



DRAFT ENVIRONMENTAL IMPACT REPORT
SCH NO. 2012071065

HARMONY SPECIFIC PLAN
(SPR-011-001)

MARCH 2014



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Section 1 – Executive Summary

1.1 Introduction

This Draft Environmental Impact Report (DEIR) has been prepared to inform the decision-makers and the public of the potentially significant environmental affects associated with implementation of the proposed Harmony Specific Plan. The DEIR has been prepared pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code, Sections 21000, et seq.) and the State *CEQA Guidelines* (California Code of Regulations, Sections 15000, et seq.). The City of Highland is the Lead Agency under CEQA and is responsible for the preparation of this DEIR.

1.2 Project Location and Setting

The Harmony Specific Plan (also referred to throughout this document as either “Harmony” or “Specific Plan”) is a comprehensive plan for the development of a master planned community in the eastern portion of the City of Highland. The site is located on approximately 1,657 acres within the City of Highland, in San Bernardino County, California as shown in **Figure 3-1 – Regional Map**. The Project site is located approximately six miles east of the State Route 210 (SR-210) freeway, 4.5 miles north of the Interstate 10 (I-10) freeway and just north of SR-38.

As shown in **Figure 3-2 – Location Map**, the Project site is located along the base of the San Bernardino Mountains. Immediately to the north of the Project site is the San Bernardino National Forest. Mill Creek generally forms the southern and southeastern boundary of the Project site. Emerald Avenue and a portion of Tres Lagos Street are the boundaries for the southwestern portion of the Project site, and the Santa Ana River forms the boundary to the west and northwest.

1.3 Existing Site Description

The Project site is currently vacant and contains citrus trees from a former citrus orchard in the northwest portion of the site. Although this area still contains live citrus trees, the area has not been cultivated or tilled and is also filled with non-native plants and other similar vegetation. According to the County of San Bernardino, no agricultural has taken place on the Project site for over 20 years. Only the first few rows of trees on the Project site adjacent to Tres Lagos Street have been removed to maintain a fire break between the property and the adjacent residences. Remnant orchards are scattered throughout the central and eastern portion of the site. Remnants of structure foundations, aqueducts, concrete waterlines, and wells are scattered on-site and have not been completely removed.

In addition to past agricultural uses, the Project site was acquired to provide impervious materials for the construction of the Seven Oaks Dam, located approximately 0.75 miles north of the Project site. Approximately six million cubic yards of material was excavated from the Project site and conveyed to the construction site.

The Project site can be characterized as mostly gently sloping and rolling terrain in the south and west, with moderately to steeply sloping terrain in the north and northeast. The elevation of the site varies from approximately 1,800 feet above sea level along the western boundary to approximately 2,700 feet above sea level at the foothills on the northeast side of the property.

Site access is limited to Greenspot Road in the northwest corner of the site and Newport Avenue in the southwest portion of the site.

1.4 Project Description

The proposed Project is a master planned residential community that will be implemented through the adoption of the Harmony Specific Plan. The Specific Plan will establish the zoning for the Project site and include a land use plan, designation of planning areas, design and landscaping guidelines, and development standards for the development of the Project site. As shown in **Figure 3-8 – Proposed Land Use Plan** and reflected in **Table 1-A – Land Use Summary** below, the Harmony Specific Plan will consist of the following land uses:

- **Residential:** Residential land use comprises approximately 658 acres of the Project site, providing a variety of residential detached and attached housing types. The following categories of residential land use are planned for Harmony.
 - Estate Residential: 4 planning areas
 - Low Density Residential: 26 planning areas (one planning area is partially covered with a Neighborhood Commercial Overlay)
 - Medium Density Residential: 14 planning areas (two planning areas are entirely covered with a Neighborhood Commercial Overlay)
 - Medium-High Density Residential: 4 planning areas
 - High Density Residential: 1 planning area (partially covered with a Neighborhood Commercial Overlay)
- **Neighborhood Commercial:** Approximately 5.7 acres of the Project site is planned for development of neighborhood commercial land uses to provide retail goods and services to the community. An additional 15.9 acres of neighborhood commercial are allowed in residential areas designated with a Neighborhood Commercial Overlay. Areas designated with a Neighborhood Commercial Overlay may develop as their underlying residential land use, as neighborhood commercial, or as a combination of residential and neighborhood commercial uses.
- **Recreation and Open Space:** Of the total Project area of 1,657 acres, approximately 830 acres, or 50% of the entire community, is planned for parks, recreation, and open spaces (natural and manufactured). Approximately 535 acres will remain in natural open space, while approximately 110.7 acres of parks and 111.8 acres of community greenway will be developed. Parks will be improved as active and passive recreational areas. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are designed for activities such as walking, hiking and quiet reflection. Harmony offers its residents the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails that meander through the community's greenway system. Approximately one acre of Harmony's community greenway

has been designated with an Agriculture Overlay; this area is envisioned to provide space for community gardens, stands for local farmers to sell their produce, and/or potentially recreational amenities for residents. The Harmony Specific Plan also includes the provision of approximately 4.3 acres for “The Parkhouse”, a private recreation facility featuring a clubhouse, swimming pool, and other active and passive amenities.

- Community Public Facilities:** The Harmony Specific Plan provides for the development of one elementary school on an 8.3-acre site. The elementary school site is adjacent to a 5.0-acre joint-use neighborhood park at the center of the community to ensure equitable access for all Harmony residents. The elementary school will be accessible by pedestrians and bicyclists via the proposed multipurpose trail network. The Specific Plan also identifies a 1.5-acre site for the development of a new fire station. Additional public facilities totaling 18.5 acres could include water reservoirs, a water treatment facility, sewage treatment plant, or pump station.

Table 1-A – Land Use Summary

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Residential				
Estate Residential, ER (0-2.0 du/ac)	84.4	81	84.4	81
Low Density Residential, LDR (2.1-6.0 du/ac)	382.1	1,630	381.1	1,624
Medium Density Residential, MDR (6.1-12.0 du/ac)	146.4	1,188	132.5	1,049
Medium-High Density Residential, MHDR (12.1-20.0 du/ac)	34.4	518	34.4	518
High Density Residential, HDR (20.1-30.0 du/ac)	10.7	215	9.7	195
Residential Subtotal	658.0 (40%)	3,632	642.1(39%)	3,467
Neighborhood Commercial				
Neighborhood Commercial, NC (0.23-0.25 FAR)	5.7	62,073 sf	21.6	225,423 sf
Neighborhood Commercial Subtotal	5.7 (0.3%)	62,073 sf	21.6 (1.5%)	225,423 sf

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Recreation and Open Space				
Parks, P	110.7	-	110.7	-
Community Greenway, CG with 1.0 acre Agriculture Overlay (0.20 FAR)	111.8	8,712	111.8	8,712
Private Recreation, PR	4.3	-	4.3	-
Natural Open Space, NOS	535.2	-	535.3	-
Manufactured Open Space, MOS	72.0	-	72.0	-
Recreation And Open Space Subtotal	834.0 (50%)	8,712	834.0 (50%)	8,712
Community Public Facilities				
Elementary School, S (0.20 FAR)	8.3	72,310 sf	8.3	72,310 sf
Public Facilities, PF	20.0	-	20.0	-
Right-of-Way, ROW	131.4	-	131.4	-
Community Public Facilities Subtotal	159.7 (9.5%)	72, 310 sf	159.7 (9.5%)	72,310 sf
PROJECT TOTALS	1,657.3	3,632 units and 143,095 sf	1,657.3	3,467 units and 306,445 sf

Source: Harmony Specific Plan, March 2014 p. 4.3.

1.5 Areas of Controversy and Issues to be Resolved

The Harmony Specific Plan Project has been in the planning/due diligence stage since 2008. Over that period of time, the applicant and City of Highland have initiated contact with local groups, residents-particularly neighbors, and agencies which might have an interest in the Project approval. Based on early consultations, responses from the Notice of Preparation, and as a result of the Scoping Session held for the Project, the following is a brief listing of the areas of controversy related to the Project approval:

- The proximity of the Project site to the San Bernardino National Forest
- Proximity to commercial agriculture (citrus and bee keeping operations) to the south and west of Project site and related agricultural operations use of pesticides, fertilizers, and loud equipment which will impact the residential components of the Project
- Biological impacts to threatened and endangered species, habitat, and wildlife movement

- Aesthetical impacts to rural and natural hillsides, including lighting
- Air quality and greenhouse gas impacts
- Traffic impacts, especially impacts to SR-38 and impacts to any affected local and regional transportation facilities.
- Impacts to water quality to Mill Creek and the Santa Ana River from stormwater and urban runoff
- Impacts due to water reclamation and waste disposal
- Impacts to life and property as a result of earthquake, flooding, wildland fires and/or water quality.

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved. This includes choices among alternatives and whether or how to mitigate significant impacts. The major issues to be resolved for the Project include decisions by the City of Highland as to whether:

- This DEIR adequately describes the potential environmental impacts of the proposed Project;
- The recommended mitigation measures should be adopted or modified;
- Additional mitigation measures need to be identified;
- The Project should or should not be approved as proposed; or
- The Project should be modified based on the alternatives considered in this DEIR.

1.6 Environmental Analysis

The following table, **Table 1-B – DEIR Impact Summary Matrix**, provides a summary of impacts related to the proposed Project. The table identifies significant environmental impacts resulting from the Project along with applicable mitigation, pursuant to State *CEQA Guidelines* Section 15123(b) (1).

Table 1-B – DEIR Impact Summary Matrix

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
Aesthetics	The proposed Project has the potential to result in a substantial adverse effect on a scenic vista, or substantially degrade existing visual character or quality of the site and its surroundings.	MM AES 1: To avoid the creation of an aesthetically offensive site open to public view, all water reservoir tank(s) to be located within the Project site shall be screened using paint colors or landscaping buffers that blend in with the surrounding hills. Any landscape screening plans shall be submitted to East Valley Water District for approval prior to approval of final construction documents for the water tank(s)/reservoirs.	Less than significant.
	The proposed Project would not substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.	No mitigation is required.	Less than significant.
	The proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	No mitigation is required.	Less than significant.
Agricultural and Forestry Resources	The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation, to non-agricultural use.	No mitigation is required.	Less than significant.
	The proposed Project would not conflict with an existing agricultural use, or Williamson Act Contract.	No mitigation is required.	No impact.
	The proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)),	Not mitigation is required.	No impact.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	<p>timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Resources Code section 51104 (g))</p> <p>The proposed Project has the potential to involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.</p>	<p>MM AG 1: To reduce impacts due to incompatibility between agricultural uses (existing bee keeping east of the Project) and future development, proposed residences, school buildings, and commercial retail structures shall maintain a minimum buffer of 300 feet from existing active bee keeping. The 300-foot buffer area may include parks, open space, public road rights-of-way, parking lots, and service or maintenance areas. Water features that provide consistent sources of water, including but not limited to, lakes, ponds, pools, spas, or fountains shall not be permitted within the buffer area. The 300-foot buffer area, and the uses proposed, shall be identified on development applications submitted to the City of Highland for implementing projects for which any portion of such a project's boundary is within 300 feet of active bee keeping. The requirement for a 300 foot buffer is not applicable for any new bee keeping activities that commence after approval of the Harmony Specific Plan.</p>	<p>Less than significant.</p>
<p>Air Quality</p>	<p>The proposed Project would not conflict with or obstruct implementation of an applicable air quality plan.</p> <p>The proposed Project has the potential to violate air quality standards or contribute substantially to an existing or projected air quality violation.</p>	<p>No mitigation is required.</p> <p>MM AQ 1: During construction, the developer or construction contractor shall ensure mobile construction equipment is maintained in good condition and properly tuned per manufacturer's specifications. Equipment maintenance records and equipment design specification data sheets shall be available during construction. Compliance with this measure shall be subject to periodic inspections by the City.</p> <p>MM AQ 2: During construction, the developer or construction contractor shall ensure electricity from power poles shall be used instead of from temporary diesel- or gasoline-powered generators where economically and physically feasible. Approval will be required by the City prior to issuance of grading permits.</p> <p>MM AQ 3: During construction, the developer or construction contractor shall submit a traffic control plan that shall minimize vehicle and truck idling time during construction through the implementation of traffic control measures (e.g., including turn lanes</p>	<p>Less than significant.</p> <p>Significant and Unavoidable. A Statement of Overriding Considerations is required prior to Project approval.</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>during construction activities, scheduling of construction activities to minimize congestion, parking configuration to minimize traffic interference).</p> <p>MM AQ 4: During construction, the construction contractor shall implement dust control measures in accordance with SCAQMD Rule 403. The construction contractor shall include in construction specifications the fugitive dust control measures in accordance with SCAQMD Rule 403, with construction controls being at least as effective as the following, which were incorporated in the construction emissions estimates:</p> <ul style="list-style-type: none"> • Watering active construction areas at least twice daily to minimize fugitive dust emissions;¹ • Maintaining soil stabilization of inactive construction areas with exposed soil via water, non-toxic soil stabilizers, or replaced vegetation; • Covering all haul trucks or maintaining at least six inches of freeboard • Suspending earthmoving operations or increasing watering to meet Rule 403 criteria if winds exceed 25 mph; • Minimizing track-out emissions using the allowable methods; and, • Limiting vehicle speeds to 15 miles per hour or less in staging areas and on haul roads. 	
	<p>The proposed Project has the potential to result in a cumulatively considerable net increase in criteria pollutant emissions for which the region is non-attainment.</p>	<p>See MM AQ 1 through MM AQ 4, above.</p>	<p>Significant and Unavoidable. A Statement of Overriding Considerations is required prior to Project approval.</p>
	<p>The proposed Project has the potential to expose sensitive to substantial pollutant concentrations.</p>	<p>See MM AQ 1 through MM AQ 4, above.</p>	<p>Significant and Unavoidable. A Statement of Overriding Considerations is required prior to Project approval.</p>

¹ Note that the control efficiency of watering is dependent on numerous variables such as soil/ground conditions, temperature, and vehicle travel specifics. For unpaved roads, increased frequency and/or water amounts are expected to improve the control efficiency.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project would not create objectionable odors that would affect a substantial number of people.	No mitigation is required.	Less than significant.
Biological Resources	The proposed Project has the potential to result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.	<p>MM BIO 1: Several areas with sensitive habitats on the Project site will not be developed: 31.8 acres of the RAFSS habitat supporting Santa Ana River Woollystar along the site’s western boundary as well as the riparian habitats in Morton Canyon. Access to these areas will be restricted. An appropriate barrier/fence shall be installed to prevent unauthorized use. Educational signage shall also be posted to educate residents of the sensitivity of biological resources in each area, as well as the presence of a federal and state mandated conservation area to the west of the Project site, including the woolly star preserve area and the pending Upper Santa Ana River Wash and HCP.</p> <p>MM BIO 2: In order to reduce potential direct impacts to SBKR from the loss of RAFSS habitat and indirect impacts from the release of storm water into the RAFSS habitat, the loss of RAFSS habitat shall be mitigated by one or a combination of the following subject to USFWS and CDFW approval:</p> <ul style="list-style-type: none"> • purchase of RAFSS habitat at a 2:1 ratio from the Cajon Creek Conservation Bank; • payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for RAFSS habitat at a 2:1 ratio; • restoration and long-term management of onsite of mature RAFSS habitat to intermediate habitat at a 2:1 ratio; • and/or restoration and long-term management of off-site low quality RAFSS immediate south of the proposed storm drain facility to high quality RAFSS habitat at a 2:1 ratio. <p>MM BIO 3: Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Wildlife Code. If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extend from February 1 - August 31, but can vary from year to year based upon seasonal weather conditions), a pre-construction clearance survey for nesting birds, should be conducted within 7 days prior to any ground disturbing activities. This will ensure that no nesting birds will be disturbed during construction.</p>	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	<p>The proposed Project has the potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.</p>	<p>MM BIO 4: In order to reduce impacts from the loss of approximately 1.29 acres of waters of the US to less than significant levels this loss shall be mitigated by one or a combination of the following subject to USACE approval:</p> <ul style="list-style-type: none"> • purchase of mitigation credits at a 2:1 ratio, or the USACE agreed upon ratio, from an USACE approved Mitigation Bank; • payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for the loss of waters of the US at the agreed upon ratio; • and/or the enhancement, conservation, and long-term management of onsite waters of the US at the agreed upon ratio. If restoration and enhancement of onsite ephemeral stream habitat is a selected option, implementation shall be detailed in a Habitat Mitigation and Monitoring Plan (HMMP) that shall be prepared, reviewed and approved by USACE as part of the 404 permitting process. <p>MM BIO 5: In order to reduce impacts from the loss of approximately 31.48 acres of streambeds as well as the 88.8 acres of RAFSS habitat (38.1 acres of intermediate RAFSS habitat and 50.7 acres of mature RAFSS habitat) under CDFW jurisdiction to less than significant levels this loss shall be mitigated by one or a combination of the following subject to CDFW approval:</p> <ul style="list-style-type: none"> • purchase of streambed and associated riparian habitat at a 2:1 ratio from the Cajon Creek Conservation Bank; • payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for the loss of streambed and associated riparian vegetation at a 2:1 ratio; • restoration and long-term management of onsite streambeds and associated riparian vegetation at a 2:1 ratio; • and/or restoration and long-term management of off-site low quality streambed and associated riparian vegetation to high quality habitat at a 2:1 ratio. If restoration and enhancement of riparian habitat is a selected option, implementation shall be detailed in an HMMP that shall be prepared, reviewed, and approved by CDFW as part of the Streambed Alteration Agreement process. 	<p>Less than significant</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	<p>The proposed Project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</p>	<p>No mitigation required.</p>	<p>Less than significant</p>
	<p>The proposed Project has the potential to 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.</p>	<p>MM BIO 1, above.</p> <p>MM BIO 6: In order to reduce impacts from the Project on existing Crafton Hills Linkage wildlife corridor a wildlife movement corridor shall be developed in the eastern portion of the Project site that shall meet the following requirements:</p> <ul style="list-style-type: none"> • Provide connectivity between the San Bernardino Mountains and Crafton Hills, two areas of naturally occurring habitats that were once contiguous wildlife habitat prior to human development in the region, including Highway 38; • Provide a needed avenue for genetic interchange, both for wildlife, as well as plant species; • Identify a conduit or wildlife movement corridor in response to environmental changes and natural disasters; and • Allow individuals of a species to re-colonize an area from which they may become extirpated. <p>The following performance standards shall be used to identify the wildlife corridor alignment and shall continue to be used to determine its ongoing suitability for providing movement opportunities and connectivity for wildlife between the San Bernardino Mountains and the Crafton Hills:</p> <ol style="list-style-type: none"> 1. A wildlife corridor at least 300 feet wide shall be established and vegetated with plant species similar to those areas in the San Bernardino Mountains and in the Crafton Hills being connected by the corridor; 2. Target species shall be identified that require movement opportunities between the San Bernardino Mountains and Crafton Hills; 3. The movement and dispersal patterns, including seasonal 	<p>Less than significant</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>migration patterns, for each target species or species of interest can be shown to be routinely migrating between the San Bernardino Mountains and Crafton Hills;</p> <p>4. The corridor shall be designed to accommodate movement by large mammals, in particular, mule deer, mountain lion, bobcat and American badgers;</p> <ul style="list-style-type: none"> o Large mammals can expected to be able to encounter and use the corridor; o The habitat within the corridor shall be conducive to attracting the identified large mammals and to encourage movement through the corridor; o The corridor shall be created to provide sufficient shelter, food and water for wildlife to move through it; and o The corridor shall be designed to avoid, where feasible, impediments to the use of the corridor such as human activity, road crossings, fencing, and stream channelization. Two existing road crossing will be maintained to provide access from the Project site to residential developments to the east. <p>5. Specific management guidelines shall be specified that include:</p> <ul style="list-style-type: none"> o Restrictions on land uses within and adjacent to the corridor; o Domestic pets, off-road vehicles, lighting, and recreational activities will be not permitted within the wildlife corridor; and o Two future road crossings will be allowed at grade to provide access to residences to the east of the Project site, however, the location and design shall incorporate measures to minimize impacts to wildlife use of the corridor. <p>6. A monitoring program shall be included to ensure the selected/implemented corridor is functioning and providing wildlife movement opportunities. The monitoring program shall assess animal use of the corridor both before and post construction of the Project for a period not to exceed five years after Project completion and will be managed by the City of Highland.</p>	

