid waste flow from the City of San Bernardino or to the maximum daily permitted disposal rate for the Mid-Valley landfill.

The above analysis of cumulative impacts to solid waste services is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.15.3.5 Regulations and Standards Conditions

City

- City of San Bernardino Municipal Code, Chapter 8.24, Refuse and Solid Waste

State

- California Assembly Bill 939
- California Assembly Bill 75
- California Code Title 14 Division 7, Regulations of the California Integrated Waste Management Board

5.15.3.6 Level of Significance Before Mitigation

The Spring Trails project would have less than significant impacts on solid waste services.

5.15.3.7 Mitigation Measures

Impacts on solid waste services are less than significant; no mitigation measures are needed.

5.15.3.8 Level of Significance After Mitigation

No mitigation measures are identified, and impacts on solid waste services are less than significant.

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5.16 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of Spring Trails Specific Plan (proposed project) to impact global climate change. Modeling datasheets for global climate change emissions are included as part of the air quality modeling in Appendix C.

5.16.1 Environmental Setting

Greenhouse Gases and Climate Change

Climate change refers to the variation of the Earth's climate over time, whether due to natural variability or as a result of human activities. The climate system is interactive, consisting of five major components: the atmosphere, the hydrosphere (ocean, rivers, and lakes), the cryosphere (sea ice, ice sheets, and glaciers), the land surface, and the biosphere (flora and fauna). The atmosphere is the most unstable and rapidly changing part of the system. It is made up of 78.1 percent nitrogen (N_2), 20.9 percent oxygen (O_2), and 0.93 percent argon (Ar). These gases have only limited interaction with the incoming solar radiation and do not interact with infrared (long-wave) radiation emitted by the Earth. However, there are a number of trace gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3), that absorb and emit infrared radiation and therefore have an affect on the Earth's climate. These are greenhouse gases (GHG), and while they comprise less than 0.1 percent of the total volume mixing ratio in dry air, they play an essential role in influencing the Earth's climate (IPCC 2001).

Non-CO_2 GHGs include those listed in the Kyoto Protocol[1] (CH_4, N_2O, hydrofluorocarbons [HFC], perfluorocarbons [PFC], and sulfur hexafluoride [SH_6])and those listed under the Montreal Protocol and its Amendments[2] (chlorofluorocarbons [CFC], hydrochlorofluorocarbons [HCFC], and halons). Table 5.16-1 lists a selection of some of the GHGs and their relative global warming potentials (GWP) compared to CO_2. Although not included in this table, water vapor (H_2O) is the strongest GHG, but is also the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant in the atmosphere (IPCC 2001). The major GHGs are briefly described below.

[1] Kyoto Protocol: Established by the United Nations Framework Convention on Climate Change (UNFCC) and signed by more than 160 countries (including the United States, which ultimately did not ratify) stating that they commit to reduce their GHG emissions by 55 percent or engage in emissions trading.

[2] Montreal Protocol and Amendments: International Treaty signed in 1987 and subsequently amended in 1990 and 1992. Stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (CFC, halons, carbon tetrachloride, and methyl chloroform) are to be phased out by 2000 (2005 for methyl chloroform).

Table 5.16-1
Greenhouse Gases and Their Relative Global Warming Potential Compared to CO_2

GHG	Atmospheric Lifetime (years)	Global Warming Potential[1]
Carbon Dioxide (CO_2)	50 to 200	1
Methane (CH_4)[2]	12 (±3)	21
Nitrous Oxide (N_2O)	120	310
Hydrofluorocarbons:		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
Perfluoromethane: CF_4	50,000	6,500
Perfluoroethane: C_2F_6	10,000	9,200
Perfluorobutane: C_4F_{10}	2,600	7,000
Perfluoro-2-methylpentane: C_6F_{14}	3,200	7,400
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: USEPA
[1] Based on the 100-Year Time Horizon of the GWP of the air pollutant relative to CO_2.
[2] The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

Carbon Dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High GWP gases.

- *Chlorofluorocarbons (CFCs)* are greenhouse gases covered under the 1987 Montreal Protocol and are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (e.g., the troposphere or stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are greenhouse gases covered under the Kyoto Protocol.

- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to ozone-depleting substances like CFCs. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong greenhouse gases.

- *Sulfur Hexafluoride (SF_6)* is a colorless gas that is soluble in alcohol and ether and slightly soluble in water. It is a strong greenhouse gas used primarily as an insulator in electrical transmission and distribution systems.

- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs and thus have been introduced as temporary replacements for CFCs and are also greenhouse gases.

- *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer but are strong greenhouse gases (USEPA 2007).

California's GHG Sources and Relative Contribution

California is the second largest total emitter of GHGs in the United States, surpassed only by Texas, and the tenth largest GHG emitter in the world (CEC 2005). However, because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of gross state product (total economic output of goods and services). In 2004, California produced 492 million metric tons of CO_2-equivalent (CO_{2e}) GHG emissions,[3] of which 81 percent were CO_2 from the combustion of fossil fuels, 2.8 percent were from other sources of CO_2, 5.7 percent were from methane, and 6.8 percent were from N_2O. The remaining 2.9 percent of GHG emissions were from high GWP gases (CEC 2006).

CO_2 emissions from human activities represent 84 percent of the total GHG emissions. California's transportation sector is the single largest generator of GHG emissions, producing 40.7 percent of the state's total emissions. Electricity consumption is the second largest source, comprising 22.2 percent. While out-of-state electricity generation comprises 22 to 32 percent of California's total electricity supply, it contributes 39 to 57 percent of the GHG emissions associated with electricity consumption in the state. Industrial activities are California's third largest source of GHG emissions, comprising 20.5 percent of state's total emissions. Other major sources of GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities comprise the balance of California's greenhouse gas emissions (CEC 2006).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the levels of climate change pollutants that is attributable to human activities. The amount of CO_2

[3] CO_2-equivalence is used to show the relative potential that different GHG have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

has increased by more than 35 percent since preindustrial times, and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the levels of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006).

Climate-change scenarios are affected by varying degrees of uncertainty (IPCC 2007). The Intergovernmental Panel on Climate Change's (IPCC) *2007 IPCC Fourth Assessment Report* projects that the global mean temperature increase from 1990 to 2100 will range from 1.4 to 5.8 °C (2.5 to 10.4°F)under different climate-change scenarios,. In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.

Potential Climate Change Impacts for California

Climate change is not a local environmental impact but a global one. Unlike criteria pollutants, CO_2 emissions cannot be attributed to a direct health effect. However, human-caused increases in GHG have been shown to be highly correlated with increases in the surface and ocean temperatures on Earth (IPCC 2007). What is not clear is the extent of the impact on environmental systems, and therefore on human beings.

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences from gradual changes in the Earth's temperature are also hard to predict. Because of this, the IPCC uses five different levels to quantify climate change impacts on the environment: Very High Confidence (95 percent or greater chance of occurrence), High Confidence (67 to 95 percent), Medium Confidence (33 to 67 percent), Low Confidence (5 to 33 percent), and Very Low Confidence (5 percent or less).

In California and western North America observations in the climate indicate that 1) there is a trend toward warmer winter and spring temperatures, (2) a smaller fraction of precipitation is falling as snow instead of rain, (3) there is a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, (4) there is an advance snowmelt of 5 to 30 days earlier in the spring, and (5) there is a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team (CAT), even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.16-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now unavoidable.

CAT and the California Environmental Protection Agency (Cal/EPA) use the results from the recent analysis of global climate change impacts for California under three IPCC scenarios: lower emissions (B1), medium-high emissions (A2), and high emissions (A1F1); each is associated with an increasing rise in average global surface temperatures. The California Energy Commission's (CEC) 2006 report, *Our Changing Climate, Assessing the Risks to California*, reports that global climate change risks to California include public health impacts (poor air quality made worse and more severe heat), water resources impacts (decreasing Sierra Nevada snow pack, challenges in securing adequate water supply, potential reduction in hydropower, and loss of winter recreation), agricultural impacts (increasing temperatures, increasing threats from pests and pathogens, expanded ranges of agricultural weeds, and declining productivity), coast sea level impacts (rising sea levels, increasing coastal floods, and shrinking beaches), forest and biological resource impacts

(increasing wildfires, increasing threats from pest and pathogens, declining forest productivity, and shifting vegetation and species distribution), and electricity (increased energy demand).

Baseline Setting

The project site is vacant. Consequently, no GHG emissions are currently generated at the project site.

Regulatory Setting

Regulation of GHG Emissions on a National Level

Currently there are no adopted regulations to combat global climate change on a national level. On April 17, 2009, the US Environmental Protection Agency (EPA) declared CO_2 a threat to public health and welfare, which is the first step toward development of ambient air quality standards for this air pollutant. The EPA also finds that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but rather allow the EPA to finalize the GHG standards proposed earlier this year for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation. The EPA's endangerment finding covers emissions of six key greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world.

Regulation of GHG Emissions on a State Level

Assembly Bill 32 (AB 32), the Global Warming Solutions Act, was passed by the California legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG. AB 32 follows the first tier of emissions reduction targets established in Executive Order S-3-05, signed on June 1, 2005, which requires the state's global warming emissions to be reduced to 1990 levels by the year 2020. Executive Order S-3-05 also requires the state to reduce GHG emissions by 80 percent of 1990 levels by year 2050. Projected GHG emissions in California are estimated at 596 million metric tons of (MMTons) CO_{2e} on 2020. In December 2007, California Air Resources Board (CARB) approved a 2020 emissions limit of 427 MMTons (471 million tons) of CO_{2e} for the state. The 2020 target requires emissions reductions of 169 MMTons, approximately 30 percent of the projected emissions compared to business as usual (BAU) in year 2020 (i.e., 30 percent of 596 MMTons). CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical practice in 2002–2004.

In order to effectively implement the cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor global warming emissions levels, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting Online Tool was established through the Climate Action Registry to track GHG emissions. On December 11, 2008, CARB adopted the *Climate Change Scoping Plan.* Key elements are:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent.

- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.

- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.

- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Table 5.16-2 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. Local government operations were not accounted for in the plan, but local land use changes are estimated to result in a reduction of 5 MMTons of CO_{2e}, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer vehicle miles traveled.

Table 5.16-2
Scoping Plan Greenhouse Gas Reduction Measures and Reductions toward 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 MMT CO_{2e}	Percentage of Statewide 2020 Target
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[1]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined[2]	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB 2008. Note: the percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTons and the Scoping Plan identifies 174 MMTons of emissions reductions strategies.
MMT CO_{2e}: million metric tons of CO_{2e}
[1] Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.
[2] According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 MMTons of CO_{2e} (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

In summary, current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32 and Executive Order S-03-05. AB 32 establishes a goal of reaching 1990 levels by 2020 and describes a process for achieving that goal. Executive Order S-03-05 sets a goal for the following for reduction of GHG emissions:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050.

Regulation of GHG Emissions on a Regional Level

In 2008, Senate Bill 375 (SB 375) was adopted to connect the GHG emissions reductions targets established in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). The Southern California Association of Governments (SCAG) is the MPO for the southern California region, which includes the counties of Los Angeles, Orange, San Bernardino County, Riverside, Ventura, and Riverside. The subregional government within SCAG is the San Bernardino Association of Governments (SANBAG). CARB is proposing to set SCAG's targets for 8 percent reduction from 2005 by 2020 and 13 percent reduction from 2005 by 2035.

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's existing transportation network. The proposed targets would result in 3 MMTons of GHG reductions by 2020 and 15 MMTons of GHG reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the SCAG region, the first SCS is anticipated by May 2012. The SCS sets forth a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide individual jurisdictions with growth strategies that together achieve the regional GHG emissions reduction targets. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. If the SCS is unable to achieve the regional GHG emissions reduction targets, then the MPO is required to prepare an Alternative Planning Strategy that shows how the GHG emissions reduction target could be achieved through alternative development patterns, infrastructure, and/or transportation measures.

5.16.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GH-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GH-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

South Coast Air Quality Management District

The issue of global climate change is, by definition, a cumulative environmental impact. South Coast Air Quality Management District (SCAQMD) is the local air district responsible for establishing thresholds for air quality. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group. Currently SCAQMD is in the process of establishing a threshold for GHG emissions to determine a project's regional

contribution toward global climate change impacts for California. On December 5, 2008, the SCAQMD adopted a threshold of 10,000 metric tons (MTons) of CO_{2e} for industrial projects for which it is the lead agency under CEQA. However, thresholds for residential and commercial development projects have yet to be adopted by SCAQMD.

5.16.3 Environmental Impacts

The project is the construction and operation of the Spring Trails Specific Plan. Construction and operational GHG emissions were calculated using the URBEMIS2007 emissions model. The URBEMIS2007 model includes an inventory of CO_2 emissions from stationary and vehicle emissions sources. In addition, CO_{2e} emissions for project-related energy use were calculated using energy usage factors and emission rates from the US Energy Information Administration (EIA). CO_{2e} emissions from project-related water demand were calculated using Southern California energy-intensity factors obtained from the CEC, and CO_{2e} emissions from project-related waste disposal were calculated using the EPA's Waste Reduction Model (WARM). Life cycle emissions[4] are not included in this analysis because no information is available for the proposed project and therefore life cycle GHG emissions would be speculative. Air quality modeling is included as Appendix C.

The proposed project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the proposed plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 units in the proposed development plan. Both scenarios are addressed in this section with regards to their impacts to global climate change.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels. The annexation would not contribute to additional future impacts related to greenhouse gas emissions.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.16-1: PROJECT-RELATED GREENHOUSE GAS EMISSIONS WOULD SIGNIFICANTLY CUMULATIVELY CONTRIBUTE TO GLOBAL CLIMATE CHANGE IMPACTS IN CALIFORNIA. [THRESHOLDS GH-1]

Impact Analysis: Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental

[4] Life cycle emissions are the GHG emissions from raw material production, manufacture, distribution, use, and disposal and include all intervening transportation emissions caused by the product's existence. Because the amount of materials consumed during the operation or construction of the Spring Trails project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative.

impact. The State of California, through its governor and its legislature, has established a comprehensive framework for the substantial reduction of GHG emissions over the next 40+ years. This will occur primarily through the implementation of AB 32 and SB 375, which will address GHG emissions on a statewide cumulative basis.

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[5]

In accordance with the Technical Advisory from Governor's Office of Planning and Research (OPR) and revisions to the CEQA Guidelines, the analysis below provides the conclusions on the project-specific impact toward the cumulative impact of global climate change. Annual GHG emissions from project-related mobile and stationary sources and project-related indirect emissions from purchased energy and water were calculated for construction and operation of the project and evaluated for the potential to interfere with the State of California's ability to achieve GHG reduction goals and strategies through a consistency analysis with CARB's Scoping Plan.

The following analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Project-Related GHG Emissions

The proposed project is not a regionally significant project pursuant to SCAG's Intergovernmental Review criteria and the CEQA Guidelines. The development contemplated by the Spring Trails Specific Plan would contribute to global climate change through direct emissions of GHG from onsite area sources, offsite energy production required for onsite activities and water use, and vehicle trips generated by the project.

Construction

Construction activities would consume fuel and result in the generation of GHG emissions. Construction of the project is anticipated to commence year 2010 until the anticipated completion year 2013. Construction-related GHG emissions would cease upon completion of the construction phase of individual development projects. Emissions from construction activities were calculated on an annual basis based on the construction phasing and equipment list provided by the applicant (see Table 3-4). Project-related GHG emissions from construction activities are shown in Table 5.16-3. This table accounts for GHG emissions from operation of on- and off-road construction equipment in addition to GHG emissions generated from material delivery and worker trips associated with the development of the proposed project. Construction

[5] OPR recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

emissions associated with the project are amortized based on a 30-year project lifetime and included in the project's GHG emissions inventory.

Table 5.16-3
Project-Generated Construction-Phase GHG Emissions

Construction Year[1]	GHG Emissions MTons per Year
2010	2,695
2011	1,290
2012	1,277
2013	398
Total Construction Emissions	**5,660 MTons of CO_{2e}**
Amortized Construction Emissions[2]	**189 MTons of CO_2**

Source: URBEMIS2007, Version 9.2.4. MTons: metric tons. Assumes CO_2 represents 99.7 percent of total from diesel CO_{2e} while CH_4, N_2O, and fluorinated gases compose the remaining percentage (BAAQMD 2008).
[1] Construction emissions are based on the construction phasing and equipment list provided by the applicant.
[2] Construction emissions are amortized based on a 30-year project lifetime.

Fossil fuels used by construction equipment would generate GHG emissions. To reduce these, California has adopted a low carbon fuel standard. The low carbon fuel standard would reduce the carbon content of fuel of both gasoline and diesel fuel, thereby reducing GHG emissions from fuel from construction equipment by 10 percent. The standard goes into effect in year 2010 and requires transportation fuel sold in California to have a 10 percent reduction in average carbon intensity by year 2020. The compliance path of the 10 percent reduction target would be incremental and would be "back-loaded"—that is, more reductions would be required in the last five years than the first five years. Construction activities would commence after 2010 and would therefore incrementally benefit from this statewide GHG reduction requirement. However, due to the scale of the development activities associated with the proposed project, emissions would be potentially cumulatively significant without implementation of mitigation measures to reduce carbon emissions.

Forest Resources

The recent changes to Appendix G of the CEQA Guidelines, effective March 18, 2010, require an analysis of impacts to forest resources. This analysis is included as Section 5.17, *Forest Resources*, of this DEIR. The analysis in this section concludes that approximately 220 native trees within the boundaries of the project site meet the definition of forest resource. The loss of these forest resources would remove carbon sinks[6] as the forest land[7] is converted to new development associated with the Spring Trails Specific Plan. Trees and other vegetation remove CO_2 emissions through the photosynthesis process by uptaking CO_2 and emitting oxygen. The current inventory (2002–2004) in California shows forests as a carbon sink of 4.7 MMTons of CO_{2e}. However, carbon sequestration has declined since 1990 and BAU for 2020 assumes no net emissions from forest resources (CARB 2008). Loss of forest resources to development increases GHG emissions levels as less carbon is sequestered (i.e., stored as plant material). Additionally, wildfires also contribute to

[6] Carbon sinks occur when the atmospheric removal of carbon through sequestration is greater than atmospheric emissions from processes like fire and decomposition of wood (CARB 2008).
[7] California Public Resources Code Section 12220(g) defines forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

GHG emissions. Removal of the 220 native trees would result in a loss of forest resources and therefore a loss of potential carbon sequestration. These trees are required to be replaced in accordance with the City's Municipal Code Section 19.28.090. Mitigation Measure 5.3-11 requires that these trees are replaced at a 1:1 ratio (or at the exchange ratios specified in the mitigation measure). Because the trees would be replaced, the carbon sequestration loss from these forest resources is considered nominal and no significant impact would occur; this sector is not included in the GHG emissions inventory.

Site Operations

For the operations phase, the project's GHG emissions are separated into emission sources for the applicable GHG emissions Sectors established by CARB. Transportation Sector emissions are produced from vehicular travel to and from the project site. Electricity Sector sources are indirect GHG emissions from the energy (purchased energy and energy from water use) that is produced offsite.[8] Recycling and Waste Sector includes emissions associated with waste disposal generated by the project. Area sources (Commercial and Residential Sector emissions sources) are owned or controlled by the project (e.g., natural gas combustion, boilers, and furnaces) and produced onsite.

GHG Emissions Inventory

The project's BAU GHG emissions at buildout year 2013 BAU are shown in Table 5.16-4. The emissions estimates in the table do not take into account the GHG emission reductions associated with changes to the Building and Energy Efficiency standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, California low carbon-content fuel legislation, changes in the Corporate Average Fuel Economy (CAFE) standards (Pavley), and other early action measures in the Scoping Plan to reduce GHG emissions. Hence, the emissions inventory included above represents the project's BAU emission scenario.

The largest source of emissions is from the Transportation Sector. While development patterns can influence travel behavior and travel modes, these emissions are indirect sources of GHG, not directly controlled by applicants for new development in the proposed Spring Trails Specific Plan. Project-related Electricity Sector emissions (water and purchased energy) represent the second largest proportion of emissions associated with the project due to the anticipated average square footage of the single-family dwellings units that would be developed on each lot. Average lot size would be approximately 27,337 square feet (0.6 acre), with the largest lot at 13.9 acres and the smallest lot at 10,800 square feet (0.2 acre). These two sectors are followed by area sources associated with the Commercial and Residential Sector and Recycling and Waste. These direct sources of emissions can be controlled by new development by ensuring that structures are built efficiently to reduce demand on energy use, that nonpotable/recycled water is used where available to reduce demand of potable water use, and that recycling is available onsite to decrease the amount of waste sent to landfills.

[8] Potable water use consumes large amounts of energy associated with water conveyance, treatment, distribution, end use, and wastewater treatment.