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No mitigation required.	Less than significant
	The proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	No mitigation required.	Less than significant
Cultural Resources	The proposed Project has the potential to create a substantial adverse change in the significance of an historical resource as defined in Section 15064.5.	<p>MM CR 1: To reduce impacts to historic and archaeological resources (as defined by State <i>CEQA Guidelines</i>, Section 15064.5), prior to any ground disturbing activities within the Project site, a pre-grade meeting with a qualified historic archaeologist shall be held. The historic archaeologist will explain the likelihood for encountering historic and/or unique archaeological resources, what resources may be discovered, and the methods that will be employed if anything is discovered. A qualified historic archaeological monitor shall be present full-time during all initial ground disturbing activities within the sensitive areas identified in the <i>Phase I Cultural Resources Investigation</i>. The remainder of the Project area shall be monitored on a part-time basis as determined by the archaeological monitor and scheduled once a proposed Project is defined. The archaeological monitor shall be empowered to halt any activities impacting potentially significant resources in the vicinity of the resource and work with the Project proponent and the City of Highland in addressing these resources as follows:</p> <ol style="list-style-type: none"> 1. Historic resources shall be documented. Documentation shall consist of: photographs of the resource; preparation of a DPR-523 form (or forms); and filing of the DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist. 2. Unique archaeological resources, as defined by Public Resources Code, Section 21083.2(g), shall be mitigated as set forth in Public Resources Code, Section 21083.2(b). Mitigation may take the form of, in no order of preference: avoidance of the resource, capping or covering the site with a layer of soil prior to any building on the site, testing, or excavation. Excavation shall be limited to those 	Less than significant

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>portions of the unique archaeological resource that would be damaged by the Project. A report documenting the results of the testing or excavation shall be prepared and filed with the City of Highland and the San Bernardino County Museum.</p> <p>3. Nonunique archaeological resources shall be recorded and filed with the City of Highland. No further consideration of nonunique archaeological resources is required per Public Resources Code, Section 21083.2(h).</p> <p>The monitoring program shall be supplemented with daily field notes and a photographic record. The extent, duration, and number of monitors would be dependent upon the proposed Project development schedule(s).</p> <p>In the event evidence of prehistoric and/or historic period Native American cultural resources is identified at any time during Project construction, a Native American monitor of Serrano or Gabrieliño descent shall be incorporated into the Project’s monitoring program.</p>	
		<p>MM CR 2: To mitigate impacts to the Bear Valley Highline Aqueduct:</p> <p>1. A qualified historic archaeological monitor (Monitor) shall be present full-time during all initial ground disturbing activities or soils testing that entails excavation or boring in proximity to the alignment of the Bear Valley Highline Aqueduct as shown on Figure 5.5-1 – USGS Map of the DEIR. If evidence of any portion of the Bear Valley Highline Aqueduct is found, the Monitor shall halt all ground-disturbing activities the area of this resource and the resource shall be documented. Documentation shall consist of: photographs of the resource; preparation of updated DPR-523 form(s); and filing of DPR-523 form (or forms) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist.</p> <p>2. Prior to any earthmoving, excavation, or boring, along the identified portion of the Bear Valley Highline Aqueduct in Section 15 this resource shall be documented. Documentation shall consist of: photographs of the resource; preparation of scaled drawings of the bridge crossing on the access road leading from Newport Avenue to Mill Creek, the undercrossing at the bridge, and at periodic locations along the exposed aqueduct; preparation</p>	Less than significant

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>of updated DPR-523 form(s); and filing of the updated DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center.</p>	
		<p>MM CR 3: To mitigate impacts to the Redlands Canal (Redlands Aqueduct), a qualified historic archaeological monitor (Monitor) shall be present full-time during all initial ground disturbing activities or soils testing that entails excavation or boring in proximity to the Redlands Canal (Redlands Aqueduct) as shown on Figure 5.5-1 – USGS Map of the DEIR. If evidence of any portion of this resource is found, the Monitor shall halt all ground-disturbing activities in the area of this resource and the resource shall be documented. Documentation shall consist of: photographs of the resource; preparation of a DPR-523 form (or forms); and filing of the DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist.</p>	<p>Less than significant with mitigation measures incorporated</p>
	<p>The Project has the potential to cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5.</p>	<p>See MM CR 1 through MM CR 3, above.</p>	<p>Less than significant</p>
	<p>The Project has the potential to directly or indirectly destroy a unique paleontological resource, or site or unique geologic feature.</p>	<p>MM CR 4: To reduce impacts to potential paleontological resources, prior to any earthmoving activities within the Project area, a Paleontological Resources Impact Mitigation Plan (PRIMP) shall be prepared by a qualified paleontologist and approved by the City of Highland. Once the PRIMP is approved by the City of Highland, earthmoving and construction activities may commence under the provision of the PRIMP. The PRIMP shall include the following:</p> <ol style="list-style-type: none"> 1. Pre-grade meeting with a qualified paleontologist. The paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods that will be employed if anything is discovered. 2. A qualified vertebrate paleontological monitor shall be present during earthmoving activities identified in the PRIMP. The monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor shall be empowered to temporarily divert construction equipment away from the immediate area of the discovery. 3. If the qualified paleontologist is not present when fossil remains 	<p>Less than significant</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>are uncovered by earthmoving activities, these activities shall be stopped and a qualified paleontologist shall be called to the site immediately to evaluate the significance of the fossil remains.</p> <p>4. It is recommended that native sediments occasionally be spot-screened through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present.</p> <p>5. If microfossils are encountered, additional sediment samples as determined by the paleontological monitor shall be collected and processed to recover additional fossils.</p> <p>6. If the qualified paleontologist determines that insufficient fossil remains have been found after fifty percent of earth moving activities have been completed, monitoring can be reduced or discontinued.</p> <p>7. Any recovered specimens shall be prepared to the point of identification and permanent preservation, which may include the picking of any washed mass samples to recover small invertebrate and vertebrate fossils, if present, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and the hardeners/stabilizers to fragile specimens.</p> <p>8. Specimens shall be identified to the lowest taxonomic level possible and curated at an institutional repository approved by the City of Highland and the County of San Bernardino.</p> <p>9. Fill dirt shall be free of cultural resources. Fill dirt from off-site resources shall be certified by the provider as being free of cultural or paleontological resources.</p> <p>10. A report shall be prepared that details the methods and results of the monitoring program, even if the results are negative. If applicable, this shall include an appended itemized inventory of identified specimens. This report shall be submitted by the project paleontologist to the City of Highland, prior to the issuance of the final grading inspection for all grading permits in areas where grading activities reached a depth of 4-feet or greater.</p>	

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	<p>The Project has the potential to disturb unknown human remains, including those interred outside of formal cemeteries.</p>	<p>MM CR 5: To mitigate impacts to unknown human remains, if human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to Public Resource Code Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the San Bernardino County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within the period specified by law. Subsequently, the Native American Heritage Commission shall identify the "Most Likely Descendant." The Most Likely Descendant shall then make recommendations and engage in consultation with the County and the property owner concerning the treatment of the remains as provided in Public Resources Code Section 5097.98. Human remains from other ethnic/cultural groups with recognized historical associations to the Project area shall also be subject to consultation between appropriate representatives from that group and City Planning Director.</p>	<p>Less than significant</p>
<p>Geology and Soils</p>	<p>The proposed Project has the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) strong seismic ground shaking; iii) seismic-related ground failure, including liquefaction; iv) landslides.</p>	<p>MM GEO 1: No structure intended for human occupancy, as defined by the State of California, shall be located within a 50-foot structural setback area beginning 50 feet (measured perpendicularly) southwest of the "area of investigation" line and extending north to the Project boundary as shown on Figure 5.6-3 – Structural Setback until and unless a geologic report prepared in accordance with the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code, Division 2, Chapter 7.5, Section 2623) and approved by the City of Highland, defines and delineates any hazard of surface fault rupture sufficiently to prevent the placement of structures for human occupancy across the trace of active faults. The geologic report shall be signed by a Certified Engineering Geologist licensed to practice in the State of California in accordance with the Geologist and Geophysicist Act (California Business and Professions Code, Chapter 12.5).</p> <p>The State of California defines a structure for human occupancy as any structure that is expected to have a human occupancy rate of more than 2,000 person-hours per year. Structures for human occupancy include, but are not limited to, residences, office buildings, retail stores, parking garages, and clubhouses. Other structures, such as, but not limited to, roadways, parks, parking lots, swimming pools, may generally be constructed within the structural setback area. The final</p>	<p>Less than significant</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>determination of which structures may be located within setback areas shall be made by the City of Highland based on future development plans for implementing projects within the Harmony Specific Plan and subsequent implementing project-specific geotechnical investigations as required by mitigation measure MM GEO 2.</p> <p>MM GEO 2: Prior to issuance of a grading permit on any implementing project, an updated geotechnical report reviewing the most current development plan shall be prepared to analyze on-site soil conditions and slope stability and include appropriate measures to provide foundation stability, seismic design, and limit damage from erosion in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. The required geotechnical report shall be signed by a Professional Geologist licensed to practice in the State of California in accordance with the Geologist and Geophysicist Act (California Business and Professions Code, Chapter 12.5) and a Professional Engineer licensed to practice in the State of California in accordance with the Professional Engineers Act (California Business and Professions Code, Chapter 7).</p> <p>The implementing project-specific geotechnical report(s) and any measures recommended therein that provide foundation stability, seismic design, and limit damage from erosion shall be reviewed and approved by the City of Highland. Each implementing project shall incorporate all City-approved measures with regards to foundation stability, seismic design, and limiting damage from erosion.</p>	Less than significant
	The proposed Project is not expected to result in substantial soil erosion or the loss of topsoil. However, MM GEO 2 also requires an updated geotechnical study which will include measures to limit damage from erosion	See MM GEO 2 , above.	Less than significant
	The proposed Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	See MM GEO 2 , above.	Less than significant

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project has the potential to be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial risks to life or property.	See MM GEO 2 , above.	Less than significant
	The proposed Project would not have a sewer system installed. Therefore, the proposed Project will not use septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.	Not mitigation required.	No impact.
Greenhouse Gas Emissions	The proposed Project is not expected to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Not mitigation required.	Less than significant
	The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Not mitigation required.	Less than significant
Hazards and Hazardous Materials	The proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	No mitigation is required.	Less than significant.
	The proposed Project has the potential to 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	MM HAZ 1: Prior to the removal, demolition, or disposal of any structures or debris from the Project site, the structures and debris shall be assessed to determine the presence of asbestos, lead-based paint, or any other hazardous materials are present. Any structure or debris containing asbestos, lead-based paint, or any other hazardous materials shall only be removed by state-licensed, qualified personnel in accordance with applicable rules and regulations. Removal, demolition, and disposal of structures and debris, including but not limited to: earthen dams, under-and aboveground storage tanks, septic systems, water wells, irrigation pipes, smudge pots, shipping containers, construction equipment, automotive tires, wood, metal, concrete, asphalt, furniture, appliance, paint buckets, used oil containers, empty 55-gallon drums, and produce boxes, shall conform to all federal, state, and local agency regulations, specifically with those required by the City of Highland and the Hazardous Materials	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>Division of the San Bernardino County Fire Department.</p> <p>MM HAZ 2: Prior to any ground disturbing activities on the Project site, to the extent not previously prepared and to properly assess and identify the presence of agricultural chemical residues in the surface and subsurface soils within areas of the Project site that had been used for agricultural purposes, a Phase II Environmental Site Assessment (ESA) shall be performed by a registered environmental assessor (REA) and submitted to the City of Highland for review. If the Phase II ESA identifies any soils with chemical residues in excess of regulatory thresholds, a remediation plan shall be prepared and submitted to the City of Highland and any other regulatory agency with oversight for review and approval. No grading permit shall be issued for any portion of the Project site containing soils with chemical residues in excess of regulatory thresholds until that portion of the site has been remediated. If remediation entails removal of the contaminated soils, such soils shall be transported off site to a licensed disposal facility.</p> <p>Because the surficial soils of the southeast portion of the Property identified as being used for the Seven Oaks Dam borrow site appear to have been significantly disturbed, or removed from the Property, concentrations of agricultural chemical residues are not anticipated to be above thresholds of concern in these areas. No further assessment of the former Seven Oaks Dam borrow site is required.</p>	Less than significant.
		<p>MM HAZ 3: If, while performing any Project-related site preparation or excavation, material that is believed to be hazardous waste as defined in Section 25117 of the California Health and Safety Code is discovered, the developer shall contact the City of Highland and the Hazardous Materials Division of the San Bernardino County Fire Department. Work in the area of the discovered material shall be stopped until the material has been tested and the absence of hazardous waste has been confirmed. If hazardous waste is determined to be present, such materials shall be removed and disposed of pursuant to applicable provisions of federal, state, and local law.</p>	
	<p>The proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.</p>	<p>No mitigation is required.</p>	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project has the potential to be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, but is listed on an orphan site, as a result, would it create a significant hazard to the public or the environment.	See MM HAZ 1 through MM HAZ 3 , above.	Less than significant.
	The proposed Project is not 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.	No mitigation is required.	No impact.
	The proposed Project is not within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.	No mitigation is required.	No impact.
	The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	No mitigation is required.	Less than significant.
	The proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands unless implementation of mitigation measures are incorporated.	No mitigation is required.	Less than significant.
Hydrology/Water Quality	The Project would not violate any water quality standards or waste discharge requirements.	No mitigation is required.	Less than significant.
	The Project would not 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	No mitigation is required.	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).		
	The Project has the potential to substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; or substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	<p>MM HYD 1: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes) a detailed Master Drainage Plan (MDP) shall be submitted and approved by the City of Highland. The MDP shall define rates of storm water runoff for pre and post development conditions, identify the size and location of proposed improvements and demonstrate compliance with the latest applicable MS4 permit.</p> <p>MM HYD 2: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes), a detailed hydrology analysis including basin routing will be prepared to verify flows from the development being released to the existing conveyance channels west of Emerald Street are at or below the existing condition discharges. The analysis will include target discharge values for the 2, 5, 10, 25 and 100-year storm events to be conveyed from the project to the downstream natural conveyances.</p>	Less than significant.
	The Project has the potential to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;	See MM HYD 1 and MM HYD 2 , above.	Less than significant.
	The Project would not otherwise substantially degrade water quality.	No mitigation is required.	Less than significant.
	The Project has the potential to 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; or place within a 100-year flood hazard area structures which would impede or redirect flood flows..	<p>MM HYD 3: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes) containing lots which lie within Zone A (100yr flood plain) of the most current FEMA flood zone maps, the applicant shall provide evidence to the City of Highland that a Conditional Letter of Map Revision (CLOMR) has been received from FEMA acknowledging that the proposed improvements remove the subject area from the flood plain.</p> <p>Prior to issuance of a building permit for any lot previously identified in Zone A of the most current FEMA flood zone maps, the applicant</p>	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		shall provide evidence that a Letter of Map Revision (LOMR) has been issued by FEMA.	
	The Project has the potential to 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.	MM HYD 4: Design plans and preliminary design reports (PDRs) shall consider the wastewater treatment plant with respect to the dam inundation zone and incorporate design features to reduce flooding, resulting scour, and other inundation-related liabilities.	Less than significant.
	The Project would not inundation by seiche, tsunami, or mudflow.	No mitigation is required.	Less than significant.
Land Use and Planning	The proposed Project would not physically divide an established community.	No mitigation is required	No impact.
	The proposed Project would not 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.	No mitigation is required	Less than significant.
	The proposed Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.	No mitigation is required	Less than significant.
Mineral Resources	The proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	No mitigation is required	Less than significant.
	The proposed Project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	No mitigation is required	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
Noise	The proposed Project has the potential to result in the 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 and result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project.	MM NOI 1: Prior to approval of final design plans for individual developments within the Harmony Specific Plan, a Final Noise Impact Analysis shall be prepared for each development based on precise grading plans and architectural plans that will allow for detailed noise modeling. The Final Noise Impact Analysis shall be utilized to: (i) confirm the findings of the Noise Impact Analysis included in Appendix K of the Draft EIR; (ii) confirm compliance with City of Highland’s noise standards; and (iii) identify what, if any, noise shielding, attenuation, or mitigation may be required. Potential noise attenuation or mitigation measures include, but are not limited to: walls, fences, alternative pavement surfaces, set-backs, sound insulation for affected residences, changes in screening materials, complete enclosure of noise generating equipment (at the non-residential uses), increased setbacks, reorienting parking lots, or other measures as deemed appropriate by the City. With the appropriate combination of mitigation measures, which will be documented and specified in this study, all potential units will be mitigated below the level of significance.	Less than significant.
	The Project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	No mitigation is required	Less than significant.
	The Project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; However, MM NOI 2 will further reduce construction-related noise.	MM NOI 2: During construction, the following measures shall be implemented to reduce potential construction noise impacts on nearby noise-sensitive receptors: <ul style="list-style-type: none"> • During all site excavation and grading, the Project construction contractor(s) shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers’ standards; • The Project construction contractor(s) shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the Project site; • The Project construction contractor(s) shall locate equipment staging in areas that will create the greatest practical distance between construction-related noise sources and noise-sensitive receptors nearest to the Project site during all Project construction; and 	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		The Project construction contractor(s) shall provide the City of Highland Building Division a name and phone number of a contact person in the event that noise levels become disruptive. The name and phone number shall also be posted on site, informing the public who to contact. The City of Highland Building Division shall monitor compliance.	
	The proposed Project is not 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 mitigation is required.	No impact.
	The proposed Project is not located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.	No mitigation is required.	No impact.
Population and Housing	The proposed Project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	No mitigation is required.	Less than significant.
	The proposed Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	No mitigation is required.	No impact.
	The proposed Project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	No mitigation is required.	No impact.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
Public Services	The proposed Project has the potential to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, but would not substantially result in impacts to police protection, schools, or other public facilities.	<p>MM PS 1: To reduce the risks associated with fire response time, the following services shall be implemented:</p> <ol style="list-style-type: none"> 1. A fully-functional interim fire facility shall be provided at a location that may be different from the final location (subject to the approval of the City), inclusive of the necessary furnishings and equipment such as one ICS Type II fire engine (or functionally equivalent fire engines approved by the City). The interim fire facility shall be constructed and fully functional prior to the issuance of the 1,000th building permit. 2. At the time the interim fire station is opened, the developer would have to reimburse the City for the costs of a Wildland Fire Protection Agreement that the City would enter into with Cal-fire, which includes provision of fire engines, hand crews, bulldozers, fixed and rotor wing aircraft, and overhead personnel to suppress any wildland fire at no additional cost to the City. 3. The final fire station within Planning Area H shall be constructed and fully functional prior to the issuance of the 2,000th Certificate of Occupancy or the end of the 3rd year following the issuance of the 1,000th building permit, whichever occurs first, unless the City approves other functionally-equivalent fire service measures. The fire station size shall be generally equivalent to the size of the City's Station No. 3 located at 9th Street and Sterling Avenue inclusive of necessary furnishings and equipment; and provide one (1) ICS Type I Fire Engine (or functionally equivalent fire engines approved by the City)– including all necessary equipment; and ensure a long-term funding mechanism is in place to support three (3) fire personnel for one of the Fire Engines seven days a week. 	Less than significant.
Recreation	The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	No mitigation is required.	Less than significant.
	The Project does not include recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	No mitigation is required.	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
<p>Transportation/Traffic</p>	<p>The Project has the potential to conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit; or conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.</p>	<p>MM TRANS 1: Prior to issuance of a building permit for implementing development projects, the developer shall participate in the cost of off-site improvements through payment of “fair share” fees. The improvements are set forth in the Traffic Impact Analysis and listed under the column “Total Improvements Required” in Table 5.16-J – Summary of Required Intersection Improvements.</p>	<p>Significant and unavoidable direct and cumulative impact. A Statement of Overriding Considerations required prior to Project approval.</p>
		<p>In addition to the required improvements set forth in the Traffic Impact Analysis and mitigation measures MM TRANS 1, the developer shall also be responsible for the construction or payment of fair share towards the following off-site improvements, as directed by the City of Highland:</p> <ol style="list-style-type: none"> 1. Garnet/SR-38 intersection –ultimate street and traffic improvements. Construct ultimate street and traffic improvements. Minimum lane configuration includes (i) a southbound exclusive right-turn lane, exclusive left-turn lane, through lane, and a right-turn overlap phase, (ii) an eastbound exclusive left-turn lane and a shared through/right lane, and (iii) a west bound through lane, shared through/left lane, exclusive right turn lane, and a right turn overlap phase. Construct improvements west of Garnet Street to transition from two westbound lanes to one westbound lane. 2. Garnet/Newport intersection –improvement and realignment of Garnet Street to curve northeasterly to Newport Road, eliminating the need for northbound traffic on Garnet Street to make a right-angle right turn to go east to the project via Newport Road, and creating the need for northbound traffic on Garnet Street to make 	<p>Significant and unavoidable direct and cumulative impact. A Statement of Overriding Considerations is required prior to Project approval.</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>a right-angle left turn to continue to go north. Construct a new traffic signal and turn pockets at the new location of the Garnet/Newport intersection, or other such alternative acceptable to the City of Highland.</p> <p>3. Unless otherwise constructed by the County of San Bernardino, remove the existing Garnet Street Bridge over Mill Creek, and install a new bridge with adequate width to accommodate 2 travel lanes, bike lanes, sidewalks and barrier rails.</p> <p>4. Removal of the existing pavement and reconstruction and widening of Garnet Street to 40' between Newport Avenue and SR-38 with an adequate roadway structural section.</p> <p>5. Removal of the existing pavement and reconstruct and widen Newport Avenue to 40' between Garnet Street and the project with an adequate roadway structural section.</p> <p>6. Removal of the existing pavement and reconstruction and widening of Greenspot Road to 40' between the "S" curve and the west limit of the Greenspot Road Realignment and Greenspot Road Bridge Project currently under construction by the City of Highland.</p> <p>The developer shall be responsible for payment of fair share towards the following improvements located in the City of Highland:</p> <p>7. Palm Avenue and Greenspot Road – construct a northbound exclusive right-turn lane and add a right-turn overlap phase. The existing shared through/right land will become a through lane.</p> <p>8. SR-210 Eastbound Ramps and Greenspot Road - widen and restripe the north leg of the intersection to accommodate two exclusive southbound left turn lanes and a southbound shared through/right lane. Widen and restripe the west leg of the intersection to accommodate four eastbound thru lanes, one exclusive eastbound right turn lane, and two westbound receiving lanes. Widen and restripe the east leg of the intersection to accommodate two westbound thru lanes, two westbound left turn lanes, three eastbound thru receiving lanes and one eastbound thru receiving lanes.</p> <p>9. SR-210 Westbound Ramps and Greenspot Road - widen and restripe the west leg of the intersection to accommodate three</p>	

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>eastbound thru lanes, one eastbound left turn lane, two westbound receiving left turn lanes, and two westbound thru lanes. Widen and restripe the east leg of the intersection to accommodate two exclusive westbound right turn lanes, four westbound thru lanes, and three westbound receiving thru lanes.</p> <p>10. Boulder Avenue and Greenspot Road - restripe Greenspot Road west of Boulder Avenue to add a third eastbound through lane. Construct improvements on Greenspot Road east of Boulder Avenue to transition from three eastbound lanes to two eastbound lanes. Add a northbound right-turn overlap phase. Construct a third westbound through lane east of Boulder Avenue.</p> <p>11. Church Street and Greenspot Road - add a southbound right-turn overlap phase. Construct an exclusive westbound right-turn lane. The existing shared through/right lane will become a through lane.</p> <p>12. Weaver Street and Greenspot Road - construct a traffic signal.</p> <p>13. Alta Vista and Greenspot Road - construct a traffic signal.</p> <p>And the developer shall also be responsible for payment of fair share towards the following improvements located outside the City of Highland. The City of Highland shall collect the fair share payment amount and contribute such amount towards future construction of improvements by other public agencies.</p> <p>14. Orange Street and SR-38 - construct a second westbound through lane. Construct improvements west of Orange Street to transition from two westbound lanes to one westbound lane. Construct a second northbound through lane. Construct improvements north of SR-38 to transition from two northbound lanes to one northbound lane. Construct a second westbound exclusive left-turn lane.</p> <p>15. University Street/Central Avenue/I-10 Eastbound On-Ramp - construct a traffic signal. Construct an exclusive southbound left-turn lane and two exclusive northbound left-turn lanes. Construct freeway ramp improvements west of the intersection necessary to transition from two lanes to one lane.</p> <p>16. University Street and I-10 Eastbound Off-Ramp - construct a traffic signal.</p>	

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
		<p>17. Bryant Street and SR-38 - construct a traffic signal. Construct an exclusive eastbound right-turn lane. The existing shared through/right lane will become a through lane.</p> <p>18. Bryant Street and Oak Glen Road - construct an exclusive southbound right-turn lane and add a right-turn overlap phase. The existing shared through/right lane will become a through lane.</p> <p>19. Sand Canyon Road, 14th Street, and Yucaipa Boulevard - convert northbound/southbound split phase to protected phase. Construct an exclusive northbound left-turn lane and restripe the northbound shared left/through lane to a through lane. Restripe the southbound shared left/through lane to a through lane. Construct an exclusive westbound right-turn lane and add a right-turn overlap phase. The existing shared through/right lane will become a through lane.</p> <p>20. I-10 Eastbound Eureka Street Off-Ramp – construct a second off-ramp lane from the ramp diverge area.</p> <p>21. I-10 Eastbound University Street Off-Ramp – construct a second off-ramp lane from the ramp diverge area.</p> <p>22. I-10 Westbound Live Oak Canyon Road On-Ramp – construct a second on-ramp lane up to the ramp merge area.</p> <p>Furthermore, the City of Highland will require the Project to pay development impact fees to mitigate Project-related traffic at locations within the City not analyzed specifically in the Project-specific Traffic Impact Analysis, but are analyzed in the City of Highland’s development impact fee program. The amount of the development impact fee will be reduced based on the City’s established development impact fee credit policy.</p>	
	<p>The proposed Project will not 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.</p>	<p>No mitigation is required.</p>	<p>No Impact.</p>
	<p>The Project has the potential to substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</p>	<p>MM TRANS 2: Prior to issuance of grading permits for implementing development projects, the developer or contractor shall include truck routes in the construction specifications that require trucks access to the Project site through the City of Highland.</p>	<p>Less than significant.</p>

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project will not result in inadequate emergency access.	No mitigation is required.	Less than significant.
	The proposed Project will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	No mitigation is required.	Less than significant.
Utilities and Service Systems	The proposed Project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	No mitigation is required.	No Impact.
	The proposed Project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	No mitigation is required.	Less than significant.
	The proposed Project will not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	No mitigation is required.	Less than significant.
	The proposed Project will have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	No mitigation is required.	Less than significant.
	The proposed Project will not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	No mitigation is required.	Less than significant.
	The proposed Project will not be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.	No mitigation is required.	Less than significant.

Impact Category	Impact	Mitigation Measure	Impact After Mitigation
	The proposed Project will comply with federal, state, and local statutes and regulations related to solid waste.	No mitigation is required.	No impact.
	The proposed Project will not increase demand for other utility and service systems, the construction of which could cause significant environmental effects.	No mitigation is required.	Less than significant.

1.7 Summary of Project Alternatives

State *CEQA Guidelines* Section 15126.6 identifies the parameters within which consideration and discussion of alternatives to a proposed project should occur. As stated in this section of the guidelines, alternatives must focus on those that are reasonably feasible and which attain most of the basic objectives of a project. Each alternative must be capable of avoiding or substantially lessening any significant effects of the proposed project. The rationale for selecting the alternatives to be evaluated and a discussion of the “no project” alternative are also required, pursuant to Section 15126.6.

This DEIR evaluates 1) a No Project Alternative and 2) Existing Land Use Designation, 3) Existing Entitlements / Sunrise Ranch, 4) Smaller Project; and 5) Eastern Mitigation Bank.

Table 1-C – Comparison of Alternatives Matrix, gives a summary of all Project alternatives considered in detail in the DEIR and identifies the areas of potential environmental effects per CEQA and ranks each alternative as better than, the same or less than the proposed Project with respect to each area.

Table 1-C – Comparison of Alternatives Matrix

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Aesthetics	The Project would not have a substantial adverse effect on the scenic vista (with implementation of the identified mitigation measure); substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; substantially degrade the existing visual character or quality of the site and its surroundings; or create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Less than significant impacts with mitigation.	Less – This Alternative would retain the Project site’s existing conditions. No impacts would occur.	Same – This Alternative would result in the development of the Project site in accordance the existing General Plan Land Use designation. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.	Same – This Alternative would result in the development, albeit a lesser area of the Harmony Project site, in accordance with the approved Sunrise Ranch project and include mitigation measures. Thus, impacts would be the same as the proposed Project. Impacts would be less than significant with mitigation.	Same – This Alternative would result in the development of the western portion of the Project site. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.	Same – This Alternative would result in the development of the western portion of the Project site. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.
Agricultural and Forestry Resources	The Project will not result in a significant impact regarding the conversion of Farmland to non-agricultural use; and involving other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. The Project will not conflict with existing zoning for agricultural use, a Williamson Act contract; existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production; or result in the loss of forest land or conversion of forest land to non-forest use. Impacts would be less than significant with mitigation.	Same – No loss of existing agricultural uses or Farmland. No impacts would occur.	Same – Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.
Air Quality	The Project would violate air quality standards or contribute substantially to an existing or projected air quality violation; would 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); but would not conflict an air quality plan; or expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting substantial number of people. Significant impacts after mitigation.	Less – Impacts on air quality from construction and operation would be avoided due to the lack of development. No impacts would occur.	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after mitigation.	Same – Air quality impacts from the short-term construction and long-term emissions would exceed SCAQMD thresholds. Significant impacts after mitigation.	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after mitigation.	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after mitigation.
Biological Resources	With implementation of the identified mitigation measures	Less –No loss of land to	Greater –This	Greater – This	Less – designating the	Less – designating the

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	<p>the Project will not have a substantial adverse effect on sensitive species or their habitat, on riparian or other sensitive natural community, on federally protected wetlands. With implementation of the identified mitigation measures the Project will not interfere substantially with a wildlife corridor. The Project will not conflict with any local policies or ordinance protecting biological resources, or with provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. With implementation of identified mitigation measures potential impacts to sensitive species and their habitat are reduced to less than significant levels.</p>	<p>development and all open space is retained thus, no loss of foraging habitat, no encroachment into SBKR Critical Habitat. No impacts would occur.</p>	<p>alternative would not preserve 535 acres of natural open space which provides suitable habitat for sensitive species and 72 acres of manufactured open space which provide for wildlife movement corridor opportunities through the Project site. Although less Project residents would be expected to access sensitive areas, trespassing by non-Project residents would not change.</p>	<p>alternative would not include the preservation of almost half of the site for open space and does not incorporate mitigation capable of reducing impacts to less than significant levels.</p>	<p>eastern portion of the Project as Natural Open Space would avoid any conflict with the existing Crafton Hills Linkage wildlife corridor. This alternative would also minimize impacts to jurisdictional features, disturbed RSS and RAFSS and minimize encroachment into SBKR critical habitat. Impacts would be less than significant with implementation of similar mitigation measures to the Project, albeit to a lesser degree due to a reduced development footprint.</p>	<p>eastern portion of the Project as a Mitigation Bank would avoid any conflict with the existing Crafton Hills Linkage wildlife corridor. This alternative would also minimize impacts to jurisdictional features, disturbed RSS and RAFSS and minimize encroachment into SBKR critical habitat. In addition, overtime the biological value of the eastern portion of the site would improve as development projects pay to restore on-site habitat on a project by project and therefore incremental basis. Impacts would be less than significant, with implementation of similar mitigation measures as the Project, albeit to a lesser degree due to a reduced development footprint.</p>
Cultural Resources	<p>With implementation of the identified mitigation measures for each threshold, the Project would not create a substantial adverse change in the significance of a historical resource as defined in Section 15064.5; cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5; directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or disturb any human remains, including those interred outside of formal cemeteries. Less than significant impacts with mitigation.</p>	<p>Less – This Alternative would not involve additional or deeper grading of the Project site and would have no impact upon unknown and potentially buried cultural resources. No impacts would occur.</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project. Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
				implemented. Impacts would be less than significant, but would likely require mitigation measures to avoid potential impacts.	implemented. Impacts would be less than significant, but would likely require mitigation measures to avoid potential impacts.	implemented. Impacts would be less than significant, but would likely require mitigation measures to avoid potential impacts.
Geology and Soils	With implementation of the identified mitigation measures for each threshold, the Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: fault rapture, strong seismic ground shaking, seismic-related ground failure, landslides; result in substantial soils erosion or loss of topsoil; be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; be located on expansive soil, creating substantial risks to life or property. The Project would have no impact regarding 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. Less than significant impacts with mitigation.	Less – This Alternative would not involve the development on the site so no structures, grading or soils disturbance. No impacts would occur.	Same – This Alternative would require similar geotechnical design considerations as the existing conditions are the same and the proposed land use is similar. Impacts would be less than significant, and could require similar mitigation measures as the Project.	Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented. Impacts would be less than significant with mitigation.	Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented. Impacts would be less than significant with mitigation.	Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented. Impacts would be less than significant with mitigation.
Greenhouse Gas Emissions	The Project would not generate GHG emissions, either directly or indirectly, that may have a cumulatively significant impact on the environment, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Less than significant impacts.	Less – GHG emissions would remain at existing levels; new construction and operational emissions on the site would be avoided. No impacts would occur.	Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions. Impacts would potentially be significant.	Same – Although GHG emissions were not evaluated in the Sunrise Ranch EIR, it is reasonable to assume that similar amounts of GHG emission would be generated by development of this alternative based on the total amount of dwelling units and non-residential uses proposed. Impacts could potentially be less than significant with mitigation.	Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions. Impacts would potentially be significant.	Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions. Impacts would potentially be significant.