Table 5-16.4
Business-as-Usual GHG Emissions Inventory, Buildout Year 2013

Source[2]	GHG Emissions MTons/Year	
	2013	Percent of Total
Transportation Sector[1]	4,676	48%
Electricity Sector		
Purchased Energy[3]	2,882	30%
Water Demand and Treatment[4]	532	5%
Total Energy Emissions	3,414	35%
Recycling and Waste Sector[5]	168	2%
Commercial/Residential Sector [6, 7]	1,302	13%
Amortized Construction Emissions[8]	189	2%
Total All Sectors	**9,748**	**100%**
Per Service Population (SP) GHG Emissions	**9.4 MTons/SP**	**NA**

Notes: MTons: metric Tons; Service Population (SP): Employees and Residents
Sources:
[1] URBEMIS2007, Version 9.2.4. Assumes CO_2 is 99.6 percent of total CO_{2e} emissions from gasoline while CH_4, N_2O, and fluorinated gases compose the remaining percentage (BAAQMD 2008).
[2] Based on development of 329 dwelling units and therefore estimates are conservative.
[3] US EIA: CO_{2e} emissions calculated using energy usage factors and emission rates from the United States Department of Energy, EIA, 2003. *Commercial Building Energy Consumption*, December 2006, Table C14; EIA, Residential Energy Consumption Survey, Residential Energy Consumption Survey, Table US1. Total Energy Consumption, Expenditures, and Intensities, 2005. Part 1: Housing Unit Characteristics and Energy Usage Indicators Released January 2009. Note: Does not take into account increase in appliance and building energy efficiency.
[4] US EIA & CEC: CO_{2e} emissions from the energy intensity of water are based on the CEC's California's Water Energy Relationship (2005) of 12,700 Kwh/MG for Southern California and water demand calculated in Section 5.16, *Utilities and Service Systems*.
[5] USEPA WARM & CIWMB: CO_{2e} emissions from waste generation are based on the Waste Reduction Model created by the USEPA and the waste stream jurisdictional profile for the City of San Bernardino calculated in Section 5.16, *Utilities and Service Systems*.
[6] URBEMIS2007, Version 9.2.4: Assumes CO_2 represents 99.6 percent of total CO_{2e} emissions from gasoline and while CH_4, N_2O, and fluorinated gases compose the remaining percentage (BAAQMD 2008). URBEMIS2007 assumes an increase in CO_2 emission in later years.
[7] CO_{2e} emissions from refrigerant/AC equipment use are based on the methodology from the EPA, Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment, http://www.epa.gov/stateply/documents/resources/mfgrfg.pdf, May 2008.
[8] Total construction emissions are amortized based on a 30-year project lifetime.

As shown in the table, the project would generate a net increase of approximately 9,748 MTons of GHG per year or 9.4 MTons per service population based on a net increase of 1,035 people. There is currently no threshold adopted by SCAQMD for development projects that defines at which point GHG emissions generated by a project becomes significant. However, SCAQMD's Working Group for a GHG Significance Threshold has proposed a threshold of 3,000 MTons. Consequently, the total increase in GHG emissions onsite from the project would is considered to be substantial in the absence of mitigation. In order to determine whether GHG emissions associated with the project are significant, a consistency analysis with transportation and nontransportation GHG reduction strategies was conducted.

Table 5.16-5 is a consistency analysis between the recommended transportation reduction measures of proposed SCAQMD Rule 2301 and the design features of the proposed project that go toward reducing VMT and mobile-source GHG emissions. Almost half of the increase in GHG emissions due to the project is from transportation sources. As shown in the table, the project is inconsistent with several transportation strategies aimed at reducing vehicle miles traveled (VMT) by incorporating mixed-use or locating within ½ mile of services and transit. Therefore, the project's transportation sources are considered to substantially contribute to GHG emissions in California.

Table 5.16-5
Consistency Analysis with Proposed Rule 2301 Transportation Reduction Measures

Applicable Recommended Reduction Strategies		Project Consistency
Reduction Strategy	**Description**	
Land Use	All residential units are within ½ mile of retail, parks, schools, or other civic uses	**Inconsistent**: The proposed project would construct planned park facilities onsite; however, the proposed single-family dwelling units would not be within ½ mile of retail, schools, and other civic uses.
	Project is oriented towards existing or planned transit, bicycle, or pedestrian corridor, setback distance is reduced to increase density	**Inconsistent**: The proposed project is not within a transit corridor, and setback distance would not be reduced to increase density. However, the proposed project would include a system of bicycle and pedestrian trails that interconnect within the project site and provide connections to the surrounding areas and region.
	Project is located on an infill site less than ½ mile from public transit, and serviced by existing infrastructure.	**Inconsistent**: The project site is not within ½ mile of public transit. The nearest bus stop is approximately two miles to the east.
	Project to contain 3 of the following on-site or within ½ mile: residential, retail, park, open space, office building, or other civic uses	**Inconsistent**: The proposed project is a master planned single-family community. While it would provide park facilities onsite and open space would be within ½ mile, the project would not be located within ½ mile of retail, office, or other civic uses.
	Project is designed with an increased scale and density within ½ mile from mass transit stations or bus hubs	**Inconsistent**: The project is not located within a ½ mile of transit.
	Project is designed in a pedestrian oriented fashion to maximize neighborhood walkability, connect to the existing street grid, preserves open space, promote transit ridership, and buildings with appropriate street frontages	**Inconsistent**: The proposed project would include a system of bicycle, pedestrian, and equestrian trails that interconnect within the project site and provide connections to the surrounding areas and region. However, the primary means of transportation would be automotive, because the project is not located within a ½ mile of services or transit. The project would also develop a portion of the national forest.
Transportation	Provide a display case or kiosk displaying transportation information in a prominent area accessible to employees, residents, or visitors. Display bicycle route maps, bus schedules, and other transportation information such as carpooling, carsharing, etc.	**Not Applicable:** The proposed project would not provide a kiosk or display case that contains transportation information in a prominent area, as the project is a single-family residential project.
	Transit service provides headways of one hour or less for stops within ½ mile	**Inconsistent**: There are no transit stops within ½ mile of the project site.

Table 5.16-5
Consistency Analysis with Proposed Rule 2301 Transportation Reduction Measures

Applicable Recommended Reduction Strategies		Project Consistency
Reduction Strategy	**Description**	
	Project provides safe and convenient bicycle/pedestrian access to transit stops and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting)	**Consistent**: As shown in Figures 3-6, *Circulation Plan*, and 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive and functional system of vehicular roads and pedestrian and multiuse trails. The trail system depicted in Figure 3-8 would not only provide a linkage system throughout the project area, but also to surrounding communities and uses. However, the project would not provide or construct transit stop improvements.
	Provide transit stops with safe and convenient bicycle/pedestrian access. Provide essential transit stop improvements such as shelters, route, information, benches, and lighting in anticipation of future transit services	**Not Applicable**: The proposed project would not provide or construct transit stop improvements.
Bicycle/Pedestrian	A biking network is completed to connect at least 50% of project to diverse uses within 3 miles	**Consistent**: The trail system as shown in Figure 3-8 would provide a linkage system throughout the project area and also to surrounding communities and uses.
	Designated bicycle routes to all units and connectors to existing Class I or Class II Bicycle lanes within ½ miles and project design includes a comparable network that connects to the project uses to the existing offsite facility	**Consistent**: As shown in Figures 3-6, *Circulation Plan*, and 3-8, *Trails, Parks, and Open Space Plan*, the proposed project would include a comprehensive and functional system of vehicular roads and pedestrian and multiuse trails. The trail system depicted in Figure 3-8 would not only provide a linkage system throughout the project area, but also to surrounding communities and uses.
	Project must provide safe and convenient pedestrian and bicycle access to all transit stops within ½ mile	**Not Applicable**: The trail system shown in Figure 3-8 would provide a linkage system throughout the project area and also to surrounding communities and uses. However, there are no transit stops within ½ mile of the project site.
	Provide pedestrian access between bus service and major transportation points	**Consistent**: The trail system shown in Figure 3-8 would provide a linkage system throughout the project area and also to surrounding communities and uses. The trail system would indirectly provide access to bus service. However, the nearest transit stop is approximately two miles from the project site.

Table 5.16-5
Consistency Analysis with Proposed Rule 2301 Transportation Reduction Measures

Applicable Recommended Reduction Strategies		Project Consistency
Reduction Strategy	**Description**	
	Provide traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs at intersections, raised crosswalks, center islands, and bicycle stoplights. Design roadways to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by implementing traffic calming features	**Consistent:** The project would improve local roadways in the vicinity of the project site. In addition, the project includes a comprehensive and functional system of pedestrian and multiuse trails to encourage pedestrian and bicycle use.
	Multiple and direct street routing (grid network pattern) and eliminate cul-de-sacs	**Inconsistent**: The proposed project is a master planned single-family community that would utilize cul-de-sacs throughout the project site.
	Project minimizes or eliminates pedestrian barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycles or pedestrian circulation	**Consistent**: The trail system shown in Figure 3-8 would provide a linkage system throughout the project area.
	Provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with project site	**Consistent**: The trail system shown in Figure 3-8 would provide a linkage system throughout the project area and also to surrounding communities and uses.
	Design and construct all street standards to provide equal access and right of ways for pedestrian, bicycle, bus, rail, and automobile	**Consistent**: The proposed project would include a system of bicycle, pedestrian, and equestrian trails that interconnect within the project site and provide connections to the surrounding areas and region.

Source: SCAQMD 2009.

Table 5.16-6 includes required design features of the Development Standards of the Spring Trails Specific Plan that contribute toward increasing energy efficiency and water conservation. The project nontransportation sector GHG emissions would potentially significantly contribute to the State's GHG emissions inventory (see Table 5.16-4).

Table 5.16-6
Applicable Project Design Features of the Spring Trails Specific Plan to Reduce GHG Emissions

Area of Development	Design Guidelines/Standards Project Consistency
Landscaping	• Install high efficiency, xeriscape irrigation systems to reduce the amount of water devoted to landscaped areas, such as drip and bubbler irrigation and low-angle, low-flow nozzles on sprayheads. • Install and correctly program automated irrigation systems to reduce water use. • Install properly programmed EvapoTranspiration-based controllers on homeowners' properties. These are weather based controllers with greater efficiency. In addition, supply homeowners with information on how to properly program their controller using the Metropolitan Water District's guidelines as a reference. • Install moisture sensors and other similar irrigation technology to ensure that landscaping is watered only as needed. • Plant selection shall be based on species that are drought tolerant, heat resistant, and hardy. Native plant material should also be closely examined and considered for most landscape areas. • Prohibit the use of large turf areas in landscaping by substituting water-conserving native groundcovers or perennial grasses, shrubs, and trees.
Lighting	• Use shielded fixtures, avoiding overhead lighting of areas such as walkways. • Provide low-contrast lighting and use low-voltage fixtures and energy-efficient bulbs, such as compact fluorescent and light emitting diode bulbs. • Use automated occupancy sensors in nonresidential buildings that automatically shut off lights when rooms are unoccupied.
Building Envelop	• Install radiant barriers to reduce summer heat gain and winter heat loss. • Use natural ventilation techniques, such as operable windows, to take advantage of airflow for cooling interiors, reducing the amount of energy needed for cooling. • Install water- and energy-saving fixtures and appliances, such as showerheads, toilets, washing machines, clothes dryers, refrigerators, and dishwashers certified as Energy Star compliant. • Utilize a minimum insulation value of R30 in ceilings. • Install programmable thermostats in all units.
Water	• Install only low-water-consumption, Energy Star–compliant appliances and fixtures. • Install only sensor-operated faucets in nonresidential buildings. • Use water-saving landscaping techniques, such as drip irrigation systems and drought-tolerant plant species.
Energy	• Install only energy-efficient windows, such as models with spectrally selective low-e glass and with wood, vinyl, or fiberglass frames. • Incorporate building materials that take advantage of heat storage or thermal mass to reduce energy needed for heating and cooling interiors. Materials such as concrete, masonry, and wallboard store heat absorbed during the day and slowly release it throughout the evening, thereby moderating indoor temperatures over a 24-hour period.

Source: Spring Trails Specific Plan.

IMPACT 5.16-2: THE PROPOSED PROJECT WOULD NOT CONFLICT WITH THE CALIFORNIA AIR RESOURCES BOARD'S SCOPING PLAN. [THRESHOLDS GH-2]

Impact Analysis: While California alone cannot stabilize the climate, the state's actions set an example and drive global progress toward reduction of GHG. If the industrialized world were to follow the emission reduction targets established by California, and industrializing nations reduced emissions according to the lower emissions path (lower emissions IPPC scenario B1), medium or higher warming ranges of global temperature increases might be avoided, along with the most severe consequences of global warming. The Scoping Plan identifies that reducing GHG emissions to 1990 levels means "cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels. On a per capita basis, that means reducing our annual emissions of 14 tons of CO_{2e} (13 MTons) for every man, woman, and child in California down to about 10 tons (9 MTons) per person by 2020."[9] A 30 percent per capita reduction, or approximately 4 MTons less GHG emissions per person, is necessary to achieve the emissions reduction of the Scoping Plan.

According to the Scoping Plan, a hard and declining cap will cover 85 percent of California GHG emissions reductions. The early actions and the percentage toward the GHG reduction goal of 169 MMTons that they achieve were shown in Table 5.16-2. Consequently, the emissions inventory in Table 5.16-4 would be reduced as a result of the GHG emissions reduction under the cap-and-trade program. A more detailed discussion follows of emissions reductions within the GHG emission sectors, consistency with statewide and regional efforts to reduce GHG emissions, and best performance standards identified for development projects to reduce GHG emissions.

Transportation Sector: Indirect Emissions

Statewide Strategies

In general, technology-forcing actions have been adopted by the EPA and California to reduce GHG emissions from cars and trucks, the state's largest source of GHG emissions. For instance, the average fleet fuel economy of California's vehicle fleet is anticipated to improve as a result of adoption of the new CAFE standards in December 2007 and California's Clean Car law (the Pavley GHG standards), which the EPA granted the waiver request on June 30, 2009. The Pavley fuel efficiency standards would reduce the average fleet GHG emissions from vehicles in California by 25.4 percent by 2013 and 42.8 percent by year 2020 (CARB 2008). In addition, the carbon content of gasoline is anticipated to be approximately 10 percent lower by year 2020 as a result of California's low-carbon-content fuel legislation, and would be implemented incrementally until the target reduction is reached. Table 5.16-4 does not take into account emissions reductions from these recently adopted legislative requirements.

Regional Strategies

Traffic trips associated with new and redevelopment projects contribute indirect emissions of air pollutants. The most effective way to reduce emissions is through a substantial reduction in vehicle trips and trip lengths. While local and regional governments cannot directly regulate vehicles and vehicle emissions, they can implement land use regulations and strategies to reduce VMT. Such strategies can include better integration of land use and transportation planning to reduce trip lengths between residential areas to employment centers and amenities, and to promote greater public transit use and alternative modes of transportation. Strategies to implement such land use policy can either be incentive based, such as

[9] It should be noted that GHG emissions from the Transportation Sector in the scoping plan were based on emission factors from fuel consumption and not directly based on vehicle miles traveled. Consequently, a direct comparison to project-related per capita emissions and the per capita assumptions of the Scoping Plan is not applicable.

compliance with the SCS, or penalty based, such as indirect source review. Regional strategies include the SCS for the SCAG region and the Compass Blueprint 2% Strategy.

Integration of the SCS or Alternative Planning Strategies with local general plans will be key to the achievement of these goals. In 2007 the CEC published *The Role of Land Use in Meeting California's Energy and Climate Change Goals.* In this publication, the CEC acknowledged that California's land use patterns shape energy use and the production of GHG. Transportation contributes a large percentage of the state's GHG emissions and research shows that increasing a community's or development's density and accessibility to job centers are the two most significant factors for reducing VMT through design (CEC 2007). Consistency with the SCS for the SCAG region would reduce VMT and trips within the region as a whole.

Regional GHG emissions reduction targets and the SCS have not yet been established for the SCAG region. According to the 2008 Regional Comprehensive Plan (RCP), SCAG's Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends. In general, VMT serves as a proxy for jobs/housing balance, urban design, transit accessibility, and other urban form issues. The Compass Blueprint is a component of the Land Use and Housing element of the 2008 RCP in achieving sustainable land uses and policies. The framework of the Compass Blueprint strategy focuses on four areas in achieving sustainable development: mobility, livability, prosperity, and sustainability. Key aspects of the Compass Blueprint in reducing VMT include developing housing near regional employment centers and amenities and encouraging transit-oriented development.

The proposed project would be consistent with one aspect of the mobility element of the Compass Blueprint by locating residential development near an employment center (i.e., the City of San Bernardino). However, the project is not a mixed-use development; it is a proposed master planned single-family residential development. Additionally, it would not be in proximity to amenities, as the majority of amenities would be approximately four miles or more from the project site, nor would it be near readily accessible public transit, as the nearest transit stop would be approximately over a mile to the east.



The above analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Electricity, Area Sources (Commercial and Residential), and Recycling and Waste Sectors

Statewide Strategies

Energy use and related activities for buildings is the second largest contributor to California's GHG emissions (CARB 2008). Energy efficiency and conservation measures are identified as a best performance standard for development projects. In general, there are two strategies for reducing GHG emissions from the Electricity sector: 1) reducing the amount of energy consumed; and 2) reducing the GHG emissions resulting from electricity production. The project would have little control over the latter, and the CEC has determined that the success of reducing GHG emissions from electricity production depends largely on the success of California's renewable-energy and energy-efficiency programs. Consequently, GHG emissions reductions can be achieved through the design and construction of new green buildings, because green buildings offer a comprehensive approach to reducing GHG emissions across multiple sectors (Energy Use, Water, Waste, and Transportation).

Water use also requires significant amounts of energy. Approximately one-fifth of the electricity and a third of the non–power plant natural gas consumed in the state are associated with water use. Measures to increase water use efficiency and reduce water demand would reduce electricity demand from the Water sector, therefore reducing GHG emissions. The California Water Resources Control Board has prepared a draft

20X2020 Water Conservation Plan that outlines the state's strategies to achieve a 20 percent reduction in per capita urban water use statewide by 2020.

The Scoping Plan considers using the green building framework as a mechanism that enables GHG reductions in other sectors. In July 2008, the California Building Standards Commission adopted the Green Building Standards Code that includes mandatory features for residential structures and voluntary standards for nonresidential structures. As of January 1, 2010, all new structures would be constructed to achieve the performance standards of the 2008 Building and Energy Efficiency Standards, which are approximately 15 percent more energy efficient than the 2005 Building and Energy Efficiency Standards. The new standards also require improvements in water efficiency for plumbing fixtures and a target of 50 percent landscape water conservation reduction. While the current code is voluntary for nonresidential structures, the Commission is in the process of developing mandatory provisions in the 2010 edition of the California Green Building Standards Code.

The above analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

CARB Scoping Plan GHG Emissions Reduction Measures

Transportation, energy efficiency, and water reductions measures implemented by the state as outlined in CARB's Scoping Plan would reduce project-related GHG emissions. As shown in Table 5.16-7 implementation of transportation, water, and energy efficiency measures of CARB's Scoping Plan would reduce emissions by 39 percent, or 3,863 MTons of GHG in year 2020 from BAU. The proposed project would be consistent with the statewide emissions reduction strategies outlined in the Scoping Plan. Therefore, impacts associated with consistency with plans to reduce GHG emissions are considered less than significant. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Table 5.16-7
2013 and 2020 Annual GHG Emissions Inventory with Scoping Plan GHG Emissions Reductions

Source	GHG Emissions MTons per Year2020	Percent of 2020 Total
Transportation Sector[1]	2,207	38%
Electricity Sector		
Purchased Energy[2, 3]	1,935	33%
Water Demand and Treatment[4]	426	9%
Total Energy Emissions	2,467	43%
Recycling and Waste[5]	168	3%
Commercial and Residential Sectors	960	17%
Amortized Construction Emissions	189	2%
Total	**5,885**	**100%**
Decrease from BAU	3,863	39% from BAU

MTons = metric tons; BAU: Business-as-usual

[1] Pavley 2 would require an average fleet fuel economy of new cars of 43 mpg by 2020 compared to an existing average of 25 mpg. For Future Year 2020, based on 42.8 percent increase in fuel efficiency (CARB 2008).

[2] Based on an increase in 15 percent energy efficiency from the 2005 to 2008 Building and Energy Efficiency Standards (Title 24, California Building Code).

[3] Existing renewable energy production is currently 12 percent of the statewide energy supply, and the California Renewables Portfolio Standard goal is 20 percent by 2010. For Future Year 2020, based on an increase in renewable energy production of 21 percent.

[4] Based on a 20 percent decrease in per-capita water use in accordance with the statewide Final 20X2020 Water Conservation Plan (SWRCB 2010).

[5] Based on the Rationalized Compliance Path of the A-Low Carbon Fuel Standard for California Technical Report. For Future Year 2020, assumes 10 percent decrease (CARB 2008).

5.16.4 Cumulative Impacts

As described under Impact 5.16-1, project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Consequently, it is speculative to determine how an individual project's GHG emissions would impact California. Therefore, impacts identified under Impact 5.16-1 are not project-specific impacts to global warming but the project's contribution to this cumulative impact. Because the project's GHG emissions were considered significant with mitigation, the project's GHG emissions and contribution to global climate change impacts are considered cumulatively considerable and therefore cumulatively significant. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.16.5 Existing Regulations

- Global Warming Solutions Act (AB 32)
- Senate Bill 375 (SB 375)
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (SB 375)
- Pavley Fuel Efficiency Standards (AB1493)[10]
- Title 24 California Code of Regulations (California Building Code)
- Appliance Energy Efficiency Standards (Title 20 California Code of Regulations)

[10] On June 30, 2009, the EPA granted California the authority to implement the Low Carbon Fuel and Pavley Fuel Efficiency Standards beginning with the 2009 model year car.

- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards)
- Title 17 California Code of Regulations (Low Carbon Fuel Standard)
- California Water Conservation in Landscaping Act of 2006 (AB 1881)
- Statewide Retail Provider Emissions Performance Standards (SB 1368)
- Renewables Portfolio Standards (SB 1078)
- CARB Rule 2485(13 CCR 2485): Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling
- CARB Rule 2449(13 CCR 2449): In-Use Off-Road Diesel Idling Restrictions
- 40 CFR Part 85 – Control of Air Pollution from Mobile Sources
- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines

5.16.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: 5.16-2.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.16-1 Project-related greenhouse gas emissions would significantly cumulatively contribute to global climate change impacts in California.