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Hazards and Hazardous Materials	<p>The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; result in a safety hazard for people residing or working in the project area near an airport; impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</p> <p>With implementation of the identified mitigation measures, the Project would not 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; result in the creation of a significant hazard to the public or the environment due to location; expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</p> <p>Less than significant impacts with mitigation.</p>	<p>Less – Under this Alternative the Project site would remain vacant and idle. It would not 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. No impacts would occur.</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar. Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>	<p>Same – The existing conditions would remain as the Project site is largely similar and the proposed land use under this Alternative is also similar to the Project’s proposal. Moreover, current regulatory conditions and mitigation measures would apply if implemented. Impacts would be less than significant with mitigation.</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar. Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar. Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>
Hydrology / Water Quality	<p>The Project would not violate any water quality standards or waste discharge requirements; substantially deplete groundwater supplies; otherwise substantially degrade water quality; 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.</p> <p>With implementation of the identified mitigation measures for each threshold, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; 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; inundation by seiche, tsunami, or mudflow; or place within a 100-year flood hazard area structures which</p>	<p>Greater – The existing condition regarding hydrology and water quality would continue on site; however, the Project’s beneficial design and BMPs would not be realized, which may contribute to greater long-term impacts than the proposed Project. Impacts would be less than significant.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements. Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project. Impacts would be less than significant and could require similar mitigation measures as</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements, as required in the current regulatory environment. Adherence to these regulatory requirements, and likely additional mitigation measures similar to the Project’s that also would be required if implemented to date, would reduce potential impacts to less than significant similar to the proposed Project.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements. Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project. Impacts would be less than significant and could require similar mitigation measures as</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements. Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project. Impacts would be less than significant and could require similar mitigation measures as</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	would impede or redirect flood flows; Less than significant impacts with mitigation.		the Project.	Impacts would be less than significant with mitigation.	the Project.	the Project.
Land Use and Planning	The Project would not physically divide an established community; conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or conflict with any applicable habitat conservation plan or natural community conservation plan. Impacts would be less than significant.	Greater – The site would remain vacant and underutilized and thus, not meet the goals and policies of the City General Plan. Impacts would be less than significant.	Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning. Impacts would be less than significant.	Greater – This Alternative is not consistent with the General Plan land use designation for the site, whereas the Project is consistent. Impacts would be significant and unavoidable.	Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning. Impacts would be less than significant.	Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning. Impacts would be less than significant.
Mineral Resources	The Project would not 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; or 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. Impacts would be less than significant.	Same – This existing conditions at the site involve the diminished to nullified potential for the area to be utilized for mineral resources due to previous extraction activity during construction of the Seven Oaks Dam. No impacts would occur.	Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam. Impacts would be less than significant.	Same – This Alternative would include largely the same Project site as Harmony, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam. Impacts would be less than significant.	Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam. Impacts would be less than significant.	Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam. Impacts would be less than significant.
Noise	The Project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; 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; 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. With implementation of the identified mitigation measures for each threshold, the Project would not result in exposure of persons to or generation of noise levels in excess of standards	Less – This Alternative would not involve construction of the Project site and would not increase traffic on area roadways. No impacts would occur.	Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise. Impacts are would be less than significant, but could require similar mitigation measures as	Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise. Impacts are would be less than significant, but could require similar mitigation measures as	Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise. Impacts are would be less than significant, but could require similar mitigation measures as	Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise. Impacts are would be less than significant, but could require similar mitigation measures as

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	<p>established in the local general plan or noise ordinance, or applicable standards of other agencies; a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Less than significant impacts with mitigation.</p>		the Project.	the Project.	the Project.	the Project.
Population / Housing	<p>The Project would not substantially induce 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> <p>The Project would not displace substantial numbers of existing housing; or displace substantial numbers of people.</p> <p>Impacts would be less than significant.</p>	<p>Greater – This Alternative would not result in any population growth since no development would occur. Because growth was accounted for in both the General Plan and larger Regional Plans, the goals of these plans may no longer be met and greater impacts may result.</p>	<p>Same – This Alternative would directly induce population growth, but the resulting growth would not exceed the General Plan’s estimations for the City. Impacts would be less than significant.</p>	<p>Same – The Sunrise Ranch would develop fewer residential dwelling units and generate less residents than the Project, which would lessen, but would be similar to the growth projections used in the SCAG RTP/SCS. Impacts would be less than significant.</p>	<p>Greater – This Alternative would develop fewer residential dwelling units and generate less residents than the Project, which may make it more difficult to achieve the necessary reductions contained in the SCAG RTP/SCS. Impacts would be potentially significant.</p>	<p>Greater – This Alternative would develop fewer residential dwelling units and generate less residents than the Project, which may make it more difficult to achieve the necessary reductions contained in the SCAG RTP/SCS. Impacts would be potentially significant.</p>
Public Services	<p>The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection (with implementation of the identified mitigation measure); Police protection; Schools; Parks; and/or Other public facilities. Less than significant impacts with mitigation.</p>	<p>Less – This Alternative not result in increased demand for fire or police protection services, school services, or library services. No impacts would occur.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit at a much lesser intensity, on public services than the Project. Impacts would be less than significant.</p>	<p>Same – The Alternative would increase demand for fire and police protection and library services, which would be offset through development impact fees and likely require the same mitigation measure as the Project. Impacts would be less than significant with mitigation.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit less intense, on public services than the Project. Impacts would be less than significant.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit less intense, on public services than the Project. Impacts would be less than significant.</p>
Recreation	<p>The Project would not result in the increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or to recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Less than significant impacts</p>	<p>Greater – The Project’s parks and recreational facilities would not be built, which would improve the parkland-to-resident service ratios in the city. Impacts would be less than significant.</p>	<p>Greater – This Alternative does not propose the development of parks and recreational facilities, which further exasperates the parkland-to-resident service level ratios in the City.</p>	<p>Greater – The Alternative would develop park and recreational facilities on site to serve the increased demand of the development; however it would be to a lesser degree than the Project.</p>	<p>Same – This Alternative would generate less park land requirements due to the reduction in dwelling units, but would still include private recreation areas in addition to increased Natural Open Space. Impacts would be less than significant.</p>	<p>Same – This Alternative would generate less park land requirements due to the reduction in dwelling units, but would still include private recreation areas. Impacts would be less than significant.</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Transportation / Traffic	<p>The Project would not result in a change in air traffic patterns; substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); result in inadequate emergency access; or conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.</p> <p>With implementation of the identified mitigation measures, the Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit; conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;</p> <p>Less than significant Project-specific impacts with mitigation; significant cumulative impacts due to uncertain construction timing.</p>	<p>Less – No generation of new daily trips. No impacts would occur.</p>	<p>Impacts would be significant.</p> <p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale. Project level impacts would be less than significant, but could require similar mitigation measures as the Project; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>Impacts would be less than significant.</p> <p>Less – This Alternative would generate less vehicle trips, thus resulting in lessened impacts to levels of service on area-wide streets. Newer/revised mitigation measures would likely be required of this Alternative to address existing and projected roadway and freeway conditions. Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>than significant.</p> <p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale. Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale. Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>
Utilities / Service Systems	<p>The Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; result in insufficient water supplies available to serve the project from existing entitlements and resources; result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments; be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs; comply with federal, state, and local statutes and regulations related to solid waste; 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; increase demand for other utility and service systems, the construction of which could cause significant environmental effects; or require or result in the construction of new water or</p>	<p>Less – This Alternative would not increase demand for water or sewer service, electricity or cabling infrastructure, and would not result in increases to solid waste amounts. No impacts would occur.</p>	<p>Less – This Alternative would still require the extension of utility and service system infrastructure to the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project’s. Impacts would be less than significant.</p>	<p>Less – This Alternative would require less potable water and electricity, and generate less sewer wastewater and solid waste than the proposed Project. Less than significant impacts.</p>	<p>Less – This Alternative would still require the extension of utility and service system infrastructure in the west end of the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project’s. Impacts would be less than significant.</p>	<p>Less – This Alternative would still require the extension of utility and service system infrastructure in the west end of the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project’s. Impacts would be less than significant.</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Less than significant impacts.					
Environmentally Superior to Proposed Project?	Not applicable	Yes	No	No	No	No
Meets Project Objectives?	Yes	No – With no development proposed, this Alternative does not meet any of the objectives of the proposed Project.	No – This Alternative does not meet the majority of Project objectives because it only contemplates one housing type and density. No additional public facilities would be constructed on-site and the recreational opportunities would not be realized.	No – This Alternative does not meet the majority of Project objectives; it is an outdated development pattern that does not provide the mix of housing types and amenities offered by the Project nor does it protect natural open space as to emphasize the natural setting.	No – This Alternative does not meet the majority of Project objectives, because it does not provide the mix of housing types and amenities offered by the Project and would generate fewer funds to the County of Orange due to less revenue-generating uses.	No – This Alternative does not meet the majority of Project objectives, because it does not provide the mix of housing types and amenities offered by the Project and would likely restrict public access in the mitigation bank area for trail use.

Section 2 – Introduction

2.1 Purpose and Scope

The purpose of this Draft EIR (DEIR) is to evaluate potential environmental impacts resulting from the implementation of the Harmony Specific Plan, a master-planned residential community on approximately 1,657 acres located within the eastern portion of the City of Highland (hereinafter referred to as the Harmony Specific Plan or Project), as further described in Section 3 of this DEIR.

2.2 Authorization

This DEIR has been prepared by the City of Highland (City) as “lead agency” in accordance with the Guidelines for the Implementation of the California Environmental Quality Act (State *CEQA Guidelines*), (Sections 15000–15387 of the California Code of Regulations), and the City’s *CEQA Guidelines*. The proposed Harmony Specific Plan is a “project,” as defined by Section 15378 of the State *CEQA Guidelines*, which state that an EIR must be prepared for any project that may have a significant impact on the environment. The City has determined that a full scope EIR is required for the Project; therefore, pursuant to State CEQA Guidelines Section 15060(d) an Initial Study has not been prepared.

2.3 Lead and Responsible Agency

CEQA defines a “lead agency” as the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment. Other agencies, e.g., the California Department of Transportation (Caltrans), the South Coast Air Quality Management District (SCAQMD), or the Regional Water Quality Control Board (RWQCB), which also have some authority or responsibility to issue permits for project implementation, are designated as “responsible agencies.” Both the lead agency and responsible agencies must consider the information contained in the EIR prior to acting upon or approving a project. The City is the lead agency for the Project. The City’s address is:

City of Highland Planning Division
27215 Base Line
Highland, CA 92346
Telephone Number: 909-864-8732 x 204
Contact: Kim Stater, City Planner

The responsible agencies for the Project include:

- **Regional Water Quality Control Board:** For issuance of a Notice of Intent prior to construction operations related to National Pollutant Discharge Elimination System (NPDES) Construction Permit; Issuance of a water quality certification pursuant to Section 401 of the Clean Water Act in connection with issuance of a Section 404 Clean Water Act permit.
- **California Department of Fish and Wildlife:** Issuance of agreements under Section 1601-1602 of the Fish and Game Code related to streambed alterations.
- **U.S. Army Corps of Engineers:** Issuance of Section 404 permits under the Clean Water Act.

- **Department of Water Resources:** Issuance of Encroachment Permit if Project impacts DWR’s right-of-way (ROW) for the California Aqueduct.
- **East Valley Water District:** Approval and construction of infrastructure (water and sewer) improvements.
- **San Bernardino County:** Issuance of encroachment permits and/or Right-of-Way acquisition in the unincorporated areas of San Bernardino County.
- **U.S. Fish and Wildlife Services:** Consultation under Section 7 of the Federal Endangered Species Act (initiated by U.S. Army Corps of Engineers with regard to the issuance of a Section 404 permit) for potential adverse affects to federally listed species or critical habitat.

2.4 Project Applicant

The Project Applicants are:

LCD Greenspot, LLC
1156 N. Mountain Avenue
P.O. Box 670
Upland, CA 91785

County of Orange
445 Civic Center Drive West, Bldg. 12
Santa Ana, CA 92701

2.5 Compliance with CEQA

The basic purposes of CEQA (State *CEQA Guidelines*, Section 15002) are to:

1. inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
2. identify ways that environmental damage can be avoided or significantly reduced;
3. prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
4. disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

2.5.1 Environmental Procedures

The EIR process typically consists of three parts—the Notice of Preparation (NOP), Draft EIR, and Final EIR. The City has determined that a full scope EIR is required for the Project; therefore, pursuant to State CEQA Guidelines Section 15060(d) the City proceeded directly to preparation of the NOP. The NOP was distributed to the State Clearinghouse, responsible agencies, and other interested parties, on July 20, 2012. Pursuant to Section 15082 of the State *CEQA Guidelines*, recipients of the NOP were requested to

provide responses within 30 days after their receipt of the NOP. The NOP included a reference to the availability of the Specific Plan on the City's website. However, due to technical reasons, the Specific Plan was not posted and hence not available from July 20, 2012. Thereafter, the Specific Plan was posted on the City's website as of July 25, 2012.

An Errata to the NOP was posted by the San Bernardino County Clerk on July 31, 2012 extending the public review until August 23, 2012. A scoping meeting was held on August 16, 2012 at City of Highland – City Hall.

Copies of the NOP and Errata NOP are located in Appendix A. Copies of comments regarding the NOP, received by the City, are also included in Appendix A.

An EIR is an informational document intended to inform decision makers and the general public of potentially significant environmental impacts of a project. An EIR also identifies possible ways to minimize these potentially significant impacts (referred to as mitigation) and describes alternatives to a project that may also reduce its significant impacts. Having the authority to take action on the proposed Project, the City Planning Commission and City Council will consider the information in this EIR in their evaluations of the proposal. The findings and conclusions presented in the EIR regarding environmental impacts do not control the City's discretion to approve, deny, or modify the Project, but instead are presented as information to aid the decision-making process.

As set forth in Section 15021 of the State *CEQA Guidelines*, as lead agency, the City has the duty to avoid or minimize environmental damage where feasible. Furthermore, Section 15021(d) of the State *CEQA Guidelines* states that, "CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors, and in particular the goal of providing a decent home and satisfying living environment for every Californian." Other public agencies (i.e., Responsible and Trustee Agencies) that may use this DEIR in their decision-making or permit processes, will consider the information in this DEIR along with other information that may be presented during the CEQA process. In accordance with CEQA, the public agencies will be required to make findings for each significant environmental impact of the proposed Project. If the agency determines that significant impacts cannot be reduced to less than significant, the Lead Agency must assess whether the benefits of the proposed Project outweigh unmitigated significant environmental effects, and the Agency will be required to adopt a statement of overriding considerations stating the reasons supporting their action notwithstanding the proposed Project's significant environmental effects.

2.5.2 Potentially Significant Environmental Effects

CEQA requires consideration and discussion of significant environmental effects. Sections 15126 of the State *CEQA Guidelines* state that, "All phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation."

Section 5 of the DEIR will address each environmental effect. Each effect is organized into an issue area; those that will be analyzed (and the section of the DEIR in which the analysis is contained) are listed below:

- Aesthetics (Section 5.1)
- Agriculture and Forestry Resources (Section 5.2)
- Air Quality (Section 5.3)
- Biological Resources (Section 5.4)
- Cultural Resources (Section 5.5)
- Geology/Soils (section 5.6)
- Greenhouse Gas Emissions (Section 5.7)
- Hazards and Hazardous Materials (Section 5.8)
- Hydrology/Water Quality (Section 5.9)
- Land Use/Planning (Section 5.10)
- Mineral Resources (Section 5.11)
- Noise (Section 5.12)
- Population/Housing (Section 5.13)
- Public Services (Section 5.14)
- Recreation (Section 5.15)
- Transportation/Traffic (Section 5.16)
- Utilities/Service Systems (Section 5.17)

2.5.3 Format

This DEIR has been organized in several sections as follows:

Table of Contents to assist readers in locating the analysis of different subjects and issues as required by Section 15122 of the State *CEQA Guidelines*.

Section 1 – Executive Summary covers the summary requirements of CEQA as required by Section 15123 of the State *CEQA Guidelines* and includes: the proposed project location, a brief project description, a matrix containing a summary of environmental impacts and mitigation measures, project objectives, approvals related to the proposed project, areas of controversy, and a brief description of the project alternatives.

Section 2 – Introduction describes the scope and purpose of the DEIR, identifies the project applicant and lead agency, provides a brief summary of the CEQA process to date, summarizes and identifies the documents incorporated by reference in the DEIR.

Section 3 – Project Description contains the information required by Section 15124 of the State *CEQA Guidelines* including: a detailed description of the proposed project, the project objectives, a general

description of the project's environmental setting, the approvals needed to implement the project, and a list of agencies expected to use the DEIR.

Section 4 – Effects Found Not Significant identifies those environmental effects found not to be significant during preparation of the EIR.

Section 5 – Environmental Impact Analysis satisfies the requirements of Sections 15125, 15126, 15126.2, and 15126.4 of the State *CEQA Guidelines* by including an analysis of each environmental issue area determined to have potentially significant impacts. For each issue area analyzed, this section includes a discussion of the Project setting which forms the baseline against which each issue area is analyzed, defines the related regulations affecting the proposed project, identifies the thresholds used to determine significance, describes any project design features that would reduce impacts, analyzes the proposed project's impacts, provides a description of the mitigation measures used to reduce or lessen potential impacts, and discusses the project's impacts after implementation of mitigation.

Section 6 – Consistency with Regional Plans presents an analysis of the project's consistency with applicable regional plans.

Section 7 – Other CEQA Topics includes the project's cumulative impact analysis, unavoidable adverse impacts of the proposed project, and growth inducing impact discussion.

Section 8 – Alternatives satisfies the requirements of Section 15126.6 of the State *CEQA Guidelines* by identifying and discussing the no project alternative in addition to alternatives to the proposed project that lessen the severity of significant impacts and identifying the environmentally superior alternative.

Section 9 – References includes a listing of all reference materials, the organizations and persons contacted in preparing the DEIR, and a list of preparers as required by Section 15129 of the State *CEQA Guidelines*.

2.6 Documents Incorporated by Reference

Section 15150 of the State *CEQA Guidelines* permits and encourages an environmental document to incorporate, by reference, other documents that provide relevant data. The documents summarized below are incorporated by reference, and the pertinent material is summarized throughout this DEIR, where that information is relevant to the analysis of potential impacts of the Project. All documents incorporated by reference are available for review at, or can be obtained through, the City of Highland Planning Department.

- *City of Highland General Plan*, March 2006
- *City of Highland, General Plan and Development Code Update Environmental Impact Report (SCH No. 2005021046)*, September 2005

2.7 Project Technical Studies and Supporting Analysis

- *Notice of Preparation and Comments Received in Response to the Notice of Preparation. (Appendix A)*

- *California Agriculture Land Evaluation and Site Assessment, Albert A. Webb Associates, January 2014. (Appendix B)*
- *Air Quality Technical Report, ENVIRON International Corporation, January 13, 2014. (Appendix C)*
- *Habitat Assessment, RBF Consulting, March 2014. (Appendix D.1)*
- *Greenspot Jurisdictional Delineation Report, VCS Environmental., October 2012. (Appendix D.2)*
- *Phase I Cultural Resources Investigation and Preliminary Assessment of Impacts on Cultural Resources, McKENNA et al., October 31, 2011. (Appendix E)*
- *Revised Preliminary Geotechnical Investigation Report, Converse Consultants, September 27, 2011. (Appendix F.1)*
- *Revised Fault Investigation Report, Converse Consultants, November 21, 2011. (Appendix F.2)*
- *Climate Change Technical Report (Greenhouse Gas Emissions), ENVIRON International Corporation, December 20, 2013. (Appendix G.1)*
- *Project Consistency with SCAG RTP/SCS's FEIR Appendix G, List of measures that Could Reduce Impacts from Planning, Development, and Transportation. (Appendix G.2)*
- *Summary Memorandum of Findings, recommendations and Outstanding Issues Related to Conceptual Fire Protection Planning for the Greenspot Development, Hunt Research Corporation, September 7, 2011. (Appendix H.1)*
- *Phase 1 Environmental Site Assessment Report, Converse Consultants, December 14, 2011. (Appendix H.2)*
- *Conceptual Fire Protection Plan for Harmony, Hunt Research Corporation, January 2014. (Appendix H.3)*
- *Hydrology and Sedimentation Technical Study, RBF Consulting, December 2013. (Appendix I.1)*
- *Harmony Specific Plan, Domestic Water System Technical Study, RBF Consulting, November 5, 2013. (Appendix I.2)*
- *Harmony Water Supply Assessment, East Valley Water District, September 2013. (Appendix I.3)*
- *Harmony Specific Plan, Sewer Analysis, RBF Consulting, January 8, 2014. (Appendix I.4)*
- *County of San Bernardino Mining Reclamation Plan (93M-02), April 8, 2003. (Appendix J.1)*
- *Evaluation of Mineral Resources, Converse Consultants, November 30, 2011. (Appendix J.2)*

- *Acoustical Impact Study, LSA Associates, March, 2014. (Appendix K)*
- *Assessment of School Issues for Project Review for the City of Highland, Jeanette C. Justus Associates, August 5, 2011. (Appendix L)*
- *Traffic Impact Analysis, LSA Associates, March 17, 2014. (Appendix M)*
- *Dry Utility Report, Joanna Futerman Inc., June 2011. (Appendix N)*
- *Highland General Plan Policy Consistency. (Appendix O)*

Section 3 – Project Description

This Draft EIR (DEIR) analyzes the potential environmental effects of the construction and implementation of the proposed Harmony Specific Plan including all on- and off-site supporting improvements, and associated discretionary actions, including but not limited to adoption of the Specific Plan, Development Agreement, and Tentative Tract Maps between the City and the applicant, all of which are herein collectively referred to as the “Project.”

3.1 Project Location and Setting

3.1.1 Project Location

The Harmony Specific Plan (also referred to throughout this document as either “Harmony” or “Specific Plan”) is a comprehensive plan for the development of a master planned community in the eastern portion of the City of Highland. The site is located on approximately 1,657 acres within the jurisdiction of the City of Highland, in San Bernardino County, California as shown in **Figure 3-1 – Regional Map**. The Project site is located approximately six miles east of the State Route 210 (SR-210) freeway, 4.5 miles north of the Interstate 10 (I-10) freeway and just north of SR-38.

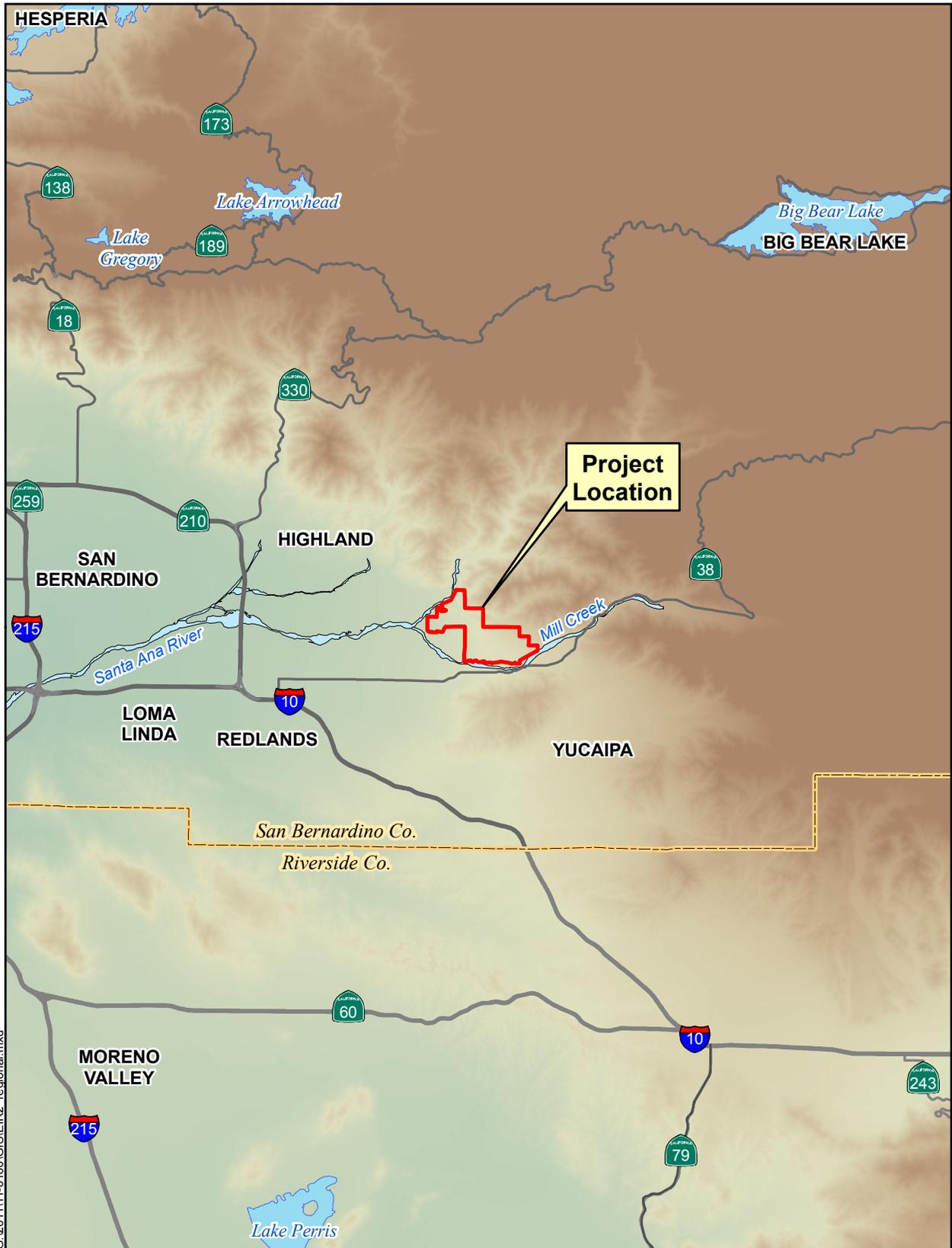
As shown in **Figure 3-2 – Location Map**, the Project site is located along the base of the San Bernardino Mountains. Immediately to the north of the Project site is the San Bernardino National Forest. Mill Creek generally forms the southern and southeastern boundary of the Project site. Emerald Avenue and a portion of Tres Lagos Street are the boundaries for the southwestern portion of the Project site, and the Santa Ana River forms the boundary to the west and northwest.

3.1.2 Project Background

On December 14, 1989, the U.S. Army Corps of Engineers and the Orange, Riverside, and San Bernardino County Flood Control Districts (Local Sponsors) entered into a Local Cooperation Agreement (LCA) defining the responsibility and cost-sharing for each feature of the “Santa Ana River Mainstem Project.” The Santa Ana River Mainstem Project is designed to provide flood protection to the growing urban communities in Orange, Riverside and San Bernardino Counties. The system covers over 75 miles from the headwater of the Santa Ana River east of the City of San Bernardino to the mouth of the river at the Pacific Ocean between the cities of Newport Beach and Huntington Beach.

In 1993, the Local Sponsors acquired the 1,657 acre Project site in order to provide impervious materials for the construction of the Seven Oaks Dam. At that time the land was entitled as two separate residential developments.

To simplify acquisition and disposition, title was held by the San Bernardino County Flood Control District during construction, and transferred to the Orange County Flood Control District upon completion of the Dam. Along with ownership of the property came majority ownership in the Tres Lagos Mutual Water Company, a small water company with a well, one storage tank, and water lines on the property. The minority ownership of Tres Lagos consists of five property owners to the south of the property who receive water from the well. The Orange County Flood Control District also maintains sole ownership of the Sunrise Ranch Mutual Water Company.

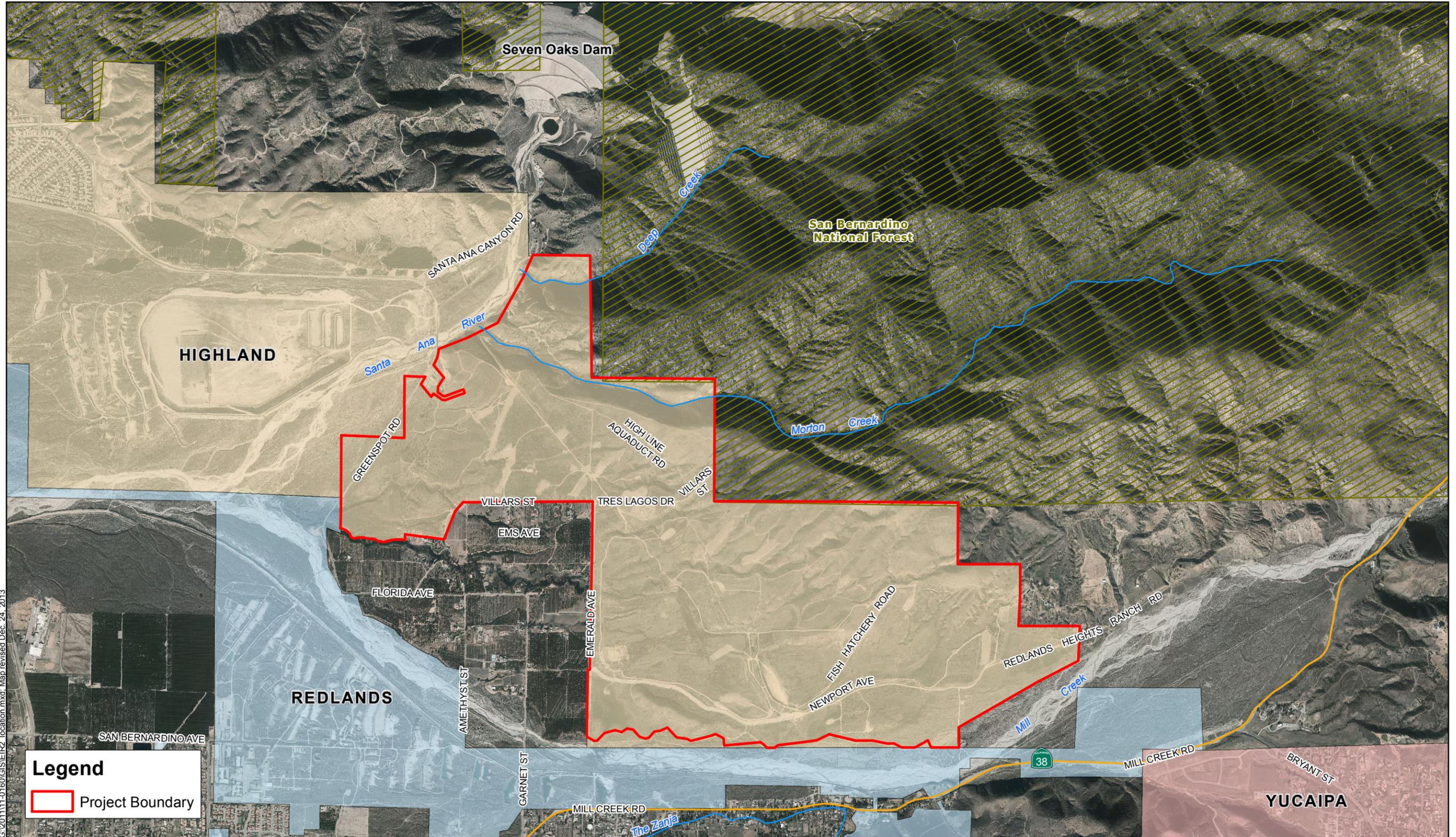


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Source: San Bernardino County ISD, 2012;
USGS 30m DEM

Figure 3-1 – Regional Map
Harmony Specific Plan Draft EIR





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Source: San Bernardino County ISD, 2013
Eagle Aerial, 2012

Figure 3-2 – Location Map
Harmony Specific Plan Draft EIR

Construction of the 550-foot-high Seven Oaks Dam began in May of 1994 and was completed in November of 1999. Approximately six million cubic yards of material was excavated from the Project site and conveyed to the construction site. The excavated area of the Project site is known as the “borrow site.” Upon completion of the dam the borrow site property was transferred to the County of Orange, and in 2000 the City of Highland annexed the entire 1,657 acre Project site.

3.1.3 Project Site -- Existing Conditions

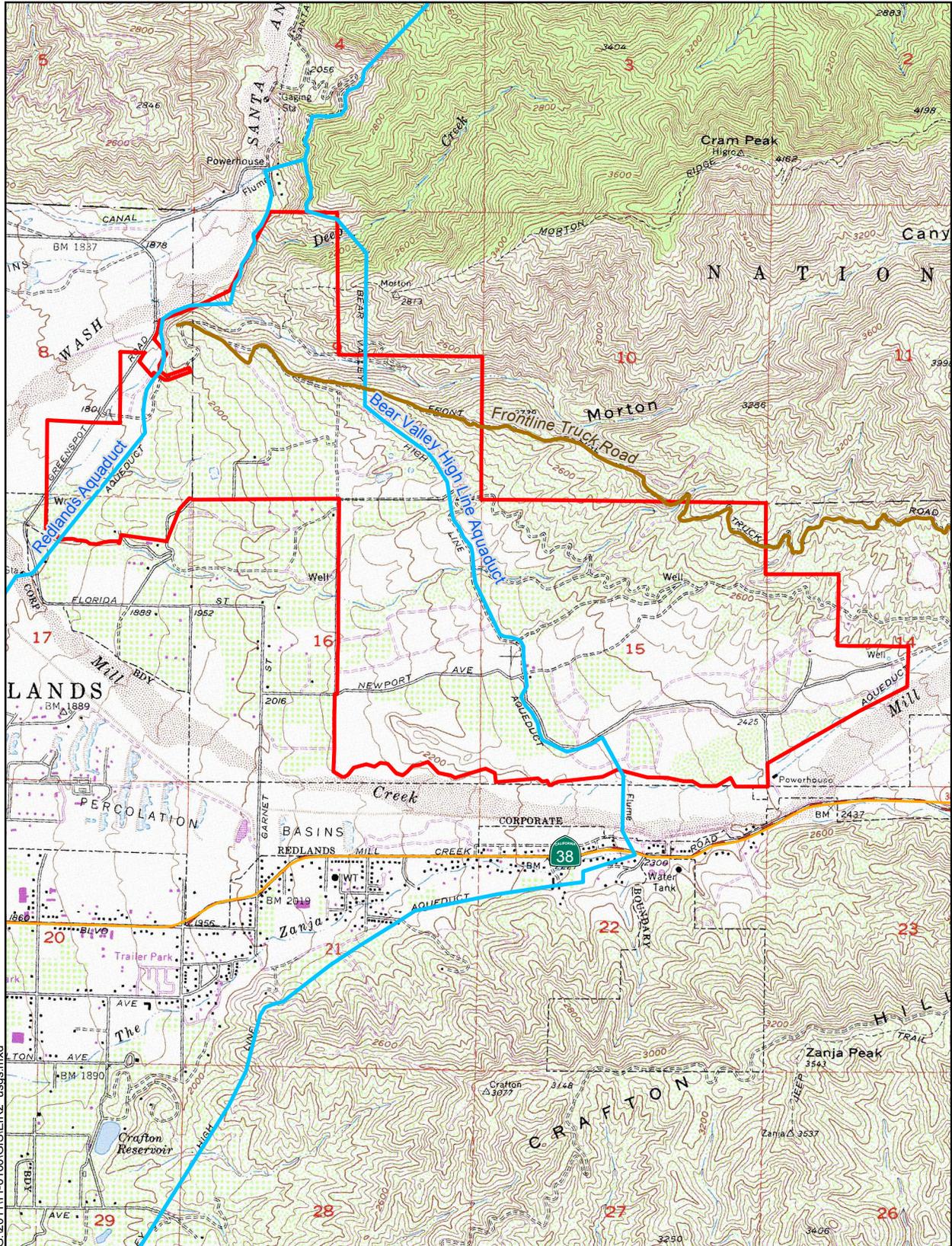
The Project site is located at the foothills of the San Bernardino National Forest east of the Santa Ana River and north of Mill Creek. The Project site can be characterized as mostly gently sloping and rolling terrain in the south and west, with moderately to steeply sloping terrain in the north and northeast. The elevation of the site varies from approximately 1,800 feet above sea level along the western boundary to approximately 2,700 feet above sea level at the foothills on the northeast side of the property as reflected in **Figure 3-3 – Topography Map**.