5.16.7 Mitigation Measures

The following mitigation measures are based on the California Attorney General's, CARB's, and the Governor's Office of Planning and Research's list of generally applicable mitigation for global climate change impacts and include mitigation measures to increase energy efficiency, land use mitigation measures, and measures to reduce transportation and motor vehicle demand.

Impact 5.16-1

Construction

16-1 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Development Services Director that the project uses recycled materials for at least 5 percent of construction materials. Recycled materials may include salvaged, reused, and recycled content materials. Recycled and/or salvaged building materials shall be shown on building plans submitted to the City.

16-2 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Development Services Director that the project uses 20 percent locally manufactured and produced building materials, which are defined as materials manufactured or produced within 500 miles of the project.

16-3 Prior to the issuance of building permits, applicants for Spring Trails shall prepare a construction waste management plan to reduce construction debris and material by diverting at least 50 percent of the total of all project-related nonhazardous construction and debris from landfills to recycling or reuse operations (based on the C&D requirements of Section 6-3.602 of the City of Ontario Municipal Code). The construction waste management plan shall identify the amount of construction debris by type that would be generated and the maximum weight of each material type that can feasibly be diverted from landfills.

16-4 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Development Services Director that the project uses insulation with at least 75 percent recycled content, such as cellulose, newspaper, or recycled cotton.

16-5 Applicants for new development proposals in Spring Trails shall require the construction contractor to provide carpooling for workers to and from the work site on days that construction activities require 200 or more workers. These requirements shall be demonstrated to the Development Services Director prior to the issuance of grading permits and shall be noted on the grading plan cover sheet and discussed at all pregrade meetings.

Operation

Energy Efficiency

16-6 Prior to the issuance of a building permit, residential development plans shall be required to demonstrate that the overall project exceeds 2008 Building and Energy Efficiency Standards (Title 24) for energy efficiency by 15 percent. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, and utilizing natural ventilation. Other techniques include installing insulation (high R value) and radiant heat barriers, compact fluorescent and/or light emitting diode bulbs, low-e window glazing or double-paned windows, energy-efficient appliances (e.g., Energy Star appliances), cool roofs, and cool pavement.

16-7 Applicants shall provide all homeowners with information regarding energy-efficiency rebate programs offered by utility providers and government agencies.

Water Conservation and Efficiency

16-8 Applicants for new developments in Spring Trails shall submit evidence to the satisfaction of the Development Services Director that all toilets, urinals, sinks, showers, and other water fixtures installed onsite shall be ultra-low-flow water fixtures that exceed the Uniform Plumbing Code. Examples are: 1.28 average gallons per flush high efficiency toilets, 2 gallon per minute (gpm) efficient bathroom faucets, 2.2 gpm efficient kitchen faucets, and 2.2 gpm efficient shower heads.

16-9 Mulch planting beds and apply compost and environmentally friendly fertilizers to promote healthy topsoil, maximize plant growth, and reduce plant replacement in the Spring Trails community parks and landscaping. This also reduces the need for longer or more frequent irrigation run times.

Forest Resources

3-12 Significant tree resources that are removed from the site during project development shall be replaced at a 1:1 ratio or at the exchange ratios specified below. Significant tree resources are defined as any native or nonnative ornamental tree—excluding species of the *Eucalyptus* genus—that is healthy, structurally sound, and over 20 feet in height. Prior to the issuance of grading permits, a certified arborist shall conduct an inventory of all significant trees within the development footprint. This inventory shall be used to determine the number and types of significant trees that will be impacted and the subsequent replacement quantities. The number of replacement trees shall be, at a minimum, 220 trees. Should the aforementioned inventory determine that a greater number of significant trees will be impacted, then that quantity shall be

used in determining replacement quantities. The following exchange ratios shall be used: 1) one 36-inch box tree is equivalent to one replacement tree; 2) five 15-gallon trees are equivalent to one replacement tree; 3) ten 5-gallon trees are equivalent to one replacement tree; and 4) fifteen one-gallon trees are equivalent to one replacement tree.

During the development of the project, the project applicant shall incorporate the recommendations as set forth in the project arborist report (Integrated Urban Forestry 1998). A certified arborist shall be retained at the developer's expense to oversee the implementation of these requirements and to specify other requirements as deemed appropriate. The measures to be followed include, but are not limited to, specified protocols for the following: 1) the removal of nonnative trees from the site; 2) the removal and transplantation, when feasible, of structurally sound and healthy native trees to other areas of the project site; 3) the installation of tree protection barriers on all trees to be preserved that are within the reach of vehicles and equipment; 4) tree protection training of construction personnel by a certified arborist; 5) irrigation of trees where the natural water supply is interrupted or diminished or where protected trees may require additional water to endure construction-induced stresses; 6) subsequent replacement of any trees that are damaged or have not survived transplantation and relocation; and 7) implementation of the tree replacement plan, as outlined in the first paragraph of this measure. This measure shall be implemented to the satisfaction of the Development Services Director.

5.16.8 Level of Significance After Mitigation

Impact 5.16-1

Implementation of Mitigation Measures 16-1 through 16-5 would reduce indirect emissions from waste disposal and from emissions related to the transportation of workers to and from the project site. Mitigation measures 16-6 through 16-9 would require applicants to increase energy efficiency and water conservation in the design and construction of the proposed. Therefore, implementation of these mitigation measures would reduce direct GHG emissions from area sources and energy use. With adherence to the project design features and Mitigation Measures 16-1 through 16-9, direct GHG emissions from area sources, energy use, and waste would be less than significant. While reduction and mitigation measures have been incorporated to reduce GHG emissions from direct sources of GHG emissions (i.e., area sources and energy), GHG emissions from the transportation sector would still be substantial and the project would remain inconsistent with transportation strategies aimed at reducing VMT by incorporating mixed-use or locating services and transit within ½ mile. Therefore, GHG impacts from implementation of the project would be significant and unavoidable.

5.17 FOREST RESOURCES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Spring Trails Specific Plan (proposed project) to impact forest resources in the County of San Bernardino and the City of San Bernardino.

The CEQA Guidelines as updated and effective March 18, 2010, added forest resources to the Appendix G checklist (Section II, *Agriculture and Forest Resources,* parts c, d, and e). Project impacts to agricultural resources were determined to be less than significant in the Initial Study, included as Appendix A1. This section addresses the forest resource checklist questions, including impacts to timber and other commercial forestry products. Other issues associated with the onsite tree resources include aesthetics, biology, recreation, greenhouse gas, and water quality, which are discussed elsewhere in this Draft EIR. The analysis in this section is based in part on the following technical reports:

- *Arborist Report, Martin Ranch, San Bernardino County*, Integrated Urban Forestry, 1998
- *Post-disturbance Arborist Report Update, Martin Ranch Project Site,* Michael Brandman Associates, August 2, 2007
- *Spring Trails Forest Resource Analysis*, Dudek, September 2, 2010

Complete copies of these studies are included in the Technical Appendices to this DEIR (Volume II, Appendices D1 and D4).

5.17.1 Environmental Setting

Federal, state, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Regulatory Setting

Federal

San Bernardino National Forest Land and Resource Management Plan

The northern portion of the project site (approximately 160 acres) is within the boundaries of the San Bernardino National Forest (SBNF). Long-range goals and objectives for management of the SBNF are set forth in the San Bernardino National Forest Land and Resource Management Plan, adopted in 1988. The forest plan establishes the management and associated long-range goals and objectives for the SBNF; specifies standards, guidelines, approximate timing, and vicinity of the practices necessary to achieve that direction; and establishes monitoring and evaluation requirements and standards needed to ensure that the direction is carried out and to determine how well outputs and effects were predicted.

Although the project site is partially within the SBNF, the land is privately owned and is not part of the forest plan. The Record of Decision of the San Bernardino National Forest Land Management Plan, written by the Regional Forester for the Pacific Southwest Region, establishes the land to be included in the forest plan. The decision "…applies only to the San Bernardino National Forest and does not apply to any other federal, state, or private lands, although the effects to these lands and the effects of [the] decision on lands surrounding the national forest have been considered."

State

Forest Land and Timberland Classification

Forest Land: California Public Resources Code (PRC) Section 12220. Land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Timberland: California PRC Section 4526. Land—other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection as experimental forest land—that is available for and capable of growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others.

Timberland Production Zone: California PRC Section 51104. An area that has been zoned pursuant to PRC Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses.

Fire and Resource Assessment Program

The California Department of Fire and Forestry (CAL FIRE) published the Fire and Resource Assessment Program (FRAP) report to assess the amount and extent of California's forests and rangelands, analyze their conditions, and identify alternative management and policy guidelines with an eye toward sustainable forest management practices (CAL FIRE 2003a). As part of FRAP, CAL FIRE produced maps showing both the land cover and landscape management areas for the State of California.

Timberland Productivity Zones

The Timberland Productivity Act of 1982 was adopted to protect properties conducting timber operations from being prohibited or restricted due to conflict or apparent conflict with surrounding land uses. The Act requires counties and cities in California with productive timberland to establish timberland productivity zones (TPZ) to prevent the conversion of these lands to other land uses.

Local

City of San Bernardino Tree Ordinance

The City of San Bernardino has adopted an ordinance (City of San Bernardino Municipal Code Section 19.28.090) that is designed to conserve important tree resources. The ordinance states:

> Removal of healthy, shade providing, aesthetically valuable trees shall be discouraged. In the event that more than five trees are to be cut down, uprooted, destroyed or removed within a 36 month period, a permit shall first be issued by the Department of Parks, Recreation and Community Services.
>
> Prior to any permit issued for tree removal, all existing trees on-site shall be surveyed by the Department of Parks, Recreation and Community Services at the developer's expense. Unless there is a pre-approved tree replacement plan, each tree that is removed in a new subdivision and is considered to be of significant value by the Department shall be replaced with a 36-inch box specimen tree in the subdivision in addition to any other required landscaping. Such a plan does not necessarily require a tree-for-tree replacement provision.

Commercial tree farms, City Government projects, and individual, single-family residential lots less than one acre shall be exempt from this provision.

Existing Forest and Timberland Uses

Arborist reports were prepared for the site in 1998 and 2007 (IUF 1998; MBA 2007c). The 2007 report was prepared as an update of conditions on the site following the October 2003 Old Fire. A general inventory and assessment of the condition of the trees on the site were undertaken during both the 1998 and 2007 surveys. The 2007 report found that the native tree species on the site had vigorously recovered from the effects of the 2003 fire.

The 1998 survey found approximately 4,000 trees on the project site. Approximately 34 percent were native tree species, while the remaining 66 percent were eucalyptus and nonnative ornamental species. Eucalyptus trees constituted the majority of the nonnative species, with approximately 2,560 trees located on the site. These trees were originally planted for lumber and fuel wood. Evidence was present to suggest that the eucalyptus on the site had been harvested numerous times. Evidence also suggested that the trees had been damaged during previous fire events. Both of these determinations were made based on the presence of stump sprouts that likely became established following fire damage or coppicing (i.e., a way of harvesting trees that grow shoots from stumps or roots). A number of other nonnative species were also observed on the site, including tree-of-heaven, olive, and fruit-bearing orchard trees such as apricot, peach, and apple trees.

The 1998 survey found approximately 1,350 native trees on the project site, not including small trees or multitrunked shrubs. Native trees included California bay, California black walnut, white alder, California sycamore, and canyon live oak. See Table 5.3-3 for summary of the native tree species identified on the site during the 1998 survey.

5.17.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

FOR-1 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)).

FOR-2 Result in the loss of forest land or conversion of forest land to non-forest use.

FOR-3 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use.

5.17.3 Environmental Impacts

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A*, Alternative (Overhead Electric Lines) Development Plan,* is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of

residential lots. The alternative plan contains 304 single-family detached units compared to 307 units proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their respective impacts to forest resources.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners, with four of the lots occupied. The annexation area is not located within the boundaries of the San Bernardino National Forest. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels, and therefore would not contribute to impacts related to forest resources.

The arborist reports prepared for the project site determined that development of the proposed project would result in the removal of approximately 2,400 trees. The bulk of native trees on the site are located within and around Cable Creek or in the northern portion of the site (see Table 5.3-3) and are not within the development footprint (see Figure 5.1-1). These trees would not be impacted by the project. Of the approximately 2,400 trees within the development footprint, only about 220 of these (less than 1 percent) are native species, mostly walnut and sycamore. The majority of the trees requiring removal are part of a remnant eucalyptus plantation (approximately 2,170 trees). The remaining nonnative trees that would be removed consist of approximately 10 ornamental nonnative trees.

IMPACT 5.17-1: THE PROPOSED PROJECT SITE IS NOT CONSIDERED FOREST LAND, TIMBERLAND OR ZONED AS TIMBERLAND PRODUCTION. [THRESHOLD FOR-1]

Impact Analysis:

The following analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Forest Land

Implementation of the proposed project would develop single-family residences and result in the removal of 220 native tree species on the project site. However, the project site is not considered forest land because it cannot and has not supported 10-percent native tree cover (Dudek 2010b). Therefore, the proposed project would conflict with project site's ability to continue to be designated as forest land.

Timberland

The project site was previously been used for agriculture, and a previous landowner grew eucalyptus trees to be used as windrows for crop protection, with a secondary use as firewood (Dudek 2010). Despite the presence of the eucalyptus trees, the site does not include timberland as defined by PRC Section 4526, which would require the project site to be capable of growing "a crop of trees of any commercial species used to produce lumber and other forest products." Per Section 895.1 of Title 14 of the California Code of Regulations (CCR), "commercial species" is defined as "those species found in group A and those in group B that are found on lands where the species in group A are now growing naturally or have grown naturally in the recorded past." The commercial species list for the Southern Forest District is shown in Table 5.17-1.

Table 5.17-1
Southern District Commercial Species List

Group A	
Coulter pine (*Pinus coulteri*)	Douglas fir (*Pseudotsuga menziesii*)
Jeffrey pine (*Pinus jeffreyi*)	California red fir (*Abies magnifica*)
Ponderosa pine (*Pinus ponderosa*)	White fir (*Abies concolor*)
Sugar pine (*Pinus lambertiana*)	Incense cedar (*Libocedrus decurrens*)
Lodgepole pine (*Pinus contorta*)	Coast redwood (*Sequoia sempervirens*)
Monterey pine (*Pinus radiata*)	Sierra redwood (*Sequoiadendron giganteum*)
Western white pine (*Pinus monticola*)	Mountain hemlock (*Tsuga mertensiana*)
Group B	
White alder (*Alnus rhombifolia*)	Pacific madrone (*Arbutus menziesii*)
Cottonwood (*Populus fremontii*)	California black oak (*Quercus kelloggii*)
Eucalyptus (*Eucalyptus* sp.)	Tanoak (*Lithocarpus densiflorus*)

Source: Section 895.1, Title 14 of CCR.

Although eucalyptus trees are included in group B, the project site does not have any naturally occurring trees of species that are included in group A (see Table 5.3-3; IUF 1998; MBA 2007). Therefore, per this definition, the project site does not meet the definition of timberland. Implementation of the proposed project would not conflict with or cause a rezoning of any designated timberland areas.

Timberland Production

The project site is in the Verdemont community of unincorporated San Bernardino County and in the City of San Bernardino's sphere of influence (SOI). The project site is not currently zoned for timberland production per CPRC 51104. The site is currently subject to County of San Bernardino's General Plan and Zoning Code. As shown in Figure 4.6 of the County's General Plan, "Land Use Designations," the northern portion of the site, approximately 160 acres, is designated as private unincorporated land within the San Bernardino National Forest. The southern portion of the site, approximately 190.6 acres, is designated Rural Living (RL-5), which allows up to one dwelling unit per five acres. Since the project site is within the City of San Bernardino's SOI, the entire project site is currently prezoned by the City as Residential Estate (RE), allowing one dwelling unit per acre. Therefore, implementation of the proposed project would not conflict with or cause a rezoning of any timberland production zone, and impacts would be less than significant.

IMPACT 5.17-2: THE PROPOSED PROJECT WOULD REMOVE 220 NATIVE TREES, REQUIRING REPLACEMENT OF TREES PER THE CITY'S TREE ORDINANCE. [THRESHOLDS FOR-2 AND FOR-3]

Impact Analysis: Implementation of the project would involve the removal of approximately 2,400 trees within the development footprint. Approximately 220 of these are native species and 2,170 are eucalyptus. This analysis is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

Native Tree Species

The areas of Cable Creek, Cable Canyon, and Meyer Creek contain the majority of native trees (see Table 5.3-3). However, the proposed project would be required to comply with the City's Tree Ordinance, which would require replacement of any removed native trees (see Impact 5.3-5). Native species of trees within this affected area would have the potential to be impacted by development from direct removal of forest resources and indirectly from forest resources removed as a result of fuel modification activities. Areas within

Fuel Modification Zone B would require removal of all undesirable plant species, while areas within Zone A would require a 50 percent thinning of native species.

The City's Tree Ordinance requires that "significant" trees be mitigated. In determining what constitutes a significant tree, the initial arborist report prepared for the site (IUF 1998) determined that healthy, structurally sound native and ornamental trees over 20 feet in height would be considered significant. Approximately 220 trees on the site met these criteria during the 1998 tree inventory. Thus the removal of these trees during project development would be considered a potentially significant impact and thus subject to the requirements of the City's Tree Ordinance. To ensure that removed native trees are adequately replaced and to comply with the City's Tree Ordinance, impacts to forest resources are considered potentially significant without incorporation of Mitigation Measure 3-12.

Eucalyptus Trees

Eucalyptus trees present a particular problem for this site because they are nonnative and a severe fire hazard (see Impact 5.3-5). Eucalyptus can also be considered an invasive species (Dudek 2010). They were formerly included on List A of invasive species by the California Exotic Pest Plant Council (CalEPPC). List A of the Exotic Pest Plants of Greatest Ecological Concern in California consists of the most invasive wildland pest plants, documented as aggressive invaders that displace natives and disrupt natural habitats. The list highlights the nonnative plants that are serious problems in wildlands such as national forests. The project site shares its northern border with the San Bernardino National Forests and the eucalyptus trees are a potential threat to native plant communities in the national forest.

The 1999 CalEPPC exotic pest plant list was updated by the California Invasive Plant Council in 2006, and the status of blue gum eucalyptus changed to "moderate." Moderate invasive species have substantial and apparent ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal. The plant assessment form identifies this species' impacts on the abiotic and biotic ecosystem processes. Impacts include:

- Changes to fire intensity (increase)
- Affects local soil moisture regimes and light availability
- Litter reduces nitrogen mineralization rates in soil
- Allelopathic effects on other species
- Alters canopy structure, displacing most native species
- Inhibits germination and growth of native plant species
- Eliminates shrub and herbaceous layers
- Replaces a diversity of native plant species, including forage for wildlife
- Purported to cause mortality in native bird species
- May disrupt native bird migratory patterns

Based on these potential effects, the eucalyptus species poses a considerable threat to native tree and plant populations within and surrounding the project site.

The USDA Forest Service identifies the blue gum eucalyptus as highly flammable and recommends the tree not be planted near homes and other structures (Dudek 2010). The understory of dense eucalyptus stands are devoid of vegetation. Once the species becomes established it may suppress or eliminate other species. The leaves release a number of terpenes and phenolic acids that may be responsible for the lack of accompanying vegetation in plantations. This threatens the native trees and vegetation that occur in the

adjacent drainages on the project site and surrounding areas. These drainages offer optimal growing conditions for the eucalyptus to become established, proliferate, and suppress native vegetation.

Lastly, Section 12220(g) of the PRC defines “forest land" as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The land where the eucalyptus trees are currently located cannot be identified as forest land because it cannot and has not supported 10 percent native tree cover. Furthermore, Section 4793(f) of the PRC defines "forest land conservation measures" as measures designed to protect, maintain, or enhance the forest resource system, including soil and watershed values, diversity of forest species, and protection of a forest stand from fire. These measures include thinning, shaded fuel breaks, and other land treatments or forest resource improvement projects consistent with PRC Section 4794 (Dudek 2010). Based on these considerations, the removal of the eucalyptus from the project site can be considered an overall benefit in protecting the adjacent native forest stands from fire and in maintaining a diversity of native species; therefore, it is a less than significant impact to forest resources.

5.17.4 Cumulative Impacts

The project would encroach upon forest lands. However, implementation of the project would not result in significant and unavoidable impacts to forest resources with incorporation of mitigation measures. Therefore, the proposed project would not cumulatively contribute to a loss of forest land or timberland, and cumulative impacts to forest resources would be less than significant. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.17.5 Existing Regulations and Standard Conditions

City of San Bernardino

- Municipal Code Section 19.28.090 (Tree ordinance)

5.17.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.17-1.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.17-2 The proposed project would remove 220 native trees, requiring replacement of trees per the City’s tree ordinance.

5.17.7 Mitigation Measures

Impact 5.17-2

Mitigation Measure 3-13 from Section 5.3, *Biological Resources*, also applies to impacts to forest resources.

3-13 Significant tree resources that are removed from the site during project development shall be replaced at a 1:1 ratio or at the exchange ratios specified below. Significant tree resources are defined as any native or nonnative ornamental tree—excluding species of the *Eucalyptus* genus—that is healthy, structurally sound, and over 20 feet in height. Prior to the issuance of

grading permits, a certified arborist shall conduct an inventory of all significant trees within the development footprint. This inventory shall be used to determine the number and types of significant trees that will be impacted and the subsequent replacement quantities. The number of replacement trees shall be, at a minimum, 220. Should the aforementioned inventory determine that a greater number of significant trees will be impacted, then that quantity shall be used in determining replacement quantities. The following exchange ratios shall be used: 1) one 36-inch box tree is equivalent to one replacement tree; 2) five 15-gallon trees are equivalent to one replacement tree; 3) ten 5-gallon trees are equivalent to one replacement tree; and 4) fifteen 1-gallon trees are equivalent to one replacement tree.