As shown in **Figure 3-3**, the entire Project site is located on the USGS Yucaipa Quadrangle (scale 1:24000) and involves lands within Township 1 South; Range 2 West; and all or portions of Sections 8, 9, 14, 15, 16 and 17. Major features identified on the current USGS quadrangle include: the Redlands Aqueduct; the Bear Valley High Line Aqueduct and flume; the Front Line Truck Road; at least three well sites; and various dirt access roads. The USGS Yucaipa quadrangle also illustrates the presence of orchards.

As shown in **Figures 3-4.1 and Figure 3-4.2 – Project Site Photographs**, the Project site is currently vacant and consists of former and remnant orchards and an area which was used as a borrow site to build the Seven Oaks Dam. There are no standing structures located on the Project site. However, remnants of the Project site’s agricultural past still remain on-site. For instance, portions of prior building foundations, roads, irrigation systems, and water wells still exist. However, these prior improvements have been destroyed, or are only partially intact. For a complete discussion of the Project site’s historical remnants please refer to Section 5.5 (Cultural Resources) of this DEIR.

3.1.3.1 Existing Access and Circulation

The Project site is located approximately six miles east of the SR-210 freeway, 4.5-miles north of the I-10 freeway, and just north of SR-38 (between 0.13 and 0.25 miles). Access from the City of Highland to the Project site is limited and is provided by Greenspot Road, which is currently a paved, two-lane road with no curb, gutter, sidewalks, or other roadway improvements. Greenspot Road west of the Project site is currently being realigned and a new bridge is being constructed to the west of the existing Greenspot Road bridge over the Santa Ana River. The existing Greenspot Road bridge (also known as the Iron Bridge) will remain and be reused as a multi-purpose trail. Newport Avenue, a paved street with no lane striping or improvements, runs east–west through the southern portion of the Project site and provides limited access from the City of Redlands and unincorporated San Bernardino County. Several unpaved roadways traverse through portions of the Project site but serve no significant access or circulation purpose. These roadways include Emerald Avenue and Tres Lagos/Villiers Street, and High Line Aqueduct Road in the northwest and Fish Hatchery Road and Redlands Heights Ranch Road in the south.



Source: USGS, Yucaipa Quadrangle

Figure 3-3 – Topography Map
Harmony Specific Plan Draft EIR





View looking north at Seven Oaks Dam from Greenspot Road



Overview of property along Greenspot Road



Morton Canyon outfall to Santa Ana River



Deep Creek outfall to Santa Ana River



View of Project Site looking north San Bernardino Mountains across Mill Creek

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Source: McKenna et al. Phase I Cultural Resources Investigation, October 31, 2011; RBF Consulting, Habitat Assessment, September 2011; and WEBB, November 2011

Figure 3-4.1 – Project Site Photographs
Harmony Specific Plan Draft EIR



Incised Erosional Features.



Well head near Emerald and Villiers



Remnant Residential Foundation



Remnant Bear Valley High Line Aquaduct



Terracing

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Source: McKenna et al. Phase I Cultural Resources Investigation, October 31, 2011; RBF Consulting, Habitat Assessment, September 2011; and WEBB, November 2011

Figure 3-4.2 – Project Site Photographs
Harmony Specific Plan Draft EIR

3.1.3.2 Existing Infrastructure – Potable Water

East Valley Water District (EVWD) is the water service provider for the Specific Plan area. EVWD presently provides retail water service to approximately 27.7 square miles. The Project site lies within the eastern limits of the EVWD service area. There are no existing EVWD facilities within or adjacent to the Project site.

3.1.3.3 Existing Infrastructure – Recycled Water

Currently there are no recycled (non-potable) water facilities within the EVWD service area. Recycled water will be supplied to the Specific Plan area by EVWD by a wastewater treatment plant to be constructed within the Project site.

3.1.3.4 Existing Infrastructure –Sewer

Sanitary sewer service will be provided to the Specific Plan area by EVWD. There are no existing sewer collection facilities in the immediate vicinity of the Project site. The closest existing sewer collection facility is to the west of Greenspot Road approximately 10,000 feet from the Project site. From this point sewage is carried in existing facilities westerly approximately 11 miles to the San Bernardino Regional Wastewater Treatment plant operated by the City of San Bernardino.

3.1.3.5 Existing Infrastructure – Drainage

The Project site generally receives stormwater runoff from the foothills lying to the north and northeast. The runoff is conveyed through the Project site and ultimately reaches the Santa Ana River to the west or Mill Creek on the south. The Project site has historically been used for agricultural purposes and most recently served as an earth borrow site for construction of the Seven Oaks Dam. Both of these activities have altered natural drainage patterns and drainage characteristics for a significant portion of the Project site.

3.1.3.6 Existing Infrastructure – Dry Utilities

As shown below in **Table 3-A – Dry Utility Purveyors**, the proposed Project is located within the service territory of the following purveyors:

Table 3-A – Dry Utility Purveyors

Type of Services	Purveyor
Electricity	Southern California Edison Company (SCE)
Natural Gas	Southern California Gas Company
Communication Systems	Verizon California Inc.
Solid Waste	Burrtec Waste Industries Inc. and Cal Disposal Co. Inc
Cable Television	Time Warner Cable

3.1.4 Existing General Plan Land Use and Zoning Designation

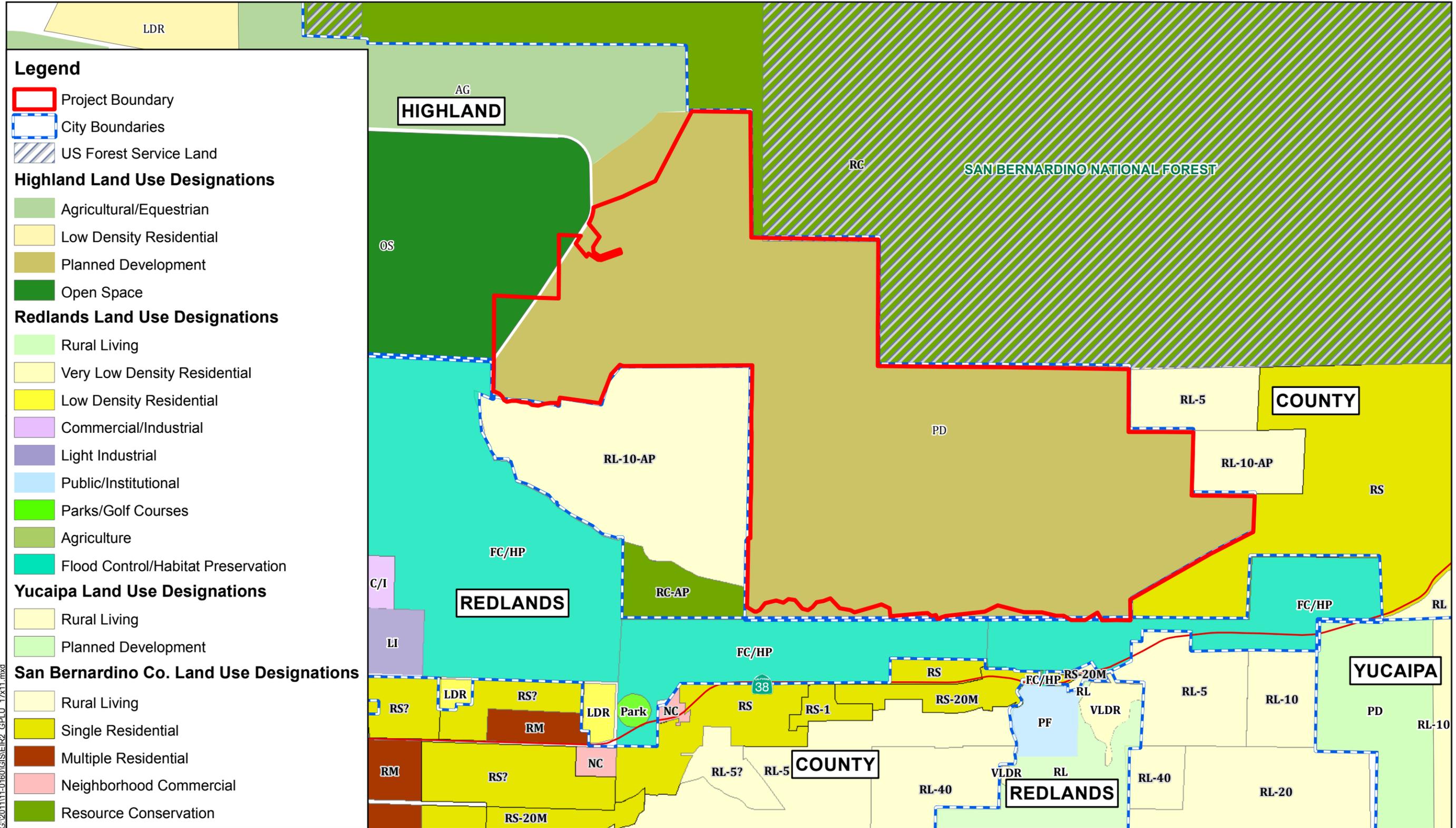
The Project site's General Plan land use designation is entirely within an area designated as Planned Development (see **Figure 3-5 – General Plan Land Use Designations**). The General Plan Land Use Element envisions the entire Project site as a “one-of-a-kind, high quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities.” (General Plan, p. 2-41) In addition, the current zoning across the entire Project site is PD (Planned Development) (See **Figure 3-6 – Zoning Map**). Within the PD-designated areas, all residential land uses are considered to be appropriate, as are support uses (e.g., open space and recreation, public facilities, commercial, and all employment-generated uses) that may be appropriate, subject to applicable General Plan policies and ordinances of the City of Highland. While there is no specific maximum intensity, the maximum overall intensity of PD-designated areas are required to be consistent with the provisions of the General Plan or determined through the development review process and must be compatible with adjacent existing and planned land uses as well as address natural site features. Pursuant to the General Plan, development within PD areas is processed through the use of a specific plan, a planned unit development, a conditional use permit or a similar mechanism.

3.1.5 Surrounding Land Uses

As shown in **Figure 3-7 – Existing Setting Map**, features located adjacent to the Project site include the San Bernardino National Forest to the north, the Santa Ana River to the west, agricultural land to the southwest, and Mill Creek to the south. The Seven Oaks Dam is located approximately 0.75 miles to the northwest of the Project site and several rural residences are located to the east of the Project site. Access to the Project site is limited, given its outlying location within the City. Greenspot Road provides the sole connection between the City and the Project site. However, limited additional access to the Project site is available to the southwest via Newport Road from unincorporated San Bernardino County and the City of Redlands.

The Project site is contiguous with the City of Highland to the northwest, and the County of San Bernardino to the north, east, and west. In addition, the City of Redlands is located across Mill Creek to the south. The unincorporated County of San Bernardino areas adjacent to the Project site (outside the San Bernardino National Forest) are within the City of Redlands Sphere of Influence.

The existing uses surrounding the Project site include the San Bernardino National Forest to the north and north-east of the Project site. Agricultural land (citrus trees) is located to the west along with scattered rural residences. To the south of the Project site is Mill Creek; further south across Mill Creek are areas of open space followed by single family residential units and Crafton Hills. The area to the east of the Project site is primarily open space with scattered rural residences, and scattered areas of agricultural land (citrus trees).



Sources: San Bernardino Co. General Plan Land Use Zoning Map from website, June 2013; City of Redlands General Plan, 1995; City of Highland General Plan, 2006; City of Yucaipa General Plan, 2004

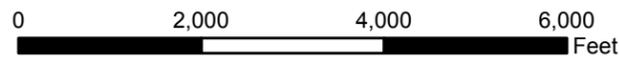
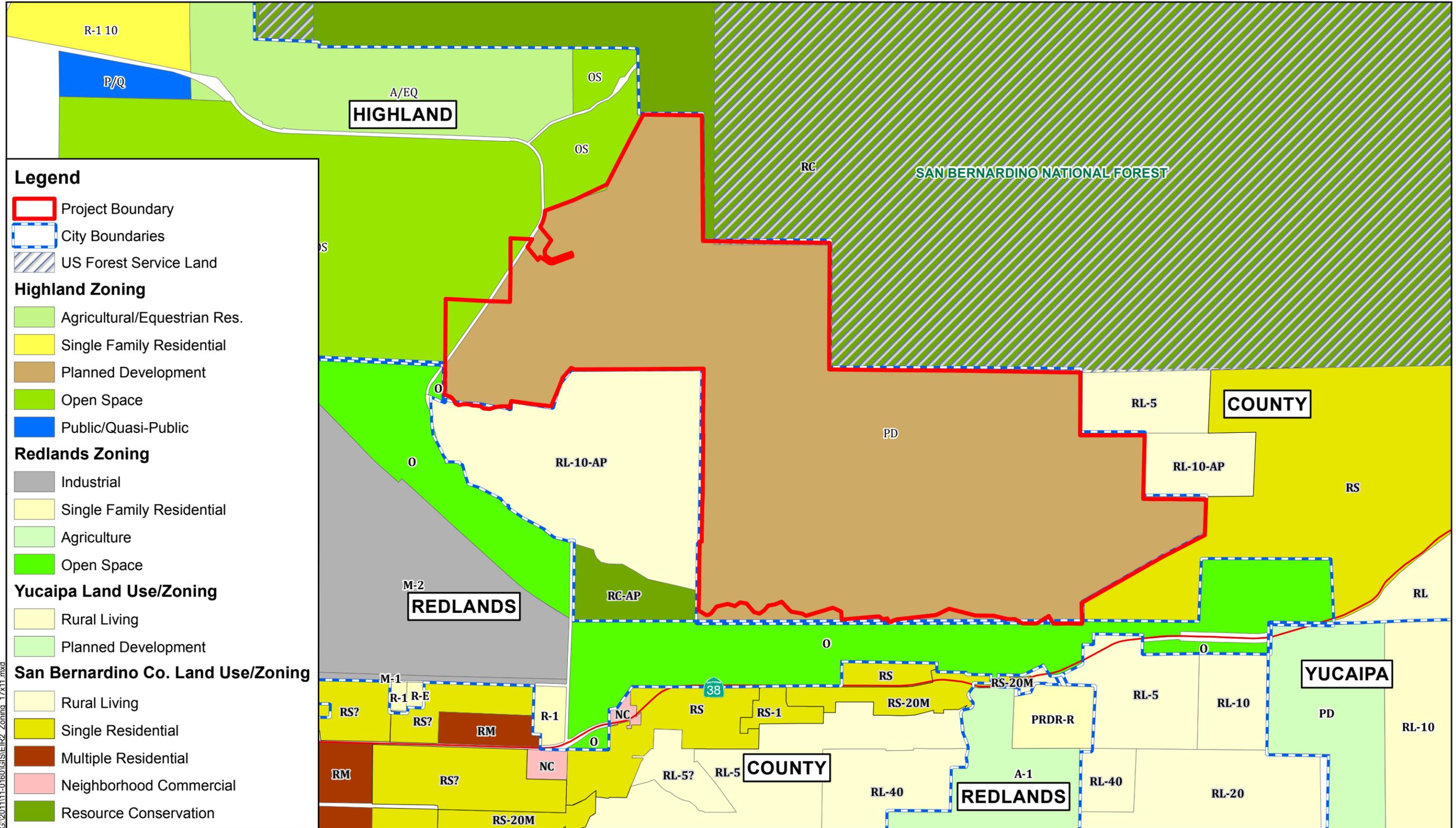


Figure 3.5 – General Plan Land Use
Harmony Specific Plan Draft EIR



Sources: San Bernardino Co. General Plan Land Use Zoning Map from website, June 2013; City of Redlands Zoning Map, Apr. 2012; City of Highland Zoning Map, May 2012; City of Yucaipa General Plan, 2004, updated 2013.