During the development of the project, the project applicant shall incorporate the recommendations as set forth in the project arborist report (Integrated Urban Forestry 1998). A certified arborist shall be retained at the developer's expense to oversee the implementation of these requirements and to specify other requirements as deemed appropriate. The measures to be followed include, but are not limited to, specified protocols for the following: 1) the removal of nonnative trees from the site; 2) the removal and transplantation, when feasible, of structurally sound and healthy native trees to other areas of the project site; 3) the installation of tree protection barriers on all trees to be preserved that are within the reach of vehicles and equipment; 4) tree protection training of construction personnel by a certified arborist; 5) irrigation of trees where the natural water supply is interrupted or diminished or where protected trees may require additional water to endure construction-induced stresses; 6) subsequent replacement of any trees that are damaged or have not survived transplantation and relocation; and 7) implementation of the tree replacement plan, as outlined in the first paragraph of this measure. This measure shall be implemented to the satisfaction of the Development Services Director.

5.17.8 Level of Significance After Mitigation

Impact 5.17-2

Incorporation of Mitigation Measure 3-13 would ensure that any removed native tree identified as significant would be replaced with another native tree. Overall, the mitigation measure includes protocols for removal and relocation of native trees, tree protection during construction, and the preservation of specific trees on the project site. Performance measures are provided to mandate replacement ratios and the types and sizes of specimens required to meet the terms of the mitigation. Measures are also included to mandate improvements to tree resources in specific areas of the site and would ensure the protection and preservation of the remaining natives onsite. As this mitigation would replace all removed native trees and preserve all other native tree species onsite, potential impacts associated with loss of forest resources would be reduced to a less than significant level.

6. Significant Unavoidable Adverse Impacts

Chapter 1, *Executive Summary*, contains Table 1-2, which summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. While mitigation measures would reduce the level of impact, the following impacts would remain significant, unavoidable, and adverse for the preferred development plan and the overhead electric line alternative plan, after mitigation measures are applied:

Air Quality

Impact 5.2-1

The proposed project is not consistent with the applicable air quality management plan because construction-related air pollutant emissions would exceed the South Coast Air Quality Management District's regional and localized emission thresholds. Mitigation measures used to control construction and operational emissions would reduce project and cumulative level impacts but they would remain significant and unavoidable.

Impact 5.2-2

Construction activities associated with the proposed project would generate short-term emissions that exceed SCAQMD'S regional significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ and would significantly contribute to the nonattainment designations of the South Coast Air Basin for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Mitigation measures would reduce the project's construction-related impacts but the project- and cumulative-level impacts would remain significant and unavoidable.

Impact 5.2-4

Construction activities associated with grading operations could expose sensitive receptors to substantial pollutant concentrations of PM_{10} at the existing onsite residence and the surrounding offsite residences. Mitigation measures would reduce the project's construction-related impact on sensitive receptors but it would remain significant and unavoidable.

Noise

Impact 5.10-5

Project-related construction activities would result in temporary noise increases at the existing onsite residence and surrounding noise-sensitive receptors due to the length of the construction period, that is, approximately three years. Mitigation would reduce the project's impact on local sensitive receptors but it would remain significant and unavoidable.

Transportation and Traffic

Impact 5.14-2

There are two roadways identified in the CMP that would be impacted by project traffic: I-215 freeway and I-15 freeway.

Four segments of these two freeways are expected to have an LOS of F during morning peak hours with or without the project in year 2035, and six segments are expected to have an LOS of F during evening peak hours with or without the project in year 2035. All of these segments, except the northbound and southbound segments of I-15 between Sierra Avenue and Glen Helen Parkway, are included in the Caltrans improvement plans for the Devore interchange.

With improvements, two of these freeway segments would operate at acceptable levels. However, six freeway segments would continue to operate at an unacceptable LOS for year 2035:

- The I-215 freeway segment between Palm Avenue and Devore Road (northbound and southbound)
- The I-215 freeway segment between Devore Road and I-15 (northbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (northbound and southbound).
- The I-15 freeway segment between I-215 and Glen Helen Parkway (northbound).

Spring Trails would generate traffic that would contribute to the unacceptable levels of service on these freeway segments. Additionally, mainline improvements to the I-15 and I-215 in the project area are not included in a fee program at this time. There are no feasible mitigation measures to reduce the significant impacts. As a result, these impacts are significant and unavoidable.

Greenhouse Gas Emissions

Impact 5.16-1

Project-related construction activities would generate 5,660 metric tons (MTon) of CO_{2e} and operational activity would generate about 9,559 MTons of CO_{2e}. Mitigation measures would reduce GHG emissions from construction activities, area sources, energy use, and waste and recycling activities to levels that are less than significant; however, the vehicle GHG emissions would not be reduced to levels that are less than significant, and project-generated vehicle emissions of GHG would create significant and unavoidable impacts.

7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- "The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (15126.6[b]).



- "The specific alternative of 'no project' shall also be evaluated along with its impact" (15126.6[e][1]).

- "The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6[e][2]).

- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project" (15126.6[f]).

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1]).

- "For alternative locations, "only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR" (15126.6[f][2][A]).

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (15126.6[f][3]).

For each development alternative, this analysis:

- Describes the alterative
- Analyzes the impact of the alternative as compared to the proposed project
- Identifies the impacts of the project that would be avoided or lessened by the alternative
- Assesses whether the alternative would meet most of the basic project objectives
- Evaluates the comparative merits of the alternative and the project

Per the CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

7.1.2 Project Objectives

As described in Section 3.3, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts:

1. Provide for the development of the site consistent with City's General Plan for this area within its sphere of influence.

2. Develop a high-quality, low-density residential community that optimizes the unique characteristics of the project site, including maximizing view opportunities.

3. Assure adequate roadway access to the development while preserving the integrity of surrounding communities.

4. Enhance City trail facilities by expanding the system and integrating project-site trails with existing and proposed hiking, equestrian, and bicycle trails within the surrounding community.

5. Comply with policies for land use development within and adjacent to the San Bernardino National Forest.

6. Minimize the development footprint and maximize available open space areas.

7. Design a safe community cognizant of natural conditions, including wildland fires, flooding, and seismic hazards.

8. Minimize environmental impacts associated with construction of improvements and long-term operation of the new community.

9. Create an attractive, viable project and realize a reasonable return on investment.

The ability of each project alternative to meet the project objectives is provided at the end of this section (Table 7-7).

7.1.3 Significant Impacts of the Proposed Project

Chapter 5, *Environmental Impacts*, includes a discussion of all potentially significant impacts of the proposed project. The analysis for each environmental category determines whether impacts would be significant. The following significant and unavoidable impacts have been identified in association with the development of the

proposed project. This alternatives section discusses how the selected alternative scenarios would reduce or eliminate these significant and unavoidable impacts.

Air Quality

Impact 5.2-1: The proposed project would conflict with or obstruct implementation of the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP) because construction-related air pollutant emissions would exceed the SCAQMD regional and local emission thresholds. Consequently, Impact 5.2-1 would be a significant and unavoidable project- and cumulative-level impact.

Impact 5.2-2: Construction activities associated with the proposed project would generate short-term emissions that exceed South Coast Air Quality Management District's regional significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ and would significantly contribute to the nonattainment designations of the South Coast Air Basin for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Consequently, Impact 5.2-2 would be a significant and unavoidable project- and cumulative-level impact.

Impact 5.2-4: Construction activities associated with grading operations could expose offsite sensitive receptors to substantial pollutant concentrations of PM_{10} and could expose the existing onsite receptor to substantial pollutant concentrations of both PM_{10} and $PM_{2.5}$. Consequently, Impact 5.2-4 would be a significant and unavoidable project-level impact.

Noise

Impact 5.10-5: Project-related construction activities would result in temporary noise increases at the existing onsite and surrounding noise-sensitive receptors due to the length of the construction period, approximately three years. Consequently, Impact 5.10-5 would be a significant and unavoidable project-level impact.

Transportation and Traffic

Impact 5.14-2: The proposed project would generate morning and evening peak hour vehicle trips on I-15 and I-215 freeway segments identified in the San Bernardino County Congestion Management Plan. With or without the project, all eight segments would operate at unacceptable levels of service by year 2035 during either the morning or evening peak hour. With improvements, two of these segments would operate at acceptable levels of service. The remaining six segments would operate at unacceptable levels of service during the morning or evening peak hour, with or without the project. In addition, there is no funding program identified for the improvements to these freeways. No mitigation measures can feasibly reduce the significant impacts to these segments.

Greenhouse Gas Emissions

Impact 5.16-1: Project-related greenhouse gas emissions would significantly cumulatively contribute to global climate change impacts in California (traffic-related).

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this Draft EIR (EIR).

Section 15126.6 of the CEQA Guidelines states that a range a reasonable alternatives "…that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" (Guidelines Sec. 15126.6[c]). The range of alternatives must not only reduce the environmental impacts of the proposed project, but they must also be reasonable options for the lead agency. Feasibility of alternatives may be based on site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site (Guidelines Sec. 15126.6[f][1]). For these reasons, certain alternatives were considered for the proposed project but because of constraints, they were not included in further analysis.

- Alternative Site
- Previous Project (2006)

Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (Guidelines Sec. 15126[5][B][1]). Key factors in evaluating potential offsite locations for EIR project alternatives include: 1) whether the site is currently vacant, 2) if it is in the same jurisdiction, 3) whether development as proposed would require a General Plan Amendment, and 4) whether the project applicant could reasonable acquire the parcel. A review of the City's 2005 General Plan was completed to determine whether existing vacant parcels within the City of San Bernardino would accommodate the proposed project. An alternative site location that provided infill residential development, as opposed to new development, could potentially reduce the proposed project's significant impacts. Although the project applicant does not own another parcel within the City that could be developed with the proposed residential use, a review was undertaken to determine the likelihood that another site may be available. Review of the City's General Plan indicates there are few areas for infill development that would be of a similar size as the proposed project and would be suitable for residential development. Most areas identified for infill development in the City are meant for office, commercial, and/or industrial land uses. Residential infill development is also encouraged in older residential neighborhoods, but residential infill in the City occurs mainly on a smaller scale than the proposed project. The lack of vacant residential lots that would provide an alternative to the proposed project makes an alternative site infeasible.

The previous site plan for the project site, as analyzed in the 2006 EIR, would not be a viable project alternative. Project access along Meyers Road was strongly opposed by local residents. The 2006 plan and Draft EIR received numerous public comments regarding the primary and secondary access road alignments, traffic on Meyers Road, and impacts on the community of Devore. The lack of public support would make the previous project site plan alternative unpractical and infeasible.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed in Section 7.1.1, the following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project but may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project/No Development Alternative
- No Project/Existing County General Plan Alternative
- Alternative Site Plan
- Reduced Daily Grading Alternative

An EIR must identify an "environmentally superior" alternative. Where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative

from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Short-term air quality, greenhouse gas, noise (construction), and traffic (operational) impacts were found to be significant and unavoidable for the propose project. Section 7.8 identifies the environmentally superior alternative.

The preferred land use (proposed General Plan and Development Code Update) is analyzed in detail in Chapter 5 of this DEIR.

Alternatives Comparison

The following statistical analysis (Table 7-1) summarizes land use for each of the project alternatives, including the proposed project.

Table 7-1
Alternatives Land Use Summary

	Proposed Project	*No Project/No Development*	*No Project/Existing County General Plan*	*Alternative Site Plan*	*Reduced Daily Grading*
Dwelling Units	307	NA	38	175	307
Density[1]	0.87 du/ac	NA	0.2 du/ac (1 du/5 ac)	0.49 du/ac	0.87 du/ac
Graded Area[2]	216.7 acres	NA	NA	147.5 acres	224.3 acres[3]

[1] The density is based on the total number of units over the entire project site (352.8 acres), rather than for the developed area, in order to provide a consistent comparison for each alternative on this table. In the case of the No Project/Existing County General Plan Alternative, the total project site is only the southern portion of the proposed project site (190.6 acres) since this is the only portion designated for development under the County General Plan.

[2] The total graded area includes grading for the onsite developed area and for offsite access roads.

[3] The total acres graded for the Reduced Daily Grading Alternative are different from the total acres graded in other sections of the EIR. Since the purpose of this alternative is to reduce the significant air quality impacts and the emissions of NOx of the proposed project, the acreage used is the same as for the air quality modeling, which is based on grading information provided in February 2009 from the civil engineer.

7.4 NO PROJECT/NO DEVELOPMENT ALTERNATIVE

7.4.1 Alternative Description

The No Project/No Development Alternative would preserve the existing physical conditions of the project site. It assumes there would be no development of any type nor would development occur under existing land use designation parameters.

This alternative would preserve the site for open space and would preclude the development of the site under the City or County General Plan land use designations. The low-density residential development and Spring Trails Specific Plan would not be implemented, and supporting infrastructure (i.e., roads and utility infrastructure) would not be built. With this alternative, the site would remain open for future land use proposals.

7.4.2 Aesthetics

The development of the project site with the proposed 307 residential units would change the physical landscape and would produce new sources of light and glare. Specific Plan development standards and design features would reduce potentially significant light and glare impacts to less than significant levels.

The No Project/No Development Alternative would not change the physical characteristics of the site and would not introduce new light sources to the project site. No impacts are anticipated with this project alternative. Impacts under this alternative would be substantially less than with the proposed project.

7.4.3 Air Quality

The construction activities of the proposed project would emit air pollutant concentrations that would exceed local and regional emission thresholds, expose onsite and offsite sensitive receptors to substantial pollution concentrations, and contribute to the nonattainment air pollutant designations of the South Coast Air Basin. Tables 5.2-13 and 5.2-14 in Section 5.2, *Air Quality*, show construction-related air quality emissions at the regional and local significance levels.

This alternative would eliminate short-term construction-related air quality impacts associated with the proposed project. The site, with the exception of the single existing onsite residence, would not generate activity or emissions. In comparison to the proposed project, this alternative would eliminate significant short-term regional air quality impacts from NO_X. This alternative would also eliminate potential localized impacts to the onsite residence due to construction-related impacts from PM_{10}. Additionally, the site would remain consistent with the AQMP, as no criteria pollutants thresholds would be exceeded, and it would not be necessary to change the land use designation. In comparison to the proposed project, this alternative would reduce air quality impacts and also eliminate short-term significant unavoidable impacts.

7.4.4 Biological Impacts

The project site is host to biological resources, including a mule deer nursery site, wildlife corridors, sensitive plant communities (Riversidean sage scrub), jurisdictional wetlands, and sensitive species habitat (for the San Bernardino Kangaroo Rat, SBKR). All impacts were found to be less than significant with mitigation for the proposed project. The No Project/No Development Alternative would allow the project site to remain as open space and the existing onsite biological resources would not be disturbed. Under this alternative, the nonnative eucalyptus trees would remain and continue to present a high fire risk to remaining vegetation, including sensitive habitats. Fire and the related destruction of habitat would likely impact wildlife in the project area. As concluded in the biological resources assessment, however, vegetation resources onsite have recovered in the past and healthy regrowth is also currently underway. Although no significant and unavoidable impacts to biological resources were identified, the alternative project would reduce overall biological resources impacts in comparison to the proposed project.

7.4.5 Cultural Resources

A cultural resources report identified eight resources on the project site, two of which would be potentially significant. However, with mitigation, impacts to cultural resource would be less than significant. The No Project/No Development Alternative would preclude any development on the project site; the site would be preserved as open space. No construction activities would occur and there would not be any potential for cultural resources to be disturbed. The No Project/No Development Alternative would have no impacts to cultural resources, which would be less than the proposed project.

7.4.6 Geology and Soils

The project site is characterized by earthquake-related geological hazards. The No Project/No Development Alternative would not allow development of the project site. People and structures would not be exposed to geological hazards and no impacts would occur. Although no significant and unavoidable impacts to

geology and soils were identified, the alternative project would have no impacts in comparison to the less than significant impacts of the proposed project.

7.4.7 Hazards and Hazardous Materials

Potential hazard conditions on the project site involve fire hazards and wind hazards. The No Project/No Development Alternative would preclude development of housing onsite, and therefore no additional residents or structures would be introduced to onsite hazards. Under this alternative, however, major water delivery and storage improvements that would benefit existing residents in the project area would not be implemented. Similarly, development, fees under the proposed project that would assist in funding fire facilities and equipment would not be generated. Because of the high fire risk and inadequate water system and fire fighting resources to currently combat the fire risk, and given the potential benefit of the project as proposed, overall hazard impacts for the No Project would be considered similar to the proposed project.

7.4.8 Hydrology and Water Quality

Onsite drainage is in the form of surface flow, most of which drains into to Cable Canyon Creek and Meyers Creek, leading ultimately to Cable Creek to the south of the site. The No Project/No Development Alternative would not change the physical characteristics of the project site. The onsite drainages would be unaffected by development and natural recharge would be allowed to continue without the implementation of impervious surfaces. Since the project alternative would not generate polluted runoff, it would not impact offsite water quality. However, without storm drainage improvements, onsite sediment would not be controlled and may potentially impact water quality. Impacts to hydrology and water quality are similar between the alternative and proposed projects; impacts would be less than significant for either scenario.

7.4.9 Land Use and Planning

As part of the approval of the Specific Plan, a General Plan Amendment would be required to rezone the project site as Residential Low (3.1 dwelling units/acre). It would then be consistent with the City's General Plan. Under the No Project/No Development Alternative, the project site would remain in the City's Sphere of influence but the project site would not be annexed and no development would occur. A General Plan Amendment would not be required and the prezoning for the project site would remain Residential Estate (one dwelling unit/acre). The alternative would be consistent with the City's General Plan. Since no development would occur, it would remain consistent with other local plans, including the United States Fish and Wildlife Service (USFWS) management plans for San Bernardino Kangaroo Rat (SBKR) habitat, the Hillside Management Overlay District, and the Foothill Fire Zones Overlay. There are no significant and unavoidable impacts that could have been eliminated by this project alternative, but the alternative would still have a lower impact on land use and planning than the proposed project.

7.4.10 Mineral Resources

The proposed project site does not have substantial amounts of mineral resources that would be made unavailable by the proposed project. The site is categorized as an MRZ-3 zone, which means the significance of the mineral resources onsite is unknown. Development of the proposed project would result in less than significant impacts. Impacts would be similar for the No Project/No Development Alternative.

7.4.11 Noise

Development of the proposed project would cause significant and unavoidable noise impacts to on- and offsite sensitive receptors during the three-year construction period. These impacts would occur mainly along the project access roads and along the southern boundary of the project site.

This alternative would eliminate the short-term construction-related impacts. In addition, left as undeveloped land, this alternative would not generate any vehicle trips or stationary noise beyond those associated with the existing onsite use; therefore, long-term operational impacts would also be substantially reduced in comparison to the proposed project. Under this alternative, the significant construction-related noise impacts would be eliminated in comparison to the proposed project.

7.4.12 Population and Housing

The No Project/No Development Alternative would not allow development to occur onsite and would therefore not induce direct population growth in the City. However, it would also not provide housing to balance the jobs/housing ratio in a jobs-rich area. No impacts to population and housing would occur under the No Project/No Development Alternative.

7.4.13 Public Services

With the No Project/No Development Alternative, there would not be an increase in population that would need to be served by public fire, library, police, or school services. However, if wildfires occur on the project site under the No Project/No Development Alternative, the San Bernardino County Fire Authority would have to respond in collaboration with the City Fire Department. Such fires may be more intense under natural conditions than with the proposed project, which includes fire resistant buildings and a fire protection plan. With the No Project/No Development Alternative, impacts to all public services would be reduced but not avoided.

7.4.14 Recreation

Although the proposed project would increase the City's population, it would also include the development of recreational parks and amenities. Impacts to recreational facilities would be less than significant. Under the No Project/No Development, the project site would not be accessible to the public (although local residents might use it for recreational hiking or other activities). Without the increase in population under the alternative plan, there would be no demand for additional recreation services. However, the No Project/No Development Alternative would also not provide the amenities of the proposed project. Impacts to recreational facilities would be similar between the proposed project and the project alternative.

7.4.15 Transportation and Traffic

The proposed project would generate approximately 3,149 average daily trips. In the morning peak hour, it would generate approximately 247 trips and during the evening peak hour, it would generate approximately 333 trips. It would significantly impact to three study area intersections and contribute to significant impacts at eight freeway mainline segments. With the project's contribution to the City's Regional Circulation Fee to improve the Palm Avenue/I-215 intersections and dedication to fund the Palm Avenue/Kendall Street intersection improvements, the intersections would operate at acceptable LOS values. With or without improvements, six of the CMP freeway segments would operate with unacceptable LOS values. In addition, the proposed improvements to freeway mainlines do not have an established funding program. The impact to freeway mainline sections would be significant and unavoidable.

The No Project/No Development Alternative would not allow development of the project site and no traffic would be generated. This alternative would eliminate all project-related significant and unavoidable impacts related to transportation and traffic. However, the CMP freeway mainlines would still operate at unacceptable levels of service with or without the project in year 2035, with or without improvements.

7.4.16 Utilities and Service Systems

The proposed project would use about 529 acre-feet of water per year (afy), 327,283.2 gallons of wastewater per day, and 1.88 tons of trash per day. The No Project/No Development Alternative would not allow development of the site and would therefore not create a demand for utility services. Utility infrastructure improvements would also not occur under the No Project/No Development Alternative. The City-owned water and wastewater systems would not be expanded to serve the project site and all existing systems would remain in place. The residents in the area are mainly served by water wells, and the nearest wastewater pipeline is in Little League Drive. Without the proposed project, improvements to the existing utility systems would not be made, which is a benefit of the proposed project. However, since construction of new infrastructure would not be completed, utility and service system impacts would be reduced under this alternative.

7.4.17 Greenhouse Gas Emissions

The No Project/No Development Alternative would not generate GHG emissions since there would not be any development of the site. The GHG impacts of the proposed project would be eliminated.

7.4.18 Forest Resources

The project site under the No Project/No Development Alternative would remain undeveloped, and therefore no native or eucalyptus trees would be removed. The site has experienced major forest fires in recent years. As eucalyptus trees would not be removed, these trees would continue to be a fire hazard. Therefore, under this alternative, the probability of impacts to forest resources due to fire would remain. However, overall impacts to forest resources would be reduced compared to the proposed project because as forest lands would not be encroached upon by development and no native trees would be removed.

7.4.19 Conclusion

Ability to Reduce Environmental Impacts

The No Project/No Development Alternative would avoid impacts related to air quality, biological resources, cultural resources, geological resources, greenhouse gas emissions, hazards (wind, hazardous materials), hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and utilities and service systems. Compared to the proposed project, impacts would be similar for mineral resources. It would not reduce impacts to hazards directly related to fire since the site would remain undeveloped. The groves of eucalyptus trees represent a high fire hazard for the site. This project would not extend water improvements to the project site that would benefit firefighting for the site and also benefit surrounding residences. Overall, this alternative would reduce environmental impacts relative to the proposed project and would reduce the following significant impacts of the proposed project to less than significant:

- Air Quality (construction-related pollutant emissions)
- Greenhouse Gas Emissions (traffic-related greenhouse gas emissions)
- Noise (construction-related noise near sensitive receptors)

- Transportation and Traffic (project's contribution to CMP freeway segment unacceptable level of service)

Ability to Attain Project Objectives

The proposed project objectives are listed under Section 7.1.2 above and are referenced by number in the discussion below. The No Project/No Development Alternative would not achieve Objective 1. The site would not be developed as envisioned by the City's 2005 General Plan. The alternative would not provide a high quality, low-density community or any of the amenities of the proposed project and would not be able to meet Objectives 2 and 4. It would also not provide a safe community that considers the natural conditions of the area (Objective 7), and it would not create a housing development that would allow the project applicant to realize a reasonable return on investment (Objective 9). Objectives 3, 5, 6, and 8 would be met. Although the alternative project would not include the construction of roadways, it would not interfere with the existing roadway system in the area and would essentially meet Objective 3 because it would not interfere with the surrounding community. The project alternative would be consistent with land use policies of the surrounding San Bernardino National Forest (Objective 5). Since the project site would be undeveloped, it would not be required to meet land use development policies of the SBNF and it would be consistent with SBNF land use plans. Since the project alternative precludes development of the site, it would not create a development footprint and maintain open space, allowing it to meet Objective 6. Objective 9 would be met because the project alternative would avoid all significant environmental impacts of construction and long-term improvements of the proposed project.

7.5 NO PROJECT/EXISTING COUNTY GENERAL PLAN ALTERNATIVE

7.5.1 Alternative Description

Under the No Project/Existing County General Plan Alternative, the project site would not be annexed to the City of San Bernardino and it would be developed in accordance with the land use designations and related overlay constraints included in the County of San Bernardino General Plan and Zoning Ordinance. The general plan (2007) designates the southern portion of the project site (approximately 190.6 acres) as Residential Estate (RL-5), with a minimum lot size of five acres, and the northern portion (approximately 160 acres) as private unincorporated land in the San Bernardino National Forest (see Figure 4-6, *Existing Land Use Designations*). The 26.4-acre area to be annexed with the project site (though not part of the proposed site plan) would be designated RS-1, with a minimum lot size of one acre. However, since the Existing County General Plan Alternative would not involve annexation to the City, the 26.4-acre area would not become a county island and is therefore not considered part of this project alternative.

Site grading and home construction would be limited to the RL-5 portion of the site (the approximately 190.6-acre southern half). With a minimum lot size of five acres, a maximum of 38 homes could be developed, resulting in a gross density of 0.20 units/acres for the 190.6 acres. Earthwork would be substantially reduced for this alternative. Only a portion of each five-acre lot for each residential unit developed under the County General Plan would be graded. The size of the graded area would depend on the individual house size and amount of driveway/access road needed to serve the house.

This alternative assumes that primary access would be provided from the existing Meyers Road, and secondary or emergency access could be provided by Martin Ranch Road (see Figure 4-4, *Existing Site View 2*). The development of new roads would not be required to provide access to the 38 homes. Development would most likely be concentrated within the area of fewest constraints, primarily the area characterized with slopes less than 15 percent (see Figure 5.8-2, *Topography*).

The No Project/Existing County General Plan Alternative would comply with County development restrictions, including zoning overlay areas for Fire Safety, Geological Hazards, and Open Space. According to the San Bernardino County Hazards Overlay Map, the southern portion of the project site is within Fire Safety Area 3 (FS3), which covers areas generally south of FS1 (the northern portion of the site, which is within the San Bernardino National Forest) and areas within the wildland-urban interface. As outlined in Section 82.13.030, "Fire Safety Areas," of the San Bernardino County Municipal Code, FS1 includes areas in the mountains and valley foothills. It includes all the land generally within the San Bernardino National Forest boundary and is characterized by areas with moderate and steep terrain and moderate to heavy fuel loading, contributing to high fire hazard conditions. FS3 includes lands just to the south of the mountain FS1 area. These lands are primarily within the wildland-urban interface of the Valley Region and consist of varying terrain, from relatively flat to steeply sloping hillside areas. Development in FS3 is prone to wildfire primarily because of its proximity to FS1 zones. FS3 areas are also subject to Santa Ana wind conditions that have the potential to dramatically spread wildland fires. The Geological Hazards Overlay Zone map also shows the site in landslide and earthquake fault zones.

7.5.2 Aesthetics

The development of the project site with 38 units under the No Project/Existing County General Plan Alternative compared to 307 of the propose project would result in fewer impacts to scenic resources. The project site is not within a viewshed of a designated scenic highway. As with the proposed project, the new housing development would be visible from the surrounding project area and from I-215 under this alternative. The area of development, however, would be limited to the southern portion of the site, and grading on the northern portion of the site would not be visible as it is with the proposed project (see visual simulations, Figures 5.1-3- 5.18). With five-acre minimum lot sizes, it could be anticipated that the majority of the lot area may remain undisturbed. The visual character of this alternative would be low-density and more rural than the proposed project. Lighting levels would be reduced substantially in comparison to the proposed project. With the incorporation of City and Specific Plan Development Standards, the proposed project aesthetic and light and glare impacts would be less than significant. Aesthetic impacts for the No Project/Existing County General Plan Alternative would also be less than significant, but would be reduced in comparison to the proposed project.



7.5.3 Air Quality

The proposed project would result in regional air quality impacts for NO_X due to the amount of construction equipment needed for grading and to soil haul truck trips. In addition, the proposed project would result in localized impacts of PM_{10} to the existing residence onsite during grading. Implementation of the proposed project would not result in any significant operation-related air quality impacts.

The No Project/Existing County General Plan Alternative would result in an 88 percent reduction in dwelling units and therefore would also reduce operational air quality impacts from area and mobile sources. Operation of the proposed project would not result in significant and unavoidable air quality impacts due to operation of the project. Therefore, because this alternative would reduce operational criteria air pollutant emissions, this impact would still be less than significant.

A reduction in dwelling units and the development envelope would also result in an overall decrease of construction-related air quality impacts. Additionally, this alternative would present a low-density/low-impact development that would not require construction of the two access roads. Elimination of the two access roads would eliminate the need for the extensive soil hauling required for the proposed project. Therefore, NO_X emissions related to soil haul trucks would also be eliminated. Additionally, because this alternative would be a low-intensity/low-impact development of rural homes on 5-acre lots, the amount of grading

required would be substantially reduced compared to the proposed project. Grading activities would be on a smaller scale and primarily consist of grading each lot's residential building pad and possibly the front and back yard footprint. Therefore, the number of pieces of equipment needed would also be substantially reduced, as large-scale grading would not be necessary. Because the soil haul from the access roads would be eliminated and the number of pieces of equipment would be substantially reduced, regional air quality impacts from NO_X would be less than significant. The smaller-scale grading required under this alternative would also substantially reduce PM_{10} emissions from grading operations. Significant and unavoidable localized air quality impacts to the onsite residence would be eliminated. Furthermore, since the significant regional and localized air quality impacts would be reduced to less than significant, the alternative would be consistent with the AQMP.

7.5.4 Biological Impacts

The project site is host to biological resources, including a mule deer nursery site, wildlife corridors, sensitive plant communities (Riversidean sage scrub), jurisdictional wetlands, and sensitive species habitat (e.g., SBKR). All impacts were found to be less than significant with mitigation for the proposed project. Under the No Project/County General Plan Alternative, the development footprint on the southern portion of the project site would be significantly reduced. The amount of area needed to grade pads for 38 units would be much less than the 216.7 graded acres of the proposed project, including access roads, and only a portion of each five-acre lot would be graded. The size of the graded area would depend on the individual house size and amount of driveway/access road needed to serve the house. Therefore, overall impacts to sensitive plant communities and the mule deer nursery site would be reduced because significantly smaller areas would be graded and developed. In addition, approximately half of the identified wildlife nursery site under this project alternative could be preserved (see Figure 5.3-2, *Wildlife Movement corridors and Mule Deer Nursery Site*). Under the proposed project, the impacted SBKR habitat is located within the secondary access road alignment. Since this alternative would not require this access road, SBKR habitat could be avoided. Similarly, due to the low density of this alternative, it is anticipated that impacts to jurisdictional wetlands could be avoided.

7.5.5 Cultural Resources

The No Project/Existing County General Plan Alternative would involve development of 38 units on the southern portion of the project site. Of the two potentially significant resources, the Cable Canyon Ranch House complex (and potential privy and trash disposal areas) is in the northern portion of the project site and would not be disturbed by the No Project/Existing County General Plan Alternative. The Meyers Family Cemetery is in the southern portion of the project site and may be disturbed by site development. However, the same mitigation measure to either avoid disturbance of the cemetery area or to develop and implement an archaeological recovery plan as required for the proposed project (see Mitigation Measure 5-4) would mitigate potential cemetery impacts of this alternative to less than significant. Overall cultural resource impacts would be less than significant for both the proposed project and the No Project/Existing County General Plan alternative, but would be slightly reduced by this alternative.

7.5.6 Geology and Soils

The project site is characterized by earthquake-related geological hazards. The San Andreas fault and other fault splays run through both the northern and southern portions of the project site. Since the proposed project would cover a larger area and include 269 more units, overall impacts would be slightly less for this alternative because fewer people would be subject to geological hazards. However, mitigation measures would reduce impacts to less than significant levels for both scenarios. The No Project/Existing County General Plan would have slightly less geological impacts.

7.5.7 Hazards and Hazardous Materials

Although some of the highest fire risk areas of the northern portion of the site would be avoided under this alternative, the No Project/Existing County General Plan Alternative would also involve development in high wind and very high fire hazard areas. The County Development Code requires all proposed land uses to comply with development standards of the County's Fire Safety Overlay Zone by having the project applicant submit a slope analysis, preliminary grading plan, and fuel modification plan. This would be similar to the requirements for the proposed project. Due to the substantial reduction in units relative to the proposed project, fewer people would be introduced into this area of high potential fire and wind hazards. However, under this alternative a greater number of the eucalyptus trees would be preserved. These trees represent a high fire hazard for the project site and their removal under the proposed project is considered a benefit to fire management. It is also unlikely that development of only 38 houses under this alternative could finance the level of water system improvements included in the proposed project (including three large water tanks) that will substantially improve water delivery to fight fires in the project area. In consideration of hazardous substance use, production, and/or disposal, the alternative project would have similar less than significant impacts when compared to the proposed project. Overall, hazards and hazardous materials impacts would be similar for the proposed project and the No Project/Existing County General Plan Alternative.

7.5.8 Hydrology and Water Quality

Limiting development to the southern portion of the project site under the No Project/Existing County General Plan Alternative would essentially eliminate any potential direct impacts to Cable Canyon Creek. The smaller development footprint would preserve more natural drainage areas and increase permeable surfaces relative to the proposed project. Groundwater recharge would likely be greater under this alternative than the proposed project. This alternative, however, would likely not include the level of storm drainage improvements that would improve some existing erosion problems in the project area. Overall, the impact level of the proposed project and the No Project/County General Plan Alternative would be similar; both scenarios would result in less than significant impacts.

7.5.9 Land Use and Planning

The land use and planning analysis for the proposed project determines whether the project is consistent with local and regional governing plans and development standards and regulations. The No Project/Existing County General Plan Alternative would be consistent with both the City's General Plan and the County's General Plan. It would not exceed the one-unit-per-acre maximum density of the City's General Plan and it is designed to meet the density requirements of the County General Plan (0.2 units per acre). As County land, the site would be developed in accordance with the County's Fire Safety Overlay Zone. As noted above, since access for this alternative would be provided by existing roadways, impacts to SBKR habitat would be avoided. Development of this alternative would not require a General Plan Amendment and would not require annexation to the City. Annexation to the City, however, is consistent with the site's location within the City's sphere of influence and prezoning for the project site. Development of the site for low density residential use is consistent with the City's vision for the project site. Overall land use impacts, therefore, are considered similar for this project alternative in comparison to the proposed project.

7.5.10 Mineral Resources

The proposed project site does not have substantial amounts of mineral resources that would be made unavailable by the proposed project. The site is categorized as an MRZ-3 zone, which means the significance of the mineral resources onsite is unknown. Development of the project site under either scenario would result in similar, less than significant impacts.

7.5.11 Noise

Development of the proposed project would result significant and unavoidable construction-related noise impacts to on- and offsite sensitive receptors during the three-year construction period. These impacts would occur mainly along the project access roads and along the southern boundary of the project site.

The No Project/County General Plan Alternative would substantially reduce the residential density of the project site in comparison to the proposed project and would therefore require less construction and reduce the overall duration. While the construction equipment mix would be reduced, noise would still be dominated by the loudest pieces of equipment. Therefore, onsite and offsite residences may still be exposed to the same magnitude of maximum noise levels as under the proposed project. However, the duration of exposure of offsite and onsite residences to construction noise would be substantially reduced due to the smaller-scale and less intense construction required under this alternative. Additionally, the magnitude of average construction noise levels at the onsite and offsite residences would be reduced because of the smaller-scale and less intense construction. Furthermore, as the two access roads would not be constructed under this alternative, construction noise impacts related to these two roads would be eliminated. Under this alternative, construction-related vibration impacts would be reduced and remain less than significant. Overall construction noise impacts would be eliminated and reduced to a less than significant level.

Additionally under this alternative, operation-related noise impacts would be reduced because there would be fewer dwelling units (stationary sources) and therefore fewer vehicle trips generated compared to the proposed project. However, impacts from operational stationary and mobile sources would be less than significant under both scenarios.

7.5.12 Population and Housing

The No Project/Existing County General Plan Alternative would not appreciably affect the jobs/housing ratio for the City or County because the total number of units under this alternative is too small. This alternative would not contribute as many housing units to the City as the proposed project, and therefore would not be as effective in improving the jobs/housing balance. Table 7-2 compares the proposed project with the alternative. Overall, population and housing impacts would be similar between the proposed project and the No Project/Existing County General Plan Alternative.

Table 7-2
Projected Growth and Jobs/Housing Ratio According to SCAG

	Existing Conditions		Proposed Project		No Project/Existing County General Plan Alternative	
	2005	Projected Buildout (2035)	Proposed Increase	Adjusted Buildout with Project (2035)	Proposed Increase	Adjusted Buildout with Alternative (2035)
City of San Bernardino						
Population	201,049	265,515	1,025	266,540	127	265,642
Employment	94,917	157,088	0	157,088	0	157,088
Households	57,698	78,619	307	78,926	38	78,657
Jobs/Housing Ratio	1.65	**2.00**	--	**1.99**	--	**2.00**
County of San Bernardino						
Population	1,971,318	3,133,801	1,025	3,134,826	127	3,133,928
Employment	704,239	1,254,749	0	1,254,749	0	1,254,749
Households	567,277	972,561	307	972,870	38	972,599
Jobs/Housing Ratio	1.24	**1.29**	--	**1.29**	--	**1.29**

Sources: SCAG's 2008 Regional Transportation Plan Growth Forecast.

7.5.13 Public Services

The No Project/County General Plan Alternative would allow for the development of fewer residential units and development would be focused on the southern portion of the project site. The County Fire Department would primarily serve the site, but the Automatic Aid Agreement would allow other fire departments to bring additional resources to the site during fire emergencies. Although impacts would still exist under this alternative, they would be reduced compared to the proposed project.

Under the proposed project, the City's Police Department would serve the project site in the event of an emergency situation. With the payment of development impact fees, the impacts were found to be less than significant. Under the No Project/Existing County General Plan Alternative, police service would be provided by the County with funding from a capital facilities fund. During emergency situations, the San Bernardino City Police Department would be able to provide additional aid to the project site.

Library and school service impacts were found to be less than significant for the proposed project. With the reduced housing of the No Project/Existing County General Plan Alternative, impacts would be reduced. All public service impacts would be reduced by the alternative project.

7.5.14 Recreation

Under the No Project/Existing General Plan Alternative, the project site would be developed with a lower residential density than the proposed project. This would allow for more open space that can be used as recreational area. The population increase for this alternative would not be large enough to create a substantial demand for additional recreational facilities nor would it cause the deterioration of existing facilities. Because the proposed project includes the development of recreational parks, impacts to recreational facilities would be less than significant. Trails and recreational amenities may also be included with the No Project/Existing County General Plan Alternative, but with fewer residential units, the development would not be able to amortize the level of improvements provided by the proposed project. Impacts would also be less than significant under the No Project/County General Plan Alternative.

7.5.15 Transportation and Traffic

The proposed project would generate approximately 3,149 average daily trips. In the morning peak hour, it would generate approximately 247 trips and during the evening peak hour, it would generate approximately 333 trips.

Using the same vehicle trip generation factor as the proposed project (Institute of Traffic Engineers' *Trip Generation* [8th edition]), the No Project/Existing County General Plan Alternative would not generate traffic levels substantial enough to affect morning and evening peak hour LOS values at study area intersections. Impacts to study area intersections would be less than significant.

Access to development under this alternative could be provided by improving existing roadways. Access would be provided via Meyers Road and potentially Martin Ranch Road. Although the level of traffic generated by 38 homes would not be expected to significantly impact capacity of these roadways, access via these roadways in previously proposed site plans has been opposed by area residents (see Section 1.7).

The alternative project would not contribute 100 or more trips to CMP-designated roadways (the I-15 and I-215 freeways) during peak hours; therefore, it would not require a CMP consistency analysis, and traffic impacts would be less than significant.

The No Project/Existing County General Plan Alternative would generate substantially fewer vehicle trips and reduce traffic impacts to local intersections and CMP roadways. It would avoid the significant and unavoidable impacts to CMP-identified roadways I-215 and I-15. Access through local neighborhoods via Meyers Road may be considered a significant impact by local residents, but overall traffic impacts based on existing level of service standards and operations would be considered to be reduced for this alternative relative to the proposed project.

7.5.15 Utilities and Service Systems

The water demand of the No Project/Existing County General Plan is determined using the same demand as the proposed project. To determine the water demand of 38 units, it is assumed that the same demand per residential unit of the proposed project would apply to the project alternative. If the proposed project assumes that 307 units on 353 acres would use 529 acre-feet of water per year, then the water demand per dwelling unit would be 1.47 afy. The alternative project of 38 units would demand about 55.86 afy. This amount of water would be within the projected demand for the project site under the City's 2005 Urban Water Management Plan (UWMP). The UWMP assumes a buildout of the site under the City's General Plan (298 units). Impacts to water supply would be less than significant.

The infrastructure needed to serve the project site under the No Project/Existing County General Plan Alternative would not be guaranteed since the City would not have jurisdiction over the area. Water service may require the use of individual wells, as is the case currently for residents in the project area.

The alternative project would generate approximately 49,246 gallons of wastewater per day (based on the calculations used in Appendix L, Sewer Capacity Study), which is less than the proposed project and within the capacity of the treatment facilities. Solid waste generation would equal 0.23 tons of solid waste per day. Wastewater and solid waste impacts would be less for the alternative project compared to the proposed project.

7.5.16 Greenhouse Gas Emissions

The No Project/Existing County General Plan Alternative would result in approximately 88 percent less operational GHG emissions. This alternative would reduce the number of dwelling units, and therefore GHG emissions from area sources, energy usage, water usage, and waste would also be reduced accordingly. The reduction in dwelling units would also substantially reduce the number of vehicle trips generated, and GHG emissions from mobiles sources would be substantially reduced. A reduction in dwelling units and the development envelope and the elimination of the two access roads would also result in an overall decrease of total construction-related GHG emissions. Because this alternative would also substantially reduce mobile-source GHG emissions, GHG impacts would be eliminated and reduced to a level of less than significant.

7.5.17 Forest Resources

The No Project/Existing County General Plan would reduce the overall development footprint. Development would be limited to the RL-5 portion of the site, and therefore forest resources in the 160-acre northern portion of the site would be left undisturbed. Additionally, it is assumed that the low-density development that would be permitted under this alternative would result in lower impact development, which would result in the removal of fewer native trees compared to the proposed project. Therefore, this alternative would result in less impacts than the proposed project, although those were also less than significant.