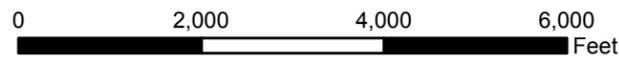
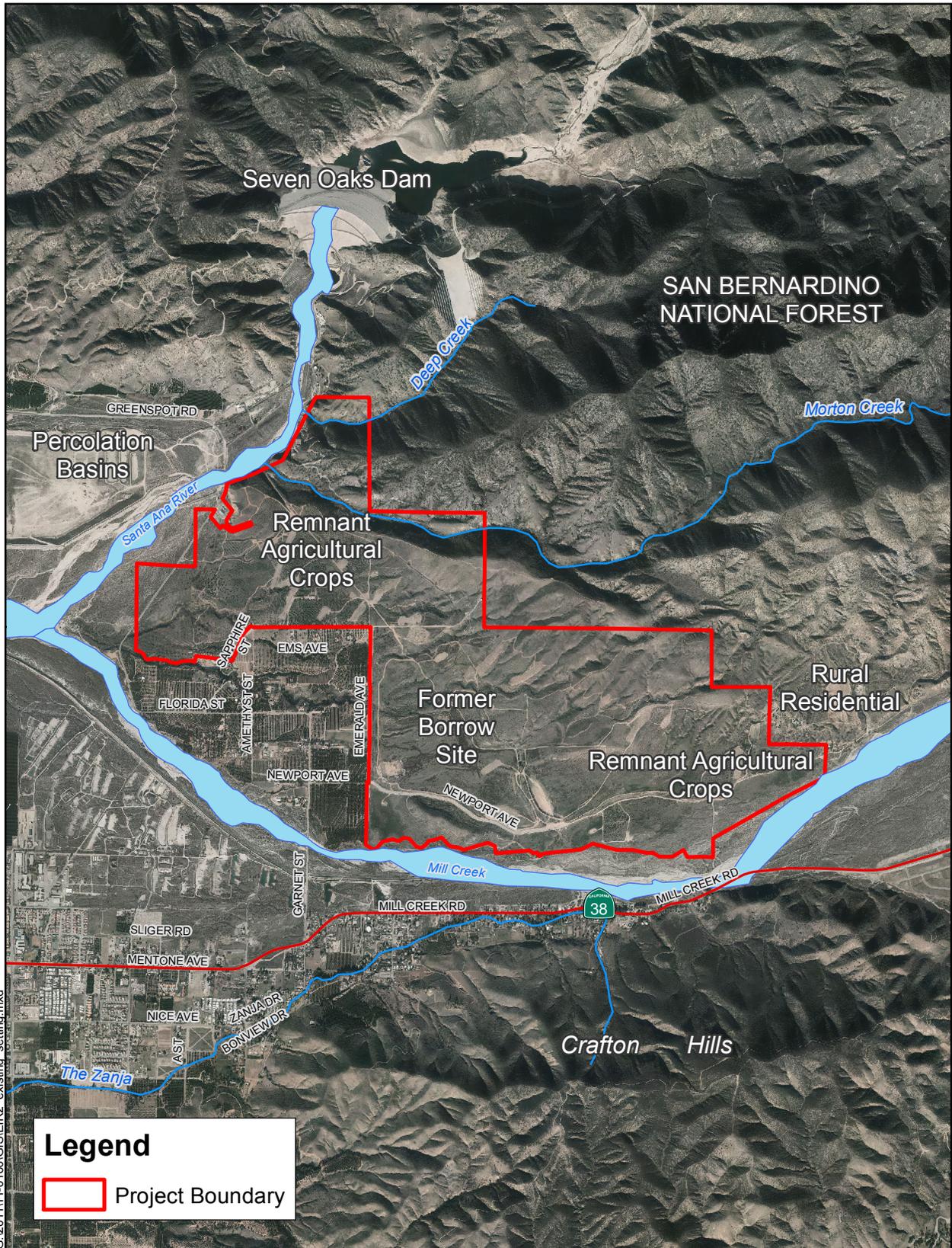
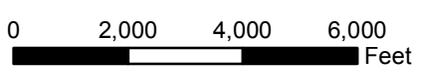


Figure 3.6 – Zoning
Harmony Specific Plan Draft EIR



Source: San Bernardino County ISD, 2012
 Harmony Specific Plan, Exhibit 3-1,
 Existing Land Uses

Figure 3-7 – Existing Setting
 Harmony Specific Plan Draft EIR



3.2 Project Characteristics

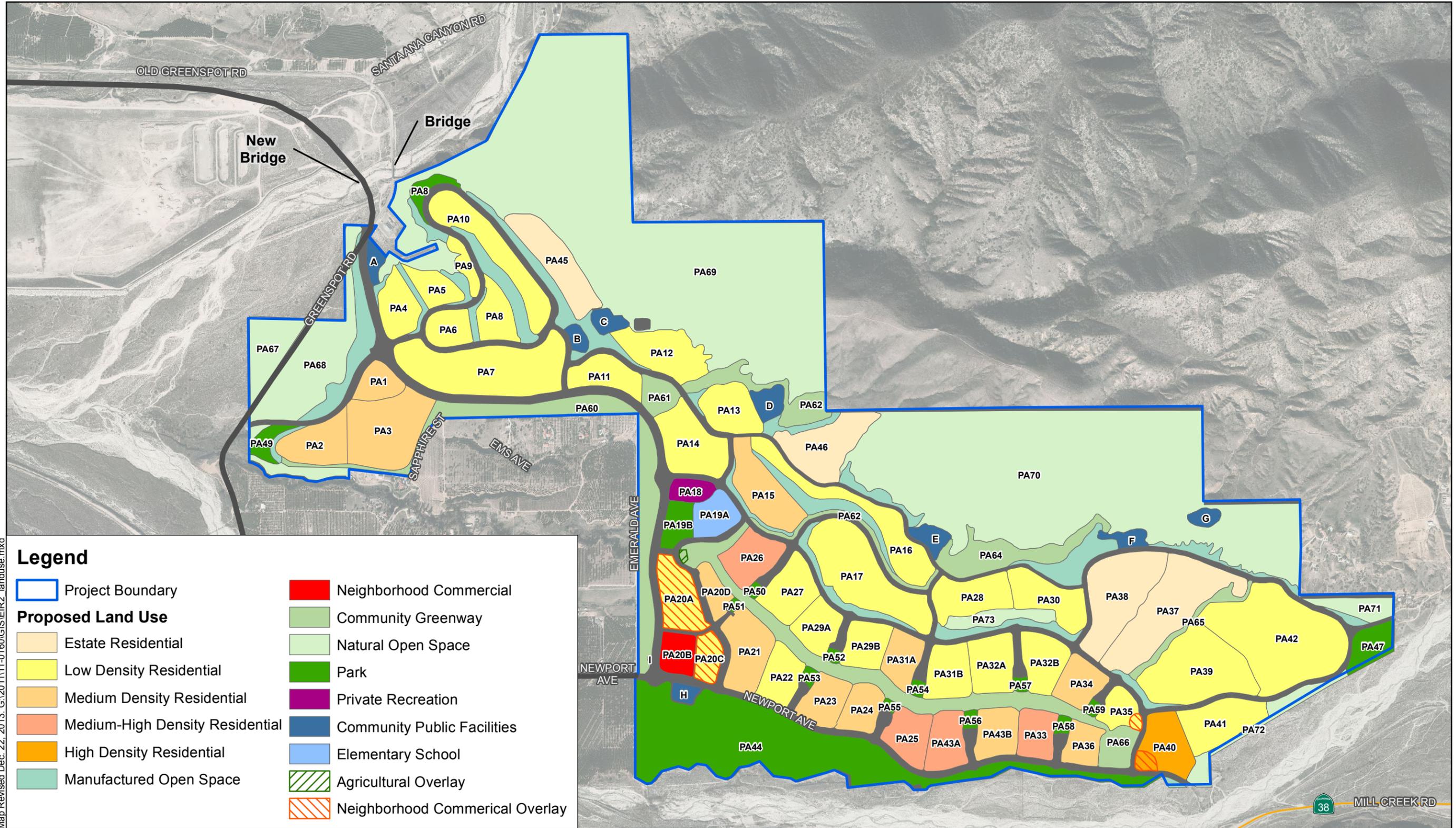
3.2.1 Proposed Project Overview

The proposed Project is a master planned residential community that will be implemented through the adoption of the Harmony Specific Plan. The Specific Plan will establish the zoning for the Project site and include a land use plan, designation of planning areas, design and landscaping guidelines, and development standards for the development of the Project site. As shown in **Figure 3-8 – Proposed Land Use Plan** and reflected in **Table 3-B – Land Use Summary** below, the Harmony Specific Plan will consist of the following land uses:

- **Residential:** Residential land use comprises approximately 658 acres of the Project site, providing a variety of residential detached and attached housing types. The following categories of residential land use are planned for Harmony.
 - Estate Residential: 4 planning areas
 - Low Density Residential: 26 planning areas (one planning area is partially covered with a Neighborhood Commercial Overlay)
 - Medium Density Residential: 14 planning areas (two planning areas are entirely covered with a Neighborhood Commercial Overlay)
 - Medium-High Density Residential: 4 planning areas
 - High Density Residential: 1 planning area (partially covered with a Neighborhood Commercial Overlay)
- **Neighborhood Commercial:** Approximately 5.7 acres of the Project site is planned for development of neighborhood commercial land uses to provide retail goods and services to the community. An additional 15.9 acres of neighborhood commercial are allowed in residential areas designated with a Neighborhood Commercial Overlay. Areas designated with a Neighborhood Commercial Overlay may develop as their underlying residential land use, as neighborhood commercial, or as a combination of residential and neighborhood commercial uses.
- **Recreation and Open Space:** Of the total Project area of 1,657 acres, approximately 830 acres, or 50% of the entire community, is planned for parks, recreation, and open spaces (natural and manufactured). Approximately 535 acres will remain in natural open space, while approximately 110.7 acres of parks and 111.8 acres of community greenway will be developed. Parks will be improved as active and passive recreational areas. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are designed for activities such as walking, hiking and quiet reflection. Harmony offers its residents the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails that meander through the community's greenway system. Approximately one acre of Harmony's community greenway has been designated with an Agriculture Overlay; this area is envisioned to provide space for

community gardens, stands for local farmers to sell their produce, and/or potentially recreational amenities for residents. The Harmony Specific Plan also includes the provision of approximately 4.3 acres for “The Parkhouse”, a private recreation facility featuring a clubhouse, swimming pool, and other active and passive amenities.

- **Community Public Facilities:** The Harmony Specific Plan provides for the development of one elementary school on an 8.3-acre site. The elementary school site is adjacent to a 5.0-acre joint-use neighborhood park at the center of the community to ensure equitable access for all Harmony residents. The elementary school will be accessible by pedestrians and bicyclists via the proposed multipurpose trail network. The Specific Plan also identifies a 1.5-acre site for the development of a new fire station. Additional public facilities totaling 18.5 acres could include water reservoirs, a water treatment facility, sewage treatment plant, or pump station.



Map Revised Dec. 22, 2013. G:\2011\11-0160\GIS\IEIR2_landuse.mxd

Source: Harmony Specific Plan, Exhibit 4-1, Community Plan, Dec. 2013.

Figure 3-8 – Proposed Land Use Plan
Harmony Specific Plan Draft EIR

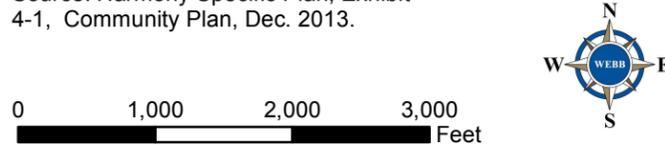


Table 3-B – Land Use Summary

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Residential				
Estate Residential, ER (0-2.0 du/ac)	84.4	81	84.4	81
Low Density Residential, LDR (2.1-6.0 du/ac)	382.1	1,630	381.1	1,624
Medium Density Residential, MDR (6.1-12.0 du/ac)	146.4	1,188	132.5	1,049
Medium-High Density Residential, MHDR (12.1-20.0 du/ac)	34.4	518	34.4	518
High Density Residential, HDR (20.1-30.0 du/ac)	10.7	215	9.7	195
Residential Subtotal	658.0 (40%)	3,632	642.1 (39%)	3,467
Neighborhood Commercial				
Neighborhood Commercial, NC (0.23-0.25 FAR)	5.7	62,073 sf	21.6	225,423 sf
Neighborhood Commercial Subtotal	5.7 (0.3%)	62,073 sf	21.6 (1.5%)	225,423 sf
Recreation and Open Space				
Parks, P	110.7	-	110.7	-
Community Greenway, CG with 1.0 acre Agriculture Overlay (0.20 FAR)	111.8	8,712	111.8	8,712
Private Recreation, PR	4.3	-	4.3	-
Natural Open Space, NOS	535.2	-	535.3	-
Manufactured Open Space, MOS	72.0	-	72.0	-
Recreation And Open Space Subtotal	834.0 (50%)	8,712	834.0 (50%)	8,712
Community Public Facilities				
Elementary School, S (0.20 FAR)	8.3	72,310 sf	8.3	72,310 sf
Public Facilities, PF	20.0	-	20.0	-
Right-of-Way, ROW	131.4	-	131.4	-

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Community Public Facilities Subtotal	159.7 (9.5%)	72, 310 sf	159.7 (9.5%)	72,310 sf
PROJECT TOTALS	1,657.3	3,632 units and 143,095 sf	1,657.3	3,467 units and 306,445 sf

Source: Harmony Specific Plan, March 2014 p. 4.3.

3.2.2 Land Use Applications

The proposed Project includes the following land use applications:

General Plan Amendment: The City will consider a General Plan Amendment No. GPA 011-003 as part of its consideration of the Harmony Specific Plan. This General Plan Amendment would enable the City to implement General Plan land use and circulation policies within the Specific Plan area in a manner that addresses the physical characteristics of the Specific Plan area. GPA 011-003 includes:

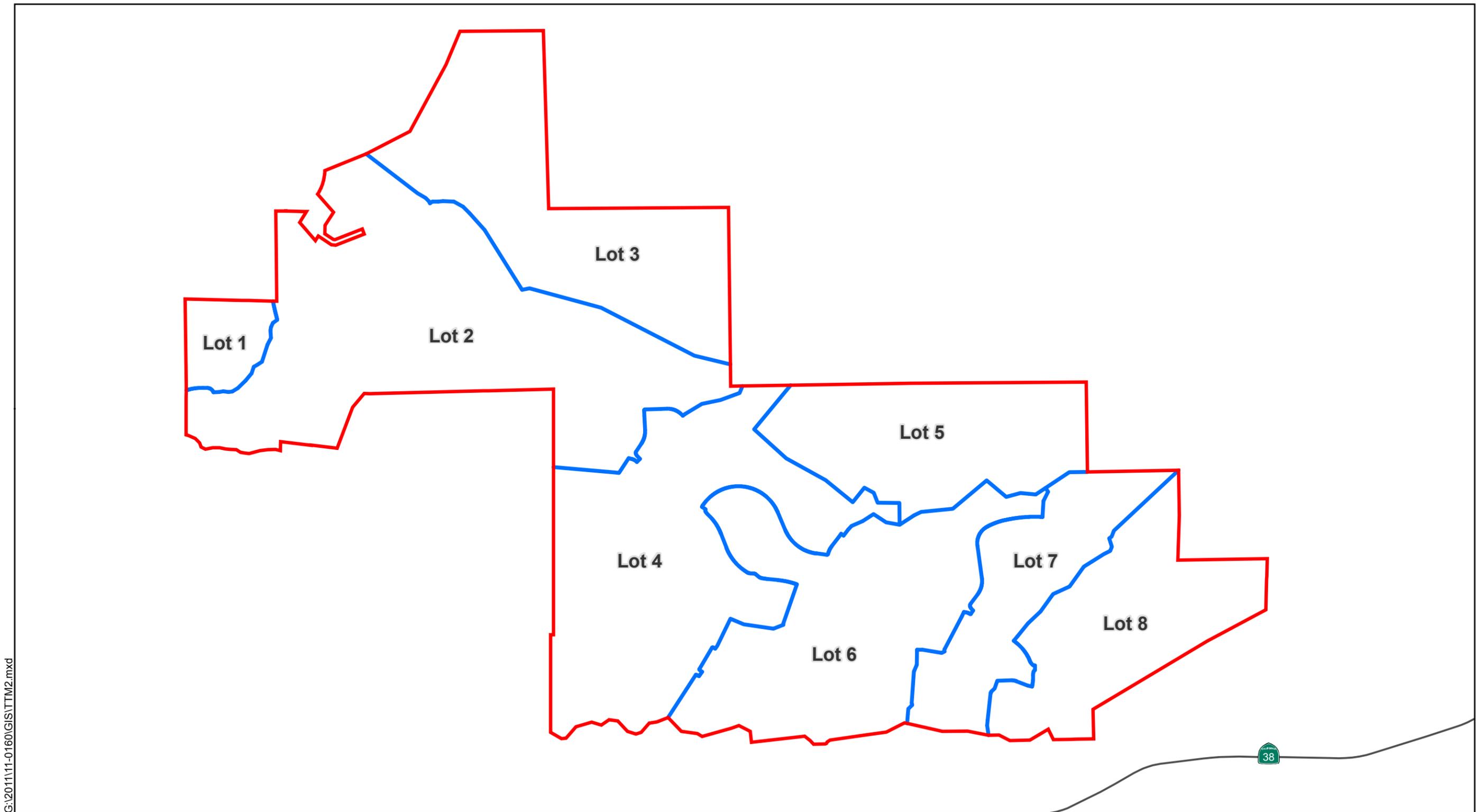
1. General Plan Land Use Element: Amend Land Use Element Table 2.1, Residential Buildout Estimates “Notes” to reflect the proposed “assumed density” for the Seven Oaks Planned Development area of 2.2 du/ac.
2. General Plan Circulation Element: Amend the Circulation Element to include new roadway classifications and cross-sections and update General Plan Figure 3-2 Roadway Network.

Zone Change: The City will consider Zone Change No. ZC 011-003 to change the existing zoning classification from Planned Development to “Harmony Specific Plan SPR 011-001.”