7.5.16 Conclusion

Ability to Reduce Environmental Impacts

The No Project/Existing General Plan Alternative would reduce impacts related to air quality, biological resources, cultural resources, geological resources, greenhouse gas emissions, hazards, hydrology and water quality, noise, public services, transportation and traffic, and utilities and service systems (solid waste and wastewater). Compared to the proposed project, impacts would be similar for land use and planning, mineral resources, and population and housing. Utility and service impacts directly related to population-based demand factors (water supply, solid waste generation, and wastewater generation) would be substantially reduced for this alternative in comparison to the proposed project. The 38 units under this alternative, however, would be unlikely able to amortize the major infrastructure upgrades—particularly for domestic water delivery and storage—that would be required to adequately provide water and fire flow requirements to the project. Similarly, it would not provide the benefit to other area residents associated with these improvements under the proposed project. Overall, this alternative would reduce environmental impacts relative to the proposed project and would reduce the following significant impacts of the proposed project to less than significant:

- Air Quality (construction-related pollutant emissions)
- Greenhouse Gas Emissions (traffic-related greenhouse gas emissions)
- Transportation and Traffic (project's contribution to CMP freeway segment unacceptable level of service)

Ability to Attain Project Objectives

The proposed project objectives are listed under Section 7.1.2 and referenced by number in the discussion below. The No Project/Existing General Plan Alternative would not achieve Objective 1. Site development would be consistent with the existing land use designations of the County of San Bernardino and would not be developed as envisioned by the City's 2005 General Plan. The extent to which this alternative could achieve Objectives Nos. 2 and 4 would be largely dependent on the potential financial return on 38 homes

and the ability to fund amenities (including hiking, equestrian, and bicycles trails) and required infrastructure to assure a high quality development. The cost to construct project access roadways, site grading, and infrastructure and building construction would be partially financed through or balanced by the property sales on the project site. It is uncertain whether Objective 9 could be achieved and a reasonable return on investment achieved. Since the alternative project would have fewer residential units, the total construction and operation costs may not be offset by the property sales, and this project objective would not be met. It is unlikely that Objective 3 could be achieved. The description and analysis above assumed that this alternative would be served by existing project-area access roads. Access via Meyers Road is opposed by the surrounding community and would be perceived as not preserving the integrity of the Verdemont community. Project objective Nos. 5 through 8 could be achieved under this alternative. Development would be avoided in the San Bernardino National Forest and increase the buffer between forest-owned land and developed areas relative to the proposed project. It would maximize open space and would be designed to respect natural conditions, including wildland fires, flooding, and seismic hazards (Objectives 6 and 7). Construction-related measures to mitigate noise and air quality impacts as well as long-term operational mitigation measures of the proposed project could be assumed to also apply to this alternative, thereby achieving Project Objective No. 8.

7.6 ALTERNATIVE SITE PLAN

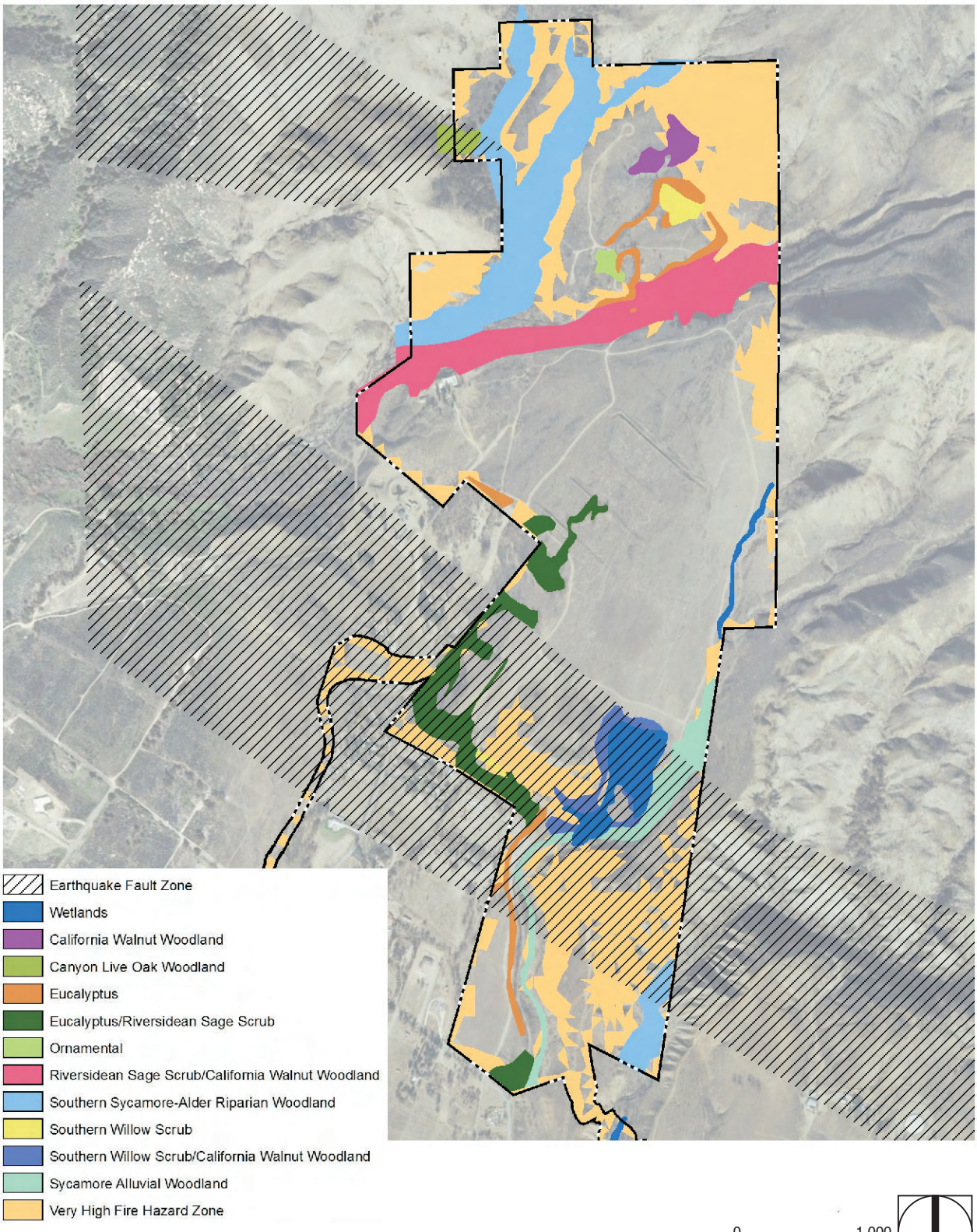
A conceptual Alternative Site Plan was developed to evaluate the potential to modify the proposed project to minimize or eliminate the significant impacts of the project (construction-related air quality and noise impacts) Since this alternative also reduces the number of housing units, it was also intended to reduce long-term operational, significant unavoidable greenhouse gas emission (GHG) impacts. The approach taken to reduce these impacts was to prepare a concept that would reduce the size of the area graded and the corresponding volume of earthwork. Based on the opportunity to reduce the development footprint, another objective of this alternative was to minimize other environmental impacts to the extent possible. Figure 7-1, *Project Site Constraints*, was prepared as a composite constraints map depicting sensitive biological resources, high fire risk areas, and seismic constraints. The development concept was prepared to avoid these areas to the extent possible. The resultant development concept is provided as Figure 7-2, *Alternate Site Plan*. This conceptual site design would have a total onsite development footprint of 137.6 acres (123.8 graded acres and 13.8 acres of fuel modification area), a reduction of 43 percent from the proposed project's onsite development area of 241.5. Assuming the same development density as the proposed project (1.27 du/ac), this alternative would yield 175 single-family homes. The yield in residential units for this alternative is 175.

Onsite circulation would remain essentially the same, with the exception of some road adjustments on the western portion of the site and the removal of one of two roads that connect the northern quarter of the site with the resovoir tank. Project access would remain the same as with the proposed project. The primary access road would enter the site on the southeast as an extension of Verdemont Drive, and the secondary access road would enter the site from the southwest and connect to the frontage road along I-215.

7.6.1 Aesthetics

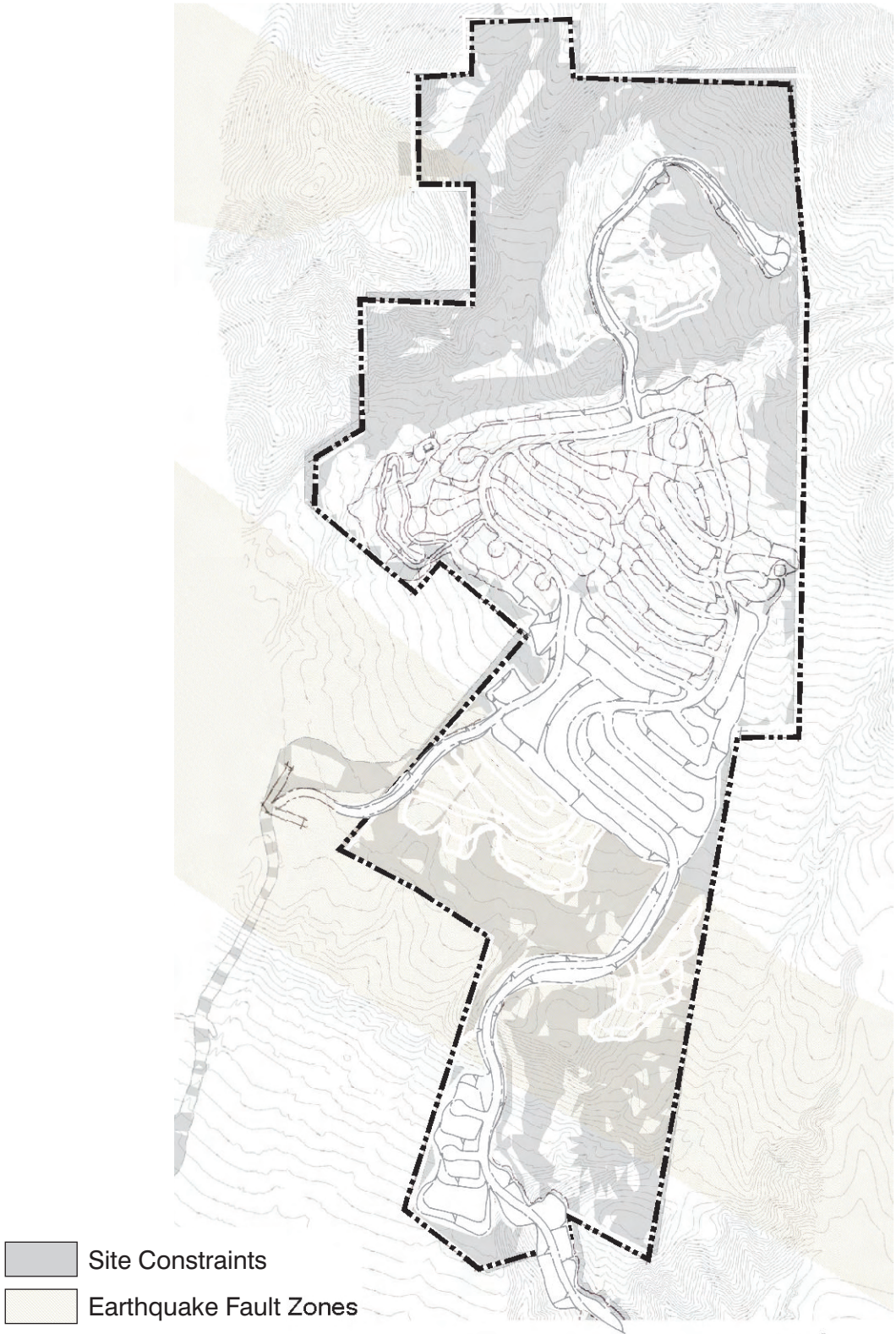
This alternative would eliminate grading by approximately 69.3 acres compared to the proposed project. It has been designed both to reduce grading earthwork and to avoid very high fire hazard areas, which inherently involved avoidance of some of the steepest topography on the project site. Since more hillside area would be preserved under this alternative, less development would be visible from offsite locations. More natural vegetation and tree resources would also be preserved. As with the proposed project, with the incorporation of City and Specific Plan Development Standards, light and glare impacts for this alternative would be reduced to less than significant. The project site is not visible from a designated scenic highway.

Project Site Constraints



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Alternative Site Plan



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Overall aesthetic impacts would be reduced for this alternative relative to the proposed project. Aesthetic impacts for both the proposed project and this alternative would be less than significant.

7.6.2 Air Quality

Implementation of the Alternative Site Plan would reduce the overall number of dwelling units and total acreage graded by 33 percent. Additionally, the number of pieces of construction equipment for grading would also be reduced by this amount. Overall, this alternative would reduce the total amount of criteria air pollutants emitted. However, it would not reduce construction-related NO_X air pollutant emissions to below the SCAQMD regional threshold. Soil haul related to grading of the two access roads would remain similar to the proposed project. NO_X emissions from soil haul operations alone would exceed the regional threshold. Under the proposed plan, construction equipment during grading would generate NO_X emissions that exceed the SCAQMD threshold by over 275 percent. Reducing the construction equipment mix by 33 percent would reduce the amount of NO_X emissions by the same amount, but it would still exceed the threshold. Therefore, the alternative would slightly reduce NO_X emissions, but would not eliminate this impact, and regional air quality impacts from construction-related NO_X air pollutant emissions would still be significant and unavoidable. Additionally, grading would still occur at the same area near the onsite residence as it would under the proposed plan. Localized impacts from PM_{10} concentrations at the onsite residence would be similar to the proposed project. Therefore, this alternative would not eliminate significant localized air quality impacts from PM_{10} at the onsite residence and would still be significant and unavoidable. As there would still be significant regional and localized air quality impacts this alternative would also be inconsistent with the AQMP.

This alternative would reduce operation-related air quality impacts because fewer dwelling units would be built and therefore fewer vehicle trips would be generated. The proposed project would not result in significant and unavoidable significant operational air quality impacts and therefore this alternative would also not result in significant and unavoidable operational air quality impacts.

7.6.3 Biological Impacts

Under the proposed project, development would remove or modify up to 265.2 acres of habitat used by sensitive species, 26.4 acres of riparian plant communities, 168.4 acres of Riversidian sage scrub, 10.6 acres of United States Army Corps of Engineers/Regional Water Quality Control Board jurisdictional areas, and 13.3 acres of California Department of Fish and Game jurisdictional land. It would also affect a wildlife nursery site on the center of the project site and wildlife corridors along the natural creek drainages on the northern and eastern portion of the project site. The secondary project access road would also disturb SBKR habitat to the south of the project site.

As seen in Figure 7-2, *Alternative Site Plan,* this alternative would avoid some of the sensitive plant community habitats, wetlands, and wildlife corridors, but it would not completely avoid these areas. Relative to the proposed project, it would preserve California walnut woodland area and southern willow scrub areas in the northern portion of the site. The wetlands on the southeast of the project site would be largely avoided, but natural drainages would still be impacted by this alternative. Because the secondary project access road would still be included with the Alternative Site Plan, the SBKR habitat would still be affected. Mitigation measures included with the proposed project would be included with the alternative project, and impacts would be less than significant. Overall biological resource impacts would be slightly reduced in comparison to the proposed project.

7.6.4 Cultural Resources

The Alternative Site Plan would include development in the areas of two potentially significant resources: the Cable Canyon Ranch House Complex and the Meyers Family Cemetery. Impacts would be the same as with the proposed project.

7.6.5 Geology and Soils

The project site is characterized by earthquake-related geological hazards. The San Andreas Fault and other fault splays run through both the northern and southern portion of the project site.

The Alternative Site Plan would increase the buffer between the development and the Alquist Priolo Fault Zone compared to the proposed project. Areas of liquefaction near the wetlands on the eastern portion of the site would be avoided with the project alternative. Overall, geological and soils impacts would be similar, less than significant after mitigation, but the Alternative Site Plan would have slightly less impacts.

7.6.6 Hazards and Hazardous Materials

The Alternative Site Plan would avoid some of the very high fire hazard zone area that would be developed under the proposed project (see Figure 5.1-1, *Development Footprint*, in Section 5-1, *Aesthetics*). However, development would still occur in high fire hazard zones and much of the development would be in high proximity to very high hazard zones. The site would be susceptible to fire, as it has in the past. The fire protection plan prepared for the proposed project would be utilized for this alternative, reducing impacts to less than significant. With either scenario, exposure to hazardous materials would be minimal. Overall, impacts would be similar for the Alternative Site Plan.

7.6.7 Hydrology and Water Quality

As proposed, the site plan would require a bridge to cross Cable Creek in to access development in the northernmost portion of the site. Natural percolation also occurs on the project site, recharging the groundwater supply. By avoiding major drainage channels and using the best management practices of the proposed project's water quality management plan and stormwater pollution prevention plan, the drainage and water quality impacts of the proposed project would be less than significant. There are no 100-year floodplains onsite and no dams on or near the site that would cause flooding hazards. The three onsite reservoirs included in the proposed project would not present a flooding risk to the proposed project. All hydrology and water quality impacts are less than significant under the proposed plan.

Impacts to natural drainages under this alternative would be similar to the proposed project. The Alternative Site Plan does increase the development setback relative to Cable Creek in the northern portion of the site. The natural drainages would be preserved as much as possible with the development, and the detention basins would be placed in the same locations as with the proposed project. With fewer units and a smaller development footprint, more natural infiltration would be able to occur and project site runoff would be reduced. Although both scenarios would have less than significant impacts, the Alternative Site Plan's impact to hydrology and water quality would be slightly reduced in comparison to the proposed project.

7.6.8 Land Use and Planning

The Alternative Site Plan would have similar impacts to land use and planning. It is assumed that a specific plan would be required for this project alternative and the same General Plan Amendment would be required to designate the site as Residential Low (RL). As with the proposed project, the Specific Plan would be

consistent with the General Plan. For other plans, regulation, and development policies pertaining to the project site (i.e., USFWS SBKR habitat, the Hillside Management Overlay District, and the Foothill Fire Zones A, B, and C), mitigation measures, Specific Plan policies, and project design features would need to be implemented to demonstrate compliance. Impacts would be reduced to less than significant for the Alternative Site Plan and would be similar to the land use and planning impacts of the proposed project.

7.6.9 Mineral Resources

The proposed project site does not have substantial amounts of mineral resources that would be made unavailable by the proposed project. The site is categorized as an MRZ-3 zone, which means the significance of the mineral resources onsite is unknown. Development of the project site under either scenario would result in similar, less than significant impacts.

7.6.10 Noise

The Alternative Site Plan would reduce the number of dwelling units in comparison to the proposed project and would require less construction and reduce the number of construction equipment. As noise is dominated by the loudest pieces of equipment and the majority of the Alternative Site Plan footprint would be similar to the proposed project, the maximum construction noise levels experienced by the surrounding residences would be similar to the proposed project. Although this alternative would move onsite development away from the offsite residences on the southern and western portions of the site, the slightly increased distance would have minimal effect in attenuating maximum construction noise levels. However, overall average noise levels would be slightly reduced because there would be fewer pieces of construction equipment. In addition, because the project access roads would still be constructed with the proposed project, the grading and construction of these roads would result in similar noise impacts in regard to duration and magnitude in comparison to the proposed project. Under this alternative, while overall construction noise impacts would be slightly reduced, construction noise impacts would not be eliminated and would still be significant and unavoidable at the sensitive receptors along the proposed project access roads and near the areas to be developed.

Operation-related noise impacts under this alternative would be reduced, as there would be less dwelling units (stationary sources) and therefore fewer vehicle trips generated compared to the proposed project. Since impacts from operational stationary and mobile sources would be less than significant under the proposed plan, impacts from these sources would still be less than significant under this alternative.

7.6.11 Population and Housing

The Alternative Site Plan would include approximately 175 residential units, based on the assumed density of the proposed project (1.27 dwelling units per developed acre). This would result in an onsite population of 585. The City and County jobs/housing ratios would be the same as with the proposed project and impacts would be similar (see Table 7-3).

Table 7-3
Projected Growth and Jobs/Housing Ratio According to SCAG

	Existing Conditions		Proposed Project		Alternative Site Plan	
	2005	Projected Buildout (2035)	Proposed Increase	Adjusted Buildout with Project (2035)	Proposed Increase	Adjusted Buildout with Alternative (2035)
City of San Bernardino						
Population	201,049	265,515	1,025	266,540	585	266,100
Employment	94,917	157,088	0	157,088	0	157,088
Households	57,698	78,619	307	78,926	175	78,794
Jobs/Housing Ratio	1.65	**2.00**	--	**1.99**	--	**1.99**
County of San Bernardino						
Population	1,971,318	3,133,801	1,025	3,134,826	585	3,134,386
Employment	704,239	1,254,749	0	1,254,749	0	1,254,749
Households	567,277	972,561	307	972,870	175	972,736
Jobs/Housing Ratio	1.24	**1.29**	--	**1.29**	--	**1.29**

Sources: SCAG's 2008 Regional Transportation Plan Growth Forecast.

7.6.12 Public Services

With the Alternative Site Plan, the project site would continue to be served by the same police and fire stations. To handle potential wildfires on the 175-unit alternative site, staffing may need to be increased at Station 232, as with the proposed project. The Alternative Site Plan would generate fewer students and would require less new library space in comparison with the proposed project. Public service impacts would be similar but slightly less significant for the Alternative Site Plan.

7.6.13 Recreation

The Alternative Site Plan would require 2.9 acres of park space based on the City's requirement of five acres of park per 1,000 residents. Six of the nine acres of proposed parkland would be maintained as part of the alternative site plan; therefore, the alternative project would have 8.9 acres of public and private park space. This would exceed the requirement by 6 acres and would provide more recreation space per resident than the proposed project. Impacts would be less when compared to the proposed project.

7.6.14 Transportation and Traffic

The proposed project would generate approximately 3,149 average daily trips. In the morning peak hour, it would generate approximately 247 trips and during the evening peak hour, it would generate approximately 333 trips. It would have potentially significant impacts to study area intersections and freeway mainline segments. The following intersections would operate at unacceptable LOS values without roadway improvements:

- Palm Avenue at the I-215 southbound ramps
- Palm Avenue at the I-215 northbound ramps
- Palm Avenue at Kendall Drive

With improvements, these intersections would operate with acceptable LOS values during morning and evening peak hours. With improvements, all impacts would be less than significant.

The following freeway segments are projected to operate at an unacceptable LOS for year 2035 with and without the project traffic during the morning and evening peak hours, per San Bernardino County Congestion Management Program (CMP) standards:

- The I-215 freeway segment between Palm Avenue and Devore Road (northbound and southbound)
- The I-215 freeway segment between Devore Road and I-215 (northbound and southbound)
- The I-15 freeway segment between I-215 and Glen Helen Parkway (northbound and southbound)
- The I-15 freeway segment between Glen Helen Parkway and Sierra Avenue (northbound and southbound)

With improvements, only two of these segments, I-15 between I-215 and Glen Helen Parkway and I-215 between I-15 and Devore Parkway, would operate with acceptable LOS values. The remaining six segments would operate at unacceptable levels of service during either the morning or evening peak hour.

Using the same vehicle trip generation factor as the proposed project (Institute of Traffic Engineers' *Trip Generation* manual [8th ed.], the Alternative Site Plan would generate 1,675 average daily trips, 131 morning peak-hour trips, and 177 evening peak-hour trips. Since the Alternative Site Plan would contribute more than 50 two-way trips during peak hours on intersections in the County of San Bernardino, it would exceed the arterial link threshold of the County's CMP. A traffic impact assessment would need to be prepared for this project alternative. Since the intensity of the Alternative Site Plan is less than the proposed project, traffic impacts would be less. Improvements to existing roadways would most likely be required, however, and the two project access roads would need to be built as part of this alternative.

Public transit is currently not provided to the project site and would not be provided with the implementation of either the proposed project or the alternative project. Alternative transportation plans would not be impacted by the proposed project or the Alternative Site Plan.

Overall, traffic impacts would be similar between the two scenarios, but the Alternative Site Plan would lessen the traffic impacts compared to the proposed project because the number of vehicle trips would be reduced.

7.6.15 Utilities and Service Systems

The proposed project would use about 529 acre-feet of water per year (afy) and generate 327,283.2 gallons of wastewater per day and 1.88 tons of trash per day. Impacts related to wastewater and solid waste would be less than significant because the flow rate in both cases would be within the capacity of the appropriate facilities. The water demand would require mitigation measures to reduce potentially significant impacts, since the project would demand more water than projected for the area in the 2005 Urban Water Management Plan. Wastewater and solid waste impacts would be less than significant.

Using the same demand factor derived for the No Project/Existing County General Plan Alternative (see discussion in Section 7.5.15), the Alternative Site Plan would use 257.3 afy of water. The City of San Bernardino UWMP assumes 450 afy for the project site, so this alternative would be within the projected water demand for the area. The alternative would also generate approximately 180,307 gallons of wastewater per day (based on the calculations used in the Sewer Capacity Study, Appendix L) and 1.07 tons of solid waste per day (based on a resident solid waste generation rate of 12.23 pounds per residential unit per day). All utility service demands would be lower than the proposed project and within the capacity of existing service providers. Since the Alternative Site Plan would have a lower water demand and solid waste and wastewater generation, it would have slightly reduced impacts in comparison to the proposed project.

7.6.16 Greenhouse Gas Emissions

The Alternative Site Plan is about 57 percent the size of the proposed project (175/307 residential units) and would reduce operational GHG emissions approximately 43 percent. Total construction-related GHG emissions would also slightly decrease due to construction of fewer dwelling units and smaller development footprint. Overall, impacts from construction-related GHG emissions and from area sources, energy and water usage, and waste would be less than significant for the proposed project and, therefore, this alternative would further reduce these impacts. However, although this alternative would generate 43 percent less mobile-source GHG emissions, the amount generated would still be substantial. Furthermore, because this alternative would still develop the same master planned single-family community as the proposed project, it would remain inconsistent with the transportation strategies of reducing vehicle miles traveled (VMT). Overall, this alternative would result in similar long-term GHG impacts as the proposed project and would still be significant and unavoidable.

7.6.17 Forest Resources

The Alternative Site Plan would reduce the overall development footprint. As shown in Figure 7-2, the Alternative Site Plan would have less development on forest lands throughout the project site, particularly in the southern portion of the site (Meyers Creek). This alternative would reduce impacts on forest resources compared to the proposed project, which were less than significant.

7.6.18 Conclusion

Ability to Reduce Environmental Impacts

The Alternative Site Plan would reduce but not eliminate the short-term air quality and noise impacts. It would have similar greenhouse gas emission impacts and would be inconsistent with the transportation strategies of reducing VMT. Cultural Resources, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, and Population and Housing impacts would also be similar. All other impacts (aesthetics, biological resources, geology and soils, hydrology and water quality, public services, recreation, transportation and traffic, utilities and service systems, and forest resources) would be lessened in comparison to the proposed project.

Ability to Attain Project Objectives

The Alternative Site Plan has the potential to attain most of the proposed project's objectives. With a 33 percent reduction in units, however, the applicant may not be able to create an attractive, viable project and realize a reasonable return on investment (Objective 9). With fewer units, the cost to provide and construct infrastructure in addition to the proposed residential units may not be balanced by project revenues. The project as proposed includes major infrastructure improvements, including the construction of two offsite access roads, extension of domestic water service and three water reservoirs, and extension of sewer service to the site. Both the proposed project and the Alternative Site Plan would also include costly mitigation programs, including a comprehensive tree replacement program. The financial viability of this alternative is uncertain considering these costs.

7.7 REDUCED DAILY AGREAGE GRADED ALTERNATIVE

The Reduced Daily Grading Alternative was defined and evaluated for its potential to reduce air quality impacts. The air quality impacts of the proposed project pertain to the emission of NO_X from construction activities at a local and regional level. The primary source of NO_X emissions is vehicle emissions, particularly

heavy construction equipment. This alternative assumes that both the number of acres graded per day and the number of construction vehicles onsite per day would be reduced by 75 percent. This would make the grading phase approximately four times as long as for the proposed project. Table 7-4 summarizes the Reduced Daily Acreage Graded Alternative.

Table 7-4
Construction Information
(Proposed Project vs. Reduced Daily Acreage Graded Alternative)

	Proposed Project (February 2009 Construction Data)	*Reduced Daily Acreage Graded Alternative*
Grading Statistics		
Total acres graded	224.3	224.3
Acres graded daily	70	17.5
Length of grading	3 months (project site and access roadways)	12 months (project site and access roadways)
Grading Equipment Mix		
Scrapers	8	2
Crawler tractors	8	2
Graders	8	2
Rubber-tired dozers	8	2
Water trucks	2	2

Source: Rick Engineering 2009.

Notes: The total acres graded in this table differ from the total acres graded in other sections of the EIR. Since the air quality modeling is based on this information provided in February 2009 from the Civil Engineer, the same information is used here. The purpose of this alternative is to reduce the significant air quality impacts. The emissions of NO_x of the proposed project are based on the number of acres graded and equipment used in this table.

This alternative would grade the project site over a period of 12 months rather than 3 months. The 12-month schedule would likely be extended even more due to rainy season interruptions. All of the listed equipment would be reduced from eight to two, with the exception of the water trucks.

Site development after grading would be the same as the proposed project, and other project characteristics would be the same. The total number of units built would be 307, and site access and circulation would be the same as the proposed project.

7.7.1 Aesthetics

With the incorporation of City and Specific Plan Development Standards, the proposed project and the alternative project would have less than significant impacts related to scenic resources and light and glare. The Reduced Daily Grading Alternative would cause bare ground to be exposed for 12 months compared to 3 months. This may affect the project site, appearance during construction, but impacts would remain less than significant. Both scenarios would have similar, less than significant impacts to scenic resources, light, and glare.

7.7.2 Air Quality

This alternative would reduce short-term impacts to air quality, as shown in Table 7-5. The amount of daily NO_X emissions from construction equipment during grading would be reduced because there would be fewer pieces operating simultaneously. In addition, limiting the allowable daily acreage graded and lengthening the grading schedule would result in fewer daily soil haul truck trips and reduction of daily NO_X

emissions from this activity. As shown in the table, this alternative would result in a substantial reduction of overall short-term criteria air pollutant emissions compared to the proposed project without mitigation. However, this alternative would not eliminate significant short-term emission of NO_X.

Table 7-5
Construction Phase Regional Emissions – Reduced Daily Acreage Graded
(in pounds per day)

Construction Phase	*VOC*	*NO_X*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
SCAQMD Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Proposed Project						
Maximum Daily Construction Emissions	73	740	338	<1	456	118
Significant?	No	**Yes**	No	No	**Yes**	**Yes**
Reduced Daily Acreage Graded Alternative						
Mass Grading	*18*	*179*	*81*	*<1*	*114*	*29*
Trenching/Utilities	*2*	*16*	*9*	*0*	*1*	*1*
Asphalt Paving (Access Roads)	*8*	*31*	*17*	*<1*	*3*	*3*
Building Construction	*6*	*32*	*66*	*<1*	*2*	*2*
Asphalt Paving	*9*	*35*	*18*	*<1*	*2*	*2*
Architectural Coating	*34*	*<1*	*1*	*0*	*<1*	*<1*
Maximum Daily Construction Emissions	38	181	84	<1	114	29
Significant?	No	**Yes**	No	No	No	No

Source: URBEMIS2007, Version 9.2.4

This alternative would reduce the amount of onsite fugitive dust emissions of PM_{10} and $PM_{2.5}$ and would also reduce the PM_{10} concentration at the onsite residence. However, the total graded area would be the same as the proposed project. Therefore, this alternative would reduce, but not eliminate significant localized air quality impacts from PM_{10} at the onsite residence and would still be significant and unavoidable. Because this alternative would still result in significant regional and localized air quality impacts, it would also be inconsistent with the AQMP.

Impacts from operational emissions would be the same as the proposed project, as this alternative would not reduce the number of dwelling units that would be developed. Therefore, long-term air quality impacts would still be less than significant.

7.7.3 Biological Impacts

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to biological resources would be the same as with the proposed project.

7.7.4 Cultural Resources

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to cultural resources would be the same as with the proposed project.

7.7.5 Geology and Soils

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to geology and soils would be the same as with the proposed project.

7.7.6 Hazards and Hazardous Materials

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to hazards and hazardous materials would be the same as with the proposed project.

7.7.7 Hydrology and Water Quality

Onsite drainage is in the form of surface flow, most of which drains into to Cable Canyon Creek and Meyers Creek, leading ultimately to Cable Creek to the south of the site. The Cable Canyon Creek runs northeast to southwest through the northern portion of the site and Meyers Creek runs just east of the project site and would go under the Primary Access Road. Natural percolation also occurs on the project site, recharging the groundwater supply. By avoiding major drainage channels and using the best management practices of the proposed project's water quality management plan and stormwater pollution prevention plan, all hydrology and water quality impacts are less than significant under the proposed plan.

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Construction-related impacts to hydrology and water quality may be increased because of the extended construction grading period. The prolonged exposure of bare soil (12 months) would increase sediment and topsoil runoff, affecting the waterways downstream of the proposed project site. Impacts to hydrology and water quality would be slightly greater with the alternative than with the proposed project.



7.7.8 Land Use and Planning

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to land use and planning would be the same as with the proposed project.

7.7.9 Mineral Resources

The proposed project site does not have substantial amounts of mineral resources that would be made unavailable by the proposed project. The site is categorized as an MRZ-3 zone, which means the significance of the mineral resources onsite is unknown. Development of the project site under either scenario would result in similar, less than significant impacts.

7.7.10 Noise

The Reduced Daily Grading Alternative would reduce the number of pieces of equipment needed for grading operations. However, grading would still occur in the same areas as the proposed project, and the type of equipment during graded would not change under this alternative. As noise is dominated by the loudest pieces of equipment, the maximum construction noise levels experienced by the surrounding residences would be similar to the proposed project, but overall average noise levels would be reduced because there would be fewer pieces of construction equipment. In addition, noise impacts from roadway construction

would not change from the proposed project. Furthermore, the grading period would increase from 3 months to 12 months or longer and would expose sensitive receptors to construction-generated noises for a longer period of time, causing impacts of greater significance. Therefore, the construction noise impacts of the alternative project are greater than those of the proposed project.

This alternative would not change the design or number of dwelling units and would result in the same noise levels as the proposed project. Therefore, long-term operational noise impacts would still be less than significant.

7.7.11 Population and Housing

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to population and housing would be the same as with the proposed project.

7.7.12 Public Services

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to public services would be the same as with the proposed project.

7.7.13 Recreation

The Reduced Daily Grading Alternative would use the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to recreation would be the same as with the proposed project.

7.7.14 Transportation and Traffic

The Reduced Daily Grading Alternative would have the same operational traffic impacts as the proposed project. During construction, the alternative project would have construction-related traffic impacts of greater significance than the proposed project. The number of days that haul trucks would be using the local roads to access the site would be extended fourfold under the alternative conditions. Analysis of construction traffic for the proposed project is considered to be less than significant with the incorporation of mitigation measures to avoid congested intersections. The alternative project would increase the traffic volume on local roadways for a longer period of time, potentially causing significant impacts that would require mitigation measures. Operational traffic impacts would be the same for the two scenarios, but construction traffic generated by the project alternative would have greater impacts.

7.7.15 Utilities and Service Systems

The Reduced Daily Grading Alternative would use the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to utilities and service systems would be the same as with the proposed project.

7.7.16 Greenhouse Gas Emissions

The Reduced Daily Grading Alternative would generate similar total construction-related GHG emissions as the proposed project. Under this alternative, the total graded area and the amount of soil haul and number of dwelling units built would not change from the proposed project. Therefore, the required construction efforts

needed to develop the project under this alternative would be similar to the proposed project. Construction-related GHG impacts would still be less than significant under this alternative.

Similarly, this alternative would also generate the same operation-related GHG emissions as the number of dwelling units, development footprint, and number of vehicle trips would not change from the proposed project. Therefore, long-term GHG impacts from area sources, energy and water usage, and waste generated would still be less than significant. However, this alternative would generate the same amount of GHG emissions from mobile sources. Furthermore, as this alternative would still develop the same master planned single-family community as the proposed project, it would remain inconsistent with the transportation strategies of reducing VMT. Overall, this alternative would result in similar long-term GHG impacts as the proposed project and would still be significant and unavoidable.

7.7.17 Forest Resources

The Reduced Daily Grading Alternative would implement the same proposed site plan as the proposed project and would not change the final characteristics of the proposed project. Impacts to forest resources would still be less than significant.

7.7.18 Conclusion

Ability to Reduce Environmental Impacts

The Reduced Daily Grading Alternative would substantially reduce construction-related air quality impacts. Daily NO_X emissions would be reduced from 740 to 181 pounds per day, but would still exceed the significance threshold of 100 lbs/day (see Table 7-5). Impacts to noise and traffic during construction would be worsened by this project alternative because of the extended construction period. Hydrology and water quality impacts would also be slightly worse because sediment runoff would increase during the longer construction period. Other construction-related impacts would be similar to the proposed project, and long-term operational impacts would be the same as for the proposed project.

Ability to Attain Project Objectives

The Reduced Daily Grading Alternative would implement the same proposed site plan and Specific Plan as the proposed project and would attain most the proposed project objectives. Extending the construction grading activities over a year, however, could jeopardize the economic viability of the project and a reasonable return on investment (Objective 9). The grading schedule, equipment mix, and workers included in the proposed project description are based on typical construction activities. The extended schedule would likely result in costly inefficiencies. The extended construction period would also limit the project's ability to minimize environmental impacts associated with construction of improvements (Objective 8).

7.8 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. The No Project/No Development and the No Project/Existing General Plan alternatives would be the environmental superior alternatives of the project alternatives evaluated. The elimination or substantial reduction of units developed and natural area disturbed would reduce environmental impacts. Neither of these alternatives would result in any significant, unavoidable impacts.

Of the remaining alternatives, the following alternative is identified as the "environmentally superior" project:

- Alternative Site Plan

The Alternative Site would reduce each of the significant, unavoidable impacts identified for the project as proposed, including short-term, construction-related air quality and noise impacts and long-term greenhouse gas emission impacts. The overall reduction of the development footprint and anticipated reduction in earthwork quantities would reduce, but not eliminate the significant air quality and noise impacts. Although it would reduce greenhouse gas emissions by 43 percent, it would still emit a substantial amount of greenhouse gases and would have similar impacts. The Alternative Site Plan would be able to meet the majority of the project objectives (Table 7-7).

The Alternative Site Plan would also reduce a number of impacts that were identified as potentially significant in this DEIR but have been reduced to less than significant. As shown on Table 7-6, the Alternative Site Plan would reduce aesthetic, biological, geology and soils, hydrology and water quality, public services, recreation, transportation and traffic, utilities, and forest resource impacts.

Table 7-6
Summary of Impacts of Alternatives Compared to the Proposed Project

Section Number	Topic	Proposed Project	No Project/No Development Alternative	No Project/Existing General Plan Alternative	Alternative Land Use Plan	Reduced Daily Grading
5.1	Aesthetics	Less Than Significant	(–)	(–)	(–)	(=)
5.2	Air Quality Short Term	Significant and Unavoidable	(–)(1)	(–)(1)	(–)	(–)
	Long Term	Less Than Significant	(–)	(–)	(–)	(=)
5.3	Biological Resources	Less Than Significant	(–)	(–)	(–)	(=)
5.4	Cultural Resources	Less Than Significant	(–)	(–)	(=)	(=)
5.5	Geology and Soils	Less Than Significant	(–)	(–)	(–)	(=)
5.6	Hazards and Hazardous Materials	Less Than Significant	(=)	(=)	(=)	(=)
5.7	Hydrology and Water Quality	Less Than Significant	(=)	(=)	(–)	(+)
5.8	Land Use and Planning	Less Than Significant	(–)	(=)	(=)	(=)
5.9	Mineral Resources	Less Than Significant	(=)	(=)	(=)	(=)
5.10	Noise Short Term	Significant and Unavoidable	(–)(1)	(–)(1)	(–)	(+)
	Long Term	Less Than Significant	(–)	(–)	(–)	(=)
5.11	Population and Housing	Less Than Significant	(–)	(=)	(=)	(=)
5.12	Public Services	Less Than Significant	(–)	(–)	(–)	(=)
5.13	Recreation	Less Than Significant	(=)	(=)	(–)	(=)
5.14	Transportation/Traffic	Less Than Significant	(–)(1)	(–)(1)	(–)	(+)
5.15	Utilities and Service Systems	Less Than Significant (with mitigation)	(–)	(–)	(–)	(=)
5.16	Greenhouse Gas Emissions	Less Than Significant	(–)(1)	(–)(1)	(=)	(=)
5.17	Forest Resources	Less Than Significant	(–)	(–)	(–)	(=)

(-) The alternative would result in fewer impacts than the proposed project.
(+) The alternative would result in greater impacts than the proposed project.
(=) The alternative would result in the same/similar impacts as the proposed project.
(1) Eliminates a significant impact.

Table 7-7
Ability of Each Alternative to Meet the Project Objectives

Project Objective	Proposed Project	No Project/No Development	No Project/ Existing County General Plan	Alternative Site Plan	Reduced Daily Grading
1. Provide for the development of the site consistent with City's General Plan for this area within its Sphere of Influence.	Yes	No	No	Yes	Yes
2. Develop a high-quality, low density residential community that optimizes the unique characteristics of the project site, including maximizing view opportunities.	Yes	No	No	Yes	Yes
3. Assure adequate roadway access to the development while preserving the integrity of surrounding communities.	Yes	Yes	No (Unlikely)	Yes	Yes
4. Enhance City trail facilities by expanding the system and integrating project-site trails with existing and proposed hiking, equestrian, and bicycle trails within the surrounding community.	Yes	No	No	Yes	Yes
5. Comply with policies for land use development within and adjacent to the San Bernardino National Forest.	Yes	Yes	Yes	Yes	Yes
6. Minimize the development footprint and maximize available open space areas.	Yes	Yes	Yes	Yes	Yes
7. Design a safe community cognizant of natural conditions, including wildland fires, flooding, and seismic hazards.	Yes	No	Yes	Yes	Yes
8. Minimize environmental impacts associated with construction of improvements and long-term operation of the new community.	Yes	Yes	Yes	Yes	No
9. Create an attractive, viable project, and realize a reasonable return on investment.	Yes	No	No	No	No

8. *Impacts Found Not to Be Significant*

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project," and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in November 2009 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this Draft EIR (DEIR). Please refer to Appendix A for explanation of the bases of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist as contained in the Initial Study.

Table 8-1
Impacts Found Not to Be Significant

Environmental Issues	*Initial Study Determination*
II. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Less Than Significant
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less Than Significant
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	Less Than Significant
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	
e) Create objectionable odors affecting a substantial number of people?	Less Than Significant

Table 8-1
Impacts Found Not to Be Significant

Environmental Issues		Initial Study Determination
VI. GEOLOGY AND SOILS. Would the project:		
f)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:		
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	No Impact
f)	For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact
IX. LAND USE AND PLANNING. Would the project:		
a)	Physically divide an established community?	No Impact
d)	Be developed within the Airport Influence Area as adopted by the San Bernardino International Airport Authority?	Less Than Significant Impact
XI. NOISE. Would the project result in:		
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
XII. POPULATION AND HOUSING. Would the project:		
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No Impact
XV. TRANSPORTATION/TRAFFIC. Would the project:		
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No Impact
f)	Result in inadequate parking capacity?	Less Than Significant Impact

9. *Significant Irreversible Changes Due to the Proposed Project*

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. In the case of the proposed project, implementation would involve a long-term irreversible change to the existing environmental conditions, resulting in the following significant impacts:

- Implementation of the proposed project would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water.

- An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, and sewer and water services) would also be required. The energy and social service commitments would be long-term obligations in view of the low likelihood of returning the land to its original condition once it has been developed.

- An increase in project-related vehicle trips would accompany project-related population growth. Over the long term, emissions associated with such vehicle trips would continue to contribute to the South Coast Air Basin's nonattainment designation for ozone (O_3) and particulate matter ($PM_{2.5}$ and PM_{10}).

- Project-generated vehicle trips would increase emissions of greenhouse gases (GHG) to levels that are above the California Air Resource Board thresholds for both buildout year 2013 and future year 2030. Vehicle-related GHG emissions would cause significant and unavoidable impacts.

9. Significant Irreversible Changes Due to the Proposed Project

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10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities that could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

- Would this project result in the need to expand one or more public services to maintain desired levels of service?

- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?



Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

As described in Chapter 3*, Project Description*, the proposed project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site will be located underground. In the event that the overhead electric lines cannot be located underground, an alternative plan accommodating the lines above ground, as described in Chapter 3*, Project Description,* is included for analysis in this EIR. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the aboveground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units, compared to 307 units proposed in the preferred development plan, and would have similar growth-inducing impacts to that of the preferred plan. Therefore, the following assessment applies to both the preferred development plan and the SCE overhead electric line alternative plan.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

Spring Trails would be built in an area that presently does not have any public infrastructure such as water and wastewater pipelines; onsite roads; or electrical, natural gas, or telecommunication utilities. The 307-unit residential development plan would require the expansion of these public infrastructure services. The surrounding community of Devore has limited infrastructure to support the expansion of these services. For

example, the water and wastewater infrastructure must be expanded in the community of Devore before it can be expanded to the Spring Trails site. Roadway improvements, electrical service, natural gas service, and telecommunication systems must be expanded in the area connecting the project to existing development as well.

The expansion of onsite infrastructure for Spring Trails would not itself induce growth in the area, since it would be used solely by residences in Spring Trails, but the expansion of infrastructure in the community of Devore may cause indirect growth, such as on the 26.4-acre County area being annexed with the project site. Additional development in Devore could be supported by the expansion of infrastructure in this area, allowing for development that would not otherwise be supported. The expansion of infrastructure in Devore is being completed to serve the Spring Trails development and other development in the area, so the project is not the sole reason for the expansion. However, the approval of the Spring Trails development would guarantee the completion of all required infrastructure improvements in the surrounding area and on the project site since these expansions are necessary for project operation.

The 26.4-acre annexation area is in San Bernardino County and in the City of San Bernardino's unincorporated sphere of influence. The site is currently subject to County of San Bernardino's General Plan and Zoning Code. Under the County's General Plan, the northern portion of the 26.4-acre annexation area is designated as Rural Living (RL-5), which allows up to one dwelling unit per five acres, and the southern portion of the annexation area is designated as Single Residential (RS-1), which allows up to one dwelling unit per acre. Since the 26.4-acre annexation area is within the City of San Bernardino's SOI, the annexation area is currently prezoned by the City as Residential Estate (RE), allowing one dwelling unit per acre. Annexation into the City would allow some land owners within the 26.4-acre area to develop their property at densities greater than what is currently permitted under the County's General Plan.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

The public services that would serve the Spring Trails project, including police, fire protection, school, and library services, would require varying degrees of expansion. The San Bernardino City Fire Department and the San Bernardino County Fire Department would service the site during a fire emergency. The nearest City fire station (232) would increase its staffing levels from three to four to service the site. Any expansion of police services would be financed through the law enforcement developer fees charged to the project developer. The Spring Trails project would cause a slight increase in police service calls.

The school services provided to the site would need to be expanded, especially for elementary-aged students. The nearest elementary school (North Verdemont Elementary School) has a capacity of 82 students, and Spring Trails is expected to generate 102 elementary-aged students. Although Senate Bill 50 states that developer fees are adequate mitigation for school service impacts, the school service of San Bernardino City Unified School District would still need to be expanded.

The library system would need to expand its collection of library items and technology services to meet the demands of the population generated by Spring Trails.

A full discussion of public service demand can be found in Section 5.12 of this EIR.

Since all types of public services are currently inadequate to meet project demands, the expansion of these services would need to increase by at least the amount needed to meet project demands. However, the increase in the services of fire, police, library, and school facilities would be applied to all existing and future

development in the area. Any additional increase in service that exceeds the project demands may induce additional growth.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Spring Trails includes residential development that would provide housing for employees of the San Bernardino area. The City of San Bernardino is considered to be jobs-rich, with a projected jobs-to-housing balance of 2.00 in 2035 (without project). Jobs in the City of San Bernardino are expected to grow from 81,115 jobs in 2000 to 157,088 jobs in 2035. With the proposed project, the jobs-to-housing balance would be 1.99 in 2035. This would create a more balanced jobs-to-housing ratio. The proposed project would not create a need for additional housing nor would it create a demand for jobs.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

The approval of Spring Trails would require the approval of discretionary actions that may set precedents for future projects with similar characteristics. Spring Trails would require approval of: a general plan amendment (GPA–02-09) to approve the annexation of the site, change the zoning, and to establish a Hillside Management Overlay District (HMOD); a Specific Plan; a Conditional Use Permit (CUP–2-26) to allow subdivision in the HMOD; a Tentative Tract Map (TTM 15576); and a Development Agreement with the City. The approval of these actions change the existing restrictions on growth set by the general plan and zoning laws, which may encourage growth of a similar manner in the areas surrounding Spring Trails or other undeveloped areas near or in the City of San Bernardino.

If additional development were allowed in the vicinity of the project, it would cause additional environmental impacts. However, future projects would need to complete environmental review, and discretionary approval would need to be given to projects following review by the City Council. Spring Trails would not change the existing protocol for project approval and would not provide precedents or make it more likely for other projects to gain approval of similar applications.

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11. Organizations and Persons Consulted

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13. Bibliography

13.1 REFERENCES

Bies and Hansen. 2003. *Engineering Noise Control: Theory and Practice*. New York: Spon Press.

Bolt, Beranek and Newman. 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*. Prepared for the United States Environmental Protection Agency.

Bossard, Carla C., John M. Randall, and Marc C. Hoshovsky. 2000. *Invasive Plants of California's Wildlands*. Berkeley: University of California Press.

Bunker Hill Groundwater Basin Water Conservation District. 2009. Engineering Investigation: Bunker Hill Basin 2008–2009.

California Air Resources Board (CARB). 2010, August. *Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.*

———. 2008, December. *Climate Change Scoping Plan, a Framework for Change.*

———. 2007a, April 20. Proposed Early Actions to Mitigate Climate Change in California.

———. 2006, November 1. EMFAC2007 Computer Model. Version 2.3.

———. 2005, April. *Air Quality and Land Use Handbook: A Community Health Perspective*.

California Climate Action Team (CAT). 2007, April 20. *CAT Proposed Early Actions to Mitigate Climate Change in California*.

———. 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature. California Environmental Protection Agency.

California Department of Forestry and Fire Protection (CAL FIRE). 2007a. Fire Hazard Severity Map for State Responsibility Areas.

California Department of Health Services (CDHS). 1999. Short Factsheet on EMF.

California Department of Transportation (Caltrans), Division of Environmental Analysis. 2002. *Transportation Related Earthborne Vibration: Caltrans Experiences*. Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.

California Department of Water Resources (CDWR). 2011. Urban Water Management. http://www.water.ca.gov/urbanwatermanagement/. Accessed on March 1, 2011.

———. 2009a. *Notice to State Water Project Contractors*.

———. 2009b, July. *California's Drought Update July 31, 2009*.

———. 2006, July. Progress on Incorporating Climate Change into Management of California's Water Resources.

California Energy Commission. (CEC). 2006. *Our Changing Climate, Assessing the Risks to California*. California Climate Change Center. Report CEC-500-2006-077.

California Natural Resources Agency (CNRA). 2009, July. Initial Statement of Reasons for Regulatory Action: Proposed Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97.

City of San Bernardino. 2007, July. Recirculated Draft Environmental Impact Report No. 562: Martin Ranch Master Planned Development.

City of San Bernardino. 2005a. General Plan Update.

City of San Bernardino. 2005b. General Plan Update and Associated Specific Plan Environmental Impact Report.

City of San Bernardino Municipal Water Department. 2005. *Urban Water Management Plan.*

Dolinka Group, LLC. 2008, December 17. School Facilities Needs Analysis, San Bernardino City Unified School District.

Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. US Department of Transportation. Report No. FHWA-RD77-108.

Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment*. US Department of Transportation.

Fratus, Mat (Deputy Chief). 2009, July 16. Response to Service Questionnaire. San Bernardino City Fire Department.

Harden, Deborah. 2004. *California Geology*. Upper Saddle River, NJ: Pearson Education, Inc.

Integrated Urban Forestry (IUF). 1998. Arborist Report, Martin Ranch, San Bernardino County.

Intergovernmental Panel on Climate Change's (IPCC). 2001. 2001 IPCC Third Assessment Report.

Litchfield, Matthew. 2009, Aug 4. San Bernardino Municipal Water Department Response to the Spring Trails EIR Water Questionnaire.

Michael Brandman Associates (MBA). 2008. Habitat Assessment Report, Spring Trails Project Site (Access Roads), Unincorporated San Bernardino County, California.

———. 2007b. Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report, Martin Ranch.

———. 2007c. Post-Disturbance Arborist Report Update, Martin Ranch Project Site, Unincorporated San Bernardino County, California.

———. 2007a. General Biological Resources Report, Martin Ranch Project Site, Unincorporated San Bernardino County, California.

National Institute of Environmental Health Sciences (NIEHS). 2002, June. *EMF: Electric and Magnetic Fields Associated with the Use of Electric Power.*

Natural Resources Assessment, Inc. (NRA). 2004. General Biological Resources Assessment Update, Martin Ranch Property, San Bernardino County, California.

PBS&J. 2009a. Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan (Access Roads), San Bernardino County, California.

———. 2009b. Delineation of Jurisdictional Waters and Wetlands, Spring Trails Specific Plan, San Bernardino County, California.

———. 2009c. San Bernardino Kangaroo Rat Presence/Absence Trapping Surveys, Spring Trails Project Site.

———. 2009d. Rare Plant Survey Letter Report, Spring Trails Specific Plan.

———. 2009e. Review and Update of the Biological Resources Associated with the Spring Trails Development and Associated Access Roads.

———. 2009f. Spring Trails Specific Plan, Biological Resources Assessment: Compiled from Assessments and Surveys Conducted from 1998 to 2009.

PCR Services Corporation. 1999. Biological Resources Assessment and Report for the Martin Ranch Property, San Bernardino County, California.

Ramirez, Albert J (Project Manager). 2011, April 4. Southern California Edison Submittal Requirements for Joint Relocation Projects.

Rimpo and Associates. URBEMIS2007 Computer Model. Version 9.2.2.

San Bernardino Municipal Water Department (SBMWD). 2010, March 3. *Water Distribution Analysis Tentative Tract Map 15576*.

San Bernardino Associated Governments (SANBAG). 2003. *San Bernardino County Congestion Management Plan, 2003 Update.*

S.C. Dodd Biological Consulting. 2002. Results of a Live Trapping Survey for the Federally Endangered San Bernardino Kangaroo Rat on the Secondary Access Route for the Proposed Martin Ranch Project.

Society of Automotive Engineers, Inc. (SAE). 1971, October. *House Noise: Reduction Measurements for Use in Studies of Aircraft Flyover Noise*. AIR 1081.

Sonoma Technology, Inc. CALINE4 Computer Model, Version 1.31.

South Coast Air Quality Management District. (SCAQMD). 2007, June. *Final 2007 Air Quality Management Plan*.

———. 2006, October. *Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds*.

———. 2003, June. *Final Localized Significance Threshold Methodology*.

———. 1993, April. *CEQA Air Quality Handbook*.

State Water Resources Control Board (SWRCB). 20100, February. *Final 20X2020 Water Conservation Plan.*

United States Environmental Protection Agency (USEPA). Industrial Source Complex Short-Term Dispersion Model (ISCST3).

Wald, et al. 1999, August. Relationships Between Peak Ground Acceleration, Peak Ground Velocity, and Modified Mercalli Intensity in California. *Earthquake Spectra.* Vol. 15, No. 3.

Western-San Bernardino Watermaster. 2009, August 1. *Annual Report of the Western-San Bernardino Watermaster for Calendar Year 2008*.

White and Leatherman Bioservices (WLB). 2002a. Biological Technical Report Update: Proposed Martin Ranch Project, San Bernardino, California.

———. 2002b. Results of Focused Presence/Absence Surveys for the Coastal California Gnatcatcher on the Martin Ranch Access Road Project.

———. 2002c. Biological Technical Report: Proposed Secondary Access Road, Martin Ranch Project, San Bernardino, California.

13.2 WEBSITES

Bay Delta Conservation Plan (BDCP). 2011. Plan Development Schedule. http://baydeltaconservationplan.com/Home.aspx.

California Air Resources Board (CARB). 2007. Air *Pollution Data Monitoring Cards (2002, 2003, 2004, 2005, 2006)*. http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start.

———. 2007b, February. *Ambient Air Quality Standards*. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

———. 2007c, July. *Area Designations: Activities and Maps*. http://www.arb.ca.gov/desig/desig.htm.

California Department of Finance. 2009, February 23. California Statistical Abstract 2008. Table B-4: Total Population: California Counties and Cities. http://www.dof.ca.gov/HTML/FS_DATA/STAT-ABS/documents/B4.pdf

California Department of Forestry and Fire Protection (CAL FIRE). 2009. Fire Hazard Severity Zone Re-Mapping Project. http://www.frap.fire.ca.gov/projects/hazard/fhz.html.

———. 2007b. Archived Incidents: Martin Ranch Fire. http://cdfdata.fire.ca.gov/incidents/incidents_archived.

California Department of Health Services, 1999. Short Factsheet on EMF. http://www.ehib.org/emf/shortfactsheet.PDF

California Department of Health Services, 2002. The Risk Evaluation: An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances. http://www.ehib.org/emf/RiskEvaluation/riskeval.html

California Department of Resources Recycling and Recovery (CalRecycle). 2009a. Jurisdiction Profile for San Bernardino. http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=C&JURID=426&JUR=San+Bernardino (Accessed May 28, 2009).

———. 2009b, April. Goal Measurement Assistance for Local Jurisdictions. http://www.ciwmb.ca.gov/LGCentral/GoalMeasure/default.htm.

———. 2009c, October. Jurisdiction Diversion/Disposal Rate Summary for the City of San Bernardino. http://www.ciwmb.ca.gov/LGTools/MARS/DrmcMain.asp?VW=Disposal.

California Department of Water Resources (CDWR). 2011a. Executive Update: Hydrologic Conditions in California. http://cdec.water.ca.gov/cgi-progs/reports/EXECSUM.

———. 2011b. Conditions for Major Reservoirs: 19-Jun-2011. http://cdec.water.ca.gov/reservoir.html.

———. 2010, November. California Drought Contingency Plan. http://www.water.ca.gov/drought/.

———. 2009b. *Using Future Climate Projections to Support Water Resources Decision Making in California*. http://www.energy.ca.gov/2009publications/CEC-500-2009-052/CEC-500-2009-052-D.PDF

California Fire Alliance. 2009. Communities as Risk. http://www.cafirealliance.org/communities_at_risk/.

California Natural Resources Agency (CNRA) and California Environmental Protection Agency (Cal/EPA). 2007. California Watershed Portal. http://cwp.resources.ca.gov/calw_browse.php.

California Public Utilities Commssion, 2008. The Certificate of Public Convenience and Necessity Application Process for Utility Construction Transmission Projects: A Step-By-Step Guide. http://www.cpuc.ca.gov/NR/rdonlyres/8B0617C4-786B-4755-9320-C999F61EDE31/0/EIRStepbyStep_August_2008.pdf

Employment Development Department. 2009. Labor Market Information Division. Monthly Labor Force Data for Cities and Census Designated Places. http://www.labormarketinfo.edd.ca.gov.

National Institute of Environmental Health Sciences of the National Institutes of Health, 1998. Assessment of Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. http://www.niehs.nih.gov/health/assets/docs_a_e/emf1.pdf

National Institute of Environmental Health Sciences of the National Institutes of Health, 1999. Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. http://www.niehs.nih.gov/health/assets/docs_f_o/niehs-report.pdf

National Wildfire Coordinating Group (NWCG). 2011, May. Glossary of Wildland Fire Terminology. http://www.nwcg.gov/pms/pubs/glossary/o.htm

Natural Resource Conservation Service. 2009. Invasive and Noxious Weeds. http://plants.usda.gov/java/noxiousDriver#federal.

Omnitrans. 2009. Omnitrans Trip Planner. www.omnitrans.org.

PPL Electric Utilities. 2008. Frequently Asked Questions about EMF. http://www.pplreliablepower.com/faq+-+emf.htm.

San Bernardino Association of Governments (SANBAG). 2011. Interstate 15/Interstate 215: Interchange Improvement Project. http://www.sanbag.ca.gov/projects/interchange_devore.html

San Bernardino Municipal Water Department, City of (SBMWD). 2008, July 10. The City of San Bernardino's 2007 Consumer Confidence Report. http://www.ci.san-bernardino.ca.us/civica/filebank/blobdload.asp?BlobID=5790.

———. 2007. *City of San Bernardino Municipal Water Department Water Facilities Master Plan*. http://www.ci.san-bernardino.ca.us/sbmwd_divisions/water_utility/engineering/water_facilities_master_plan___2007.asp.

———. 2005, December. 2005 Urban Water Management Plan. http://www.ci.san-bernardino.ca.us/civica/filebank/blobdload.asp?BlobID=4195.

San Bernardino Valley Municipal Water District (SBVMWD), *et al*. 2011, May. 2010 San Bernardino Valley Regional Urban Water Management Plan. http://www.ci.san-bernardino.ca.us/water/default.asp.

———. 2009a. *Change in Groundwater Storage for the San Bernardino Basin Area Calendar Years 1934 to 2008.* http://webserver.sbvmwd.com/imgs/reports/cis1934to2008.pdf.

———. 2009b. *Integrated Regional Water Management Plan.* http://www.sbvmwd.com/integrated_regional_groundwater_management_plan/.

South Coast Air Quality Management District (SCAQMD). South Coast AQMD List of Current Rules. *California Air Resources Board*. http://www.arb.ca.gov/drdb/sc/cur.htm.

South Coast Missing Linkages Project. 2004. *A Linkage Design for the San Gabriel-San Bernardino Connection*. http://www.scwildlands.org/reports/SCML_SanGabriel_SanBernardino.pdf.

Southern California Association of Governments (SCAG). 2008. Regional Transportation Plan Growth Forecast. http://www.scag.ca.gov/forecast/index.htm

Southern California Earthquake Data Center (SCEC). 2009. Historic Earthquakes of Southern California. http://www.data.scec.org/clickmap.html.

US Census Bureau. 2008. American Factfinder. San Bernardino City, California. http://factfinder.census.gov/servlet/ADPTable?_bm=y&-context=adp&-ds_name=ACS_2007_1YR_G00_&-tree_id=307&-redoLog=true&-_caller=geoselect&-geo_id=16000US0665000&-format=&-_lang=en.

US Environmental Protection Agency (USEPA). 2009a. Envirofacts Data Warehouse. http://www.epa.gov/enviro/index.html.

———. 2009b. Superfund Information Systems. http://www.epa.gov/superfund/sites/siteinfo.htm.

———. 2007, September 7. National Primary Drinking Water Regulations. http://www.epa.gov/safewater/contaminants/index.html.

———. 2004, September. Water Permitting 101. http://www.epa.gov/npdes/pubs/101pape.pdf.

US Geological Survey. 2009, October 27. The Modified Mercalli Intensity Scale. http://earthquake.usgs.gov/learn/topics/mercalli.php.

Western Regional Climate Center (WRCC). Western U.S. Climate Historical Summaries. Lytle Creek PH Monitoring Station (ID No. 045215). http://www.wrcc.dri.edu/summary/Climsmsca.html.

13.3 PERSONAL COMMUNICATIONS

Cronquist, Roberta (Principal Project Engineer, Water Resources Division). 2009, December 9. E-mail. Rick Engineering Company.

Figueroa, Luis (Engineer). 2009, December 4. Phone conversation. Rick Engineering Company.

Flesher, John (Captain). 2009, August 5. Phone conversation. San Bernardino County Fire Department.

Lewis, Ken (Captain). 2009, August 3. Phone conversation. San Bernardino County Fire Department.

Moon, Dennis (Battalion Chief). 2009, August 4. Phone conversation. San Bernardino Fire Department.

Nevarez, Michael (Water Utility Engineer). 2009a, August 12. Phone Conversation. San Bernardino Municipal Water Department.

———. 2009b, August 17. E-mail. San Bernardino Municipal Water Department.

O'Neill, Richard (Principal Project Engineer). 2009b, December 10. E-mail. Rick Engineering Company.

_____. 2009a, December 4. E-mail. Rick Engineering Company.

Price, Millicent (Interim Director). 2009a, June 3. Response to Questionnaire on Library Services. San Bernardino Public Library.

———. 2009b, June 8. E-mail. San Bernardino Public Library.

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