Specific Plan (Harmony Specific Plan): As authorized by Government Code Section 65450 *et seq.*, Specific Plan No. SPR 011-001 includes a land use plan, designation of planning areas, design and landscape guidelines and development standards associated with the development of the Harmony Specific Plan.

Tentative Tract Maps: Tentative Tract Map No. 18861 proposes to subdivide 1,657.3 acres into eight lots for financing and conveyance purposes and Tentative Tract Map No. 18871 proposes to subdivide 1,657.3 acres into 73 numbered lots and 79 lettered lots for development. (**Figure 3-9 – Tentative Tract Map No. 18861** and **Figure 3-10 – Tentative Tract Map No. 18871**)

Development Agreement: The development agreement will provide a framework for the development of the Harmony Specific Plan, establishing provisions related to phasing of development, timing of infrastructure and public facilities, provisions for infrastructure financing, and other development-related issues.



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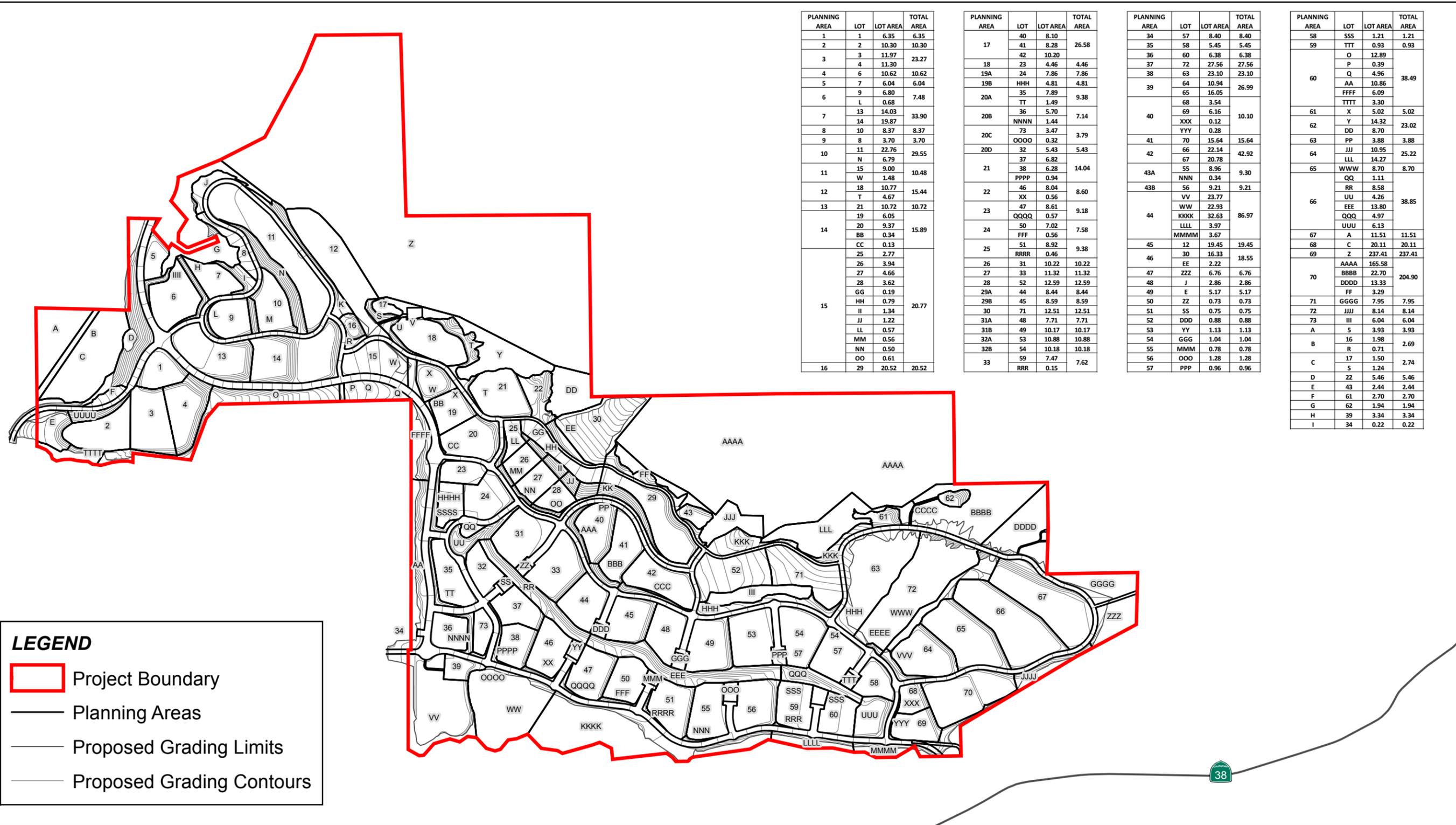
Source: RBF, 2013

Figure 3-9 – Tentative Tract Map No. 18861
Harmony Specific Plan Draft EIR

0 1,000 2,000 3,000
Feet



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PLANNING AREA	LOT	LOT AREA	TOTAL AREA
1	1	6.35	6.35
2	2	10.30	10.30
3	3	11.97	23.27
	4	11.30	
4	6	10.62	10.62
5	7	6.04	6.04
6	9	6.80	7.48
	L	0.68	
7	13	14.03	33.90
	14	19.87	
8	10	8.37	8.37
9	8	3.70	3.70
10	11	22.76	29.55
	N	6.79	
11	15	9.00	10.48
	W	1.48	
12	18	10.77	15.44
	T	4.67	
13	21	10.72	10.72
	19	6.05	
14	20	9.37	15.89
	BB	0.34	
15	CC	0.13	20.77
	25	2.77	
16	29	20.52	20.52

PLANNING AREA	LOT	LOT AREA	TOTAL AREA
17	40	8.10	26.58
	41	8.28	
18	23	4.46	4.46
	42	10.20	
19A	24	7.86	7.86
19B	HHH	4.81	4.81
20A	35	7.89	9.38
	TT	1.49	
20B	36	5.70	7.14
	NNNN	1.44	
20C	73	3.47	3.79
20D	OOOO	0.32	5.43
21	37	6.82	14.04
	38	6.28	
22	PPPP	0.94	8.60
	46	8.04	
23	XX	0.56	9.18
	47	8.61	
24	QQQQ	0.57	7.58
	50	7.02	
25	FFF	0.56	9.38
	51	8.92	
26	RRRR	0.46	10.22
27	31	10.22	11.32
28	33	11.32	12.59
29A	52	12.59	8.44
29B	44	8.44	8.59
30	45	8.59	12.51
31A	71	12.51	7.71
31B	48	7.71	10.17
32A	49	10.17	10.88
32B	53	10.88	10.18
33	54	10.18	7.62
	59	7.47	

PLANNING AREA	LOT	LOT AREA	TOTAL AREA
34	57	8.40	8.40
35	58	5.45	5.45
36	60	6.38	6.38
37	72	27.56	27.56
38	63	23.10	23.10
39	64	10.94	26.99
	65	16.05	
40	68	3.54	10.10
	69	6.16	
41	XXX	0.12	15.64
	YYY	0.28	
42	66	22.14	42.92
	67	20.78	
43A	55	8.96	9.30
43B	NNN	0.34	9.21
44	VV	23.77	86.97
	WW	22.93	
45	KKKK	32.63	19.45
	LLLL	3.97	
46	MMMM	3.67	16.33
47	12	19.45	2.22
48	30	16.33	6.76
49	EE	2.22	2.86
50	ZZ	0.73	5.17
51	SS	0.75	0.73
52	DDD	0.88	0.88
53	YY	1.13	1.13
54	GGG	1.04	1.04
55	MMM	0.78	0.78
56	OOO	1.28	1.28
57	PPP	0.96	0.96

PLANNING AREA	LOT	LOT AREA	TOTAL AREA
58	SSS	1.21	1.21
59	TTT	0.93	0.93
60	O	12.89	38.49
	P	0.39	
	Q	4.96	
	AA	10.86	
	FFF	6.09	
61	XXX	3.30	5.02
62	Y	14.32	23.02
63	DD	8.70	3.88
64	PP	3.88	25.22
65	JJJ	10.95	14.27
66	LLL	14.27	38.85
	WWW	8.70	
	QQ	1.11	
	RR	8.58	
	UU	4.26	
67	EEE	13.80	11.51
	QQQ	4.97	
68	UUU	6.13	20.11
69	A	11.51	237.41
70	C	20.11	204.90
	Z	237.41	
	AAAA	165.58	
	BBBB	22.70	
71	DDDD	13.33	3.29
72	GGG	7.95	7.95
73	III	6.04	8.14
A	S	3.93	6.04
B	R	0.71	3.93
C	16	1.98	2.69
D	17	1.50	2.74
E	S	1.24	5.46
F	22	5.46	2.44
G	43	2.44	2.44
H	61	2.70	2.70
I	62	1.94	1.94
	39	3.34	3.34
	34	0.22	0.22

LEGEND

- Project Boundary
- Planning Areas
- Proposed Grading Limits
- Proposed Grading Contours

Source: RBF, 2013.

Figure 3-10 – Tentative Tract Map No. 18871
Harmony Specific Plan Draft EIR

0 1,000 2,000 3,000 Feet



3.2.3 Proposed Project Infrastructure/Utilities

The Project includes on site and off site infrastructure improvements, including but not limited to: roadways; sewer collection system with lift stations and force-main and on-site sewage treatment plant; water distribution system with reservoir(s), pump stations, pressure reducing stations, an optional raw water treatment facility, connections to existing off-site water infrastructure and other appurtenances; storm water management system with water quality treatment features; and dry utilities including electric, gas, telephone, and cable television. There are several different SCE overhead distribution lines on the Project site and there is one transmission line crossing the site that currently supports distribution facilities. These facilities will require action, varying in scope from removal and relocation to potential conversion to underground.

3.2.3.1 Potable Water

Potable water will be supplied to the Project site by EVWD. The Project’s estimated average water demand is 2,283 acre-feet per year (AFY) for potable water and 1,322 AFY for irrigation water for a total of 3,605 AFY. Potable water to serve the Project will be supplied by a combination of sources that include: 1) an extension of existing EVWD facilities located in Greenspot Road; 2) optional treatment of imported raw water from San Bernardino Valley Municipal Water District; and 3) treatment of raw water from the North Fork Pipeline. The majority of the Project site exists at elevations above current pressure zones. At build-out it is anticipated that there will be five pressure zones as described below in **Table 3-C – Water Pressure Zones at Buildout**.

Table 3-C – Water Pressure Zones at Buildout

Pressure Zone	Service Zone		HWL Elevation ¹	Pad Elevation ¹
	Low	High		
1	1,820	1,980	2,100	2,070
2	1,980	2,145	2,260	2,230
3	2,145	2,305	2,420	2,390
4	2,305	2,470	2,585	2,555
5	2,470	2,630	2,745	2,715

¹ Elevations in feet above sea level

Existing EVWD regional water facilities capable of providing service to the Project are located approximately 10,000 feet westerly of Greenspot Road near the Santa Paula Street intersection (See Section 5.17, Utilities and Service Systems for further detail and figures). Interconnection with this existing facility will be required and consists of an off-site water pipeline within Greenspot Road and the new bridge. The facilities needed to provide flow and pressure in conformance with EVWD and fire department standards include:

- Five storage reservoirs;
- Transfer pump station at each reservoir site;

- Four pressure reducing stations;
- Raw water treatment facility (optional); and
- Water distribution network

3.2.3.2 Recycled (Non-Potable)Water

Non-potable water will be supplied to the Project site by EVWD. Currently there are no recycled water facilities within the EVWD service area. An on-site wastewater treatment plant will produce recycled water for use within the Project site. The Harmony Specific Plan's average non-potable water demand is estimated to be 1.18 million gallons per day (MGD) or 1,322 AFY. Non-potable water (either recycled water from the wastewater treatment plant or non-potable water from the North Fork Pipeline) will be used to irrigate landscaping in parks, school play fields (if permissible), streets, recreation trails, common areas and open space areas. Facilities needed to provide flow and pressure in conformance with EVWD standards include:

- Five storage reservoirs;
- Transfer pump station at each site; and
- Four pressure reducing stations.

3.2.3.3 Sewer

Sewer service to the Project site will be provided by EVWD. EVWD presently provides sewer collection services to customers in their service area. There are no existing sewer collection facilities in the immediate vicinity of the Project site. The existing EVWD collection facilities are not adequately sized to carry the wastewater generated from the Project. EVWD has completed a new "Wastewater Collection System Master Plan" dated 10/18/13. The Master Plan explores a number of options for providing sewer service to the Project. One option involves construction of a wastewater treatment facility within the Harmony project. The Specific Plan adopts this option for purposes of defining land uses and infrastructure. The Project's wastewater treatment demand is 1.15 million gallons per day (MGD).

The Project will install collection sewer mains ranging in size from 8 inches to 15 inches in diameter. Section 5.17 of this DEIR contains a detailed description and figures of the proposed plan to provide sewer service for Harmony.

Facilities needed to provide sewer service in conformance with EVWD standards include:

- wastewater treatment plant,
- lift stations,
- on- and off-site force main, and
- a collection network.

3.2.3.4 Drainage

The Harmony Specific Plan proposes a comprehensive drainage system intended to collect, convey and deliver storm flows in accordance with City requirements. The primary goal of the storm water management system is to prevent flooding and protect property by providing safe, effective site drainage. The Project site contains 8 tributary areas that are impacted by the Specific Plan ranging in size from 26 acres to 482 acres. The Project site generally receives storm water runoff from the foothills lying to the north and northeast. The runoff is conveyed through the site and ultimately reaches the Santa Ana River to the west or Mill Creek on the south.

The Harmony Specific Plan includes a conceptual master drainage plan. The conceptual master drainage plan generally consists of inlets, outlets, underground conduits and soft bottom channels.

3.2.4 Project Grading

Grading for the Harmony Specific Plan reflects a conceptual grading similar yet different than the City of Highland's existing Hillside Grading Ordinance. Because of the unique and distinctive land uses proposed for the Specific Plan, a modification to the existing standards will be required.

In general, considerations applied in preparing a concept of the grading for Harmony are as follows: 1) the site generally slopes upward from the west to the east starting at 7% -10% until reaching a hinge point where the slope rapidly steepens, 2) grading for development is focused in the flatter terrain, 3) steeper terrain is preserved as natural open space or for agricultural purposes and 4) critical sensitive environmental habitat is protected. Specific Plan Exhibit 5-7 "Grading Concept," illustrates the conceptual grading plan for Harmony. More detailed grading plans will be required as part of the approval of any Tentative and Final subdivision maps (except a TTM for financing purposes).

Grading work shall be balanced on-site, and within adjacent development phases, if possible. If a development proposal does not include an entire Planning Area, then an overall conceptual grading plan for the entire planning area shall be provided.

3.2.5 Project Landscaping

The Harmony Specific Plan provides Landscape Design Guidelines, which provide requirements in addition to the City of Highland's standard plan and specifications, HMC Section 16.40.309 Water efficient landscape requirements and State regulations. Some of the requirements include consistency of landscaping with surrounding land uses, landscaping shall reflect the character of the community while employing water conservation techniques, installation of automatic irrigation in compliance with drought and water conservation standards, and the use of drought tolerant plants and techniques to reduce water use.

The Project area has been divided into three landscape districts, each possessing a distinctive landscape character that contributes to the overall agricultural theming of the community while building neighborhood identity. Each landscape district is defined by a fruiting tree as well as a native tree that possesses complimentary features. The three districts include: 1) Citrus District, 2) Walnut District, and 3) Apple District. The Citrus District provides a transition from the existing agricultural landscape adjacent to the Project. The Walnut District includes the northern neighborhoods on the east side of the

Project, which generally have steeper grades and are at higher elevations. The Apple District encompasses the primary entrance to the Project and the first phase of neighborhoods.

Landscape design plays a crucial role in effective street design that goes beyond form and aesthetics. Streetscape connects neighborhoods, allowing a smooth circulation of both vehicular and pedestrian traffic. The Project contains two levels of streetscape design: 1) perimeter streets, which provide overall circulation surrounding the Harmony community as well as neighborhoods, and 2) neighborhood streets, which provide circulation within residential neighborhoods. Street-tree patterns will be designed in a manner to complement and/or blend into the existing surroundings, and all street trees will be selected from the fuel modification list within the master plant palette.

A *Conceptual Fire Protection Plan*, prepared for the Project, contains fuel modification zones that are critical in maintaining the community safe from fire risk, and particularly to avoid spreading fire. A fire protective landscape is necessary because of climate, surrounding plant matter, and steep topography. The fuel modification zones are landscape zones to reduce the threat of fire through vegetation and maintenance requirements. The Specific Plan contains a Master Plant Palette for fuel modification zone plantings. The Master Plant Palette represents a mix of trees and shrubs that are suitable to the area's climate, as well as promote habitat restoration and provide fire protection. The *Conceptual Fire Protection Plan* will be used during the tentative map stage to review building locations and landscape plans.

3.2.6 Project Circulation

The circulation plan for the Harmony Specific Plan promotes the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. The circulation plan includes vehicular circulation, trails, and potential public transportation. The proposed circulation plan is described in detail in Section 5.16 (Transportation/Traffic) of this DEIR. The proposed roadway circulation and trails are shown on **Figure 3-11 – Project Circulation Plan** and **Figure 3-12 – Project Trails and Public Transportation System**.

3.2.7 Sustainable Design

The longevity and success of a community is not only based on a strong community structure and development program, it is also based on how a community evolves and sustains itself over time.

Sustainability is generally defined as a community's ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. Through careful, thoughtful planning and design, Harmony is infused with sustainable design practices at all levels. The community design of Harmony focuses on the creation of a sustainable community with walkability and resource conservation as primary development objectives.

Key design features from the Harmony Specific Plan are listed below (HSP, p. 1-8):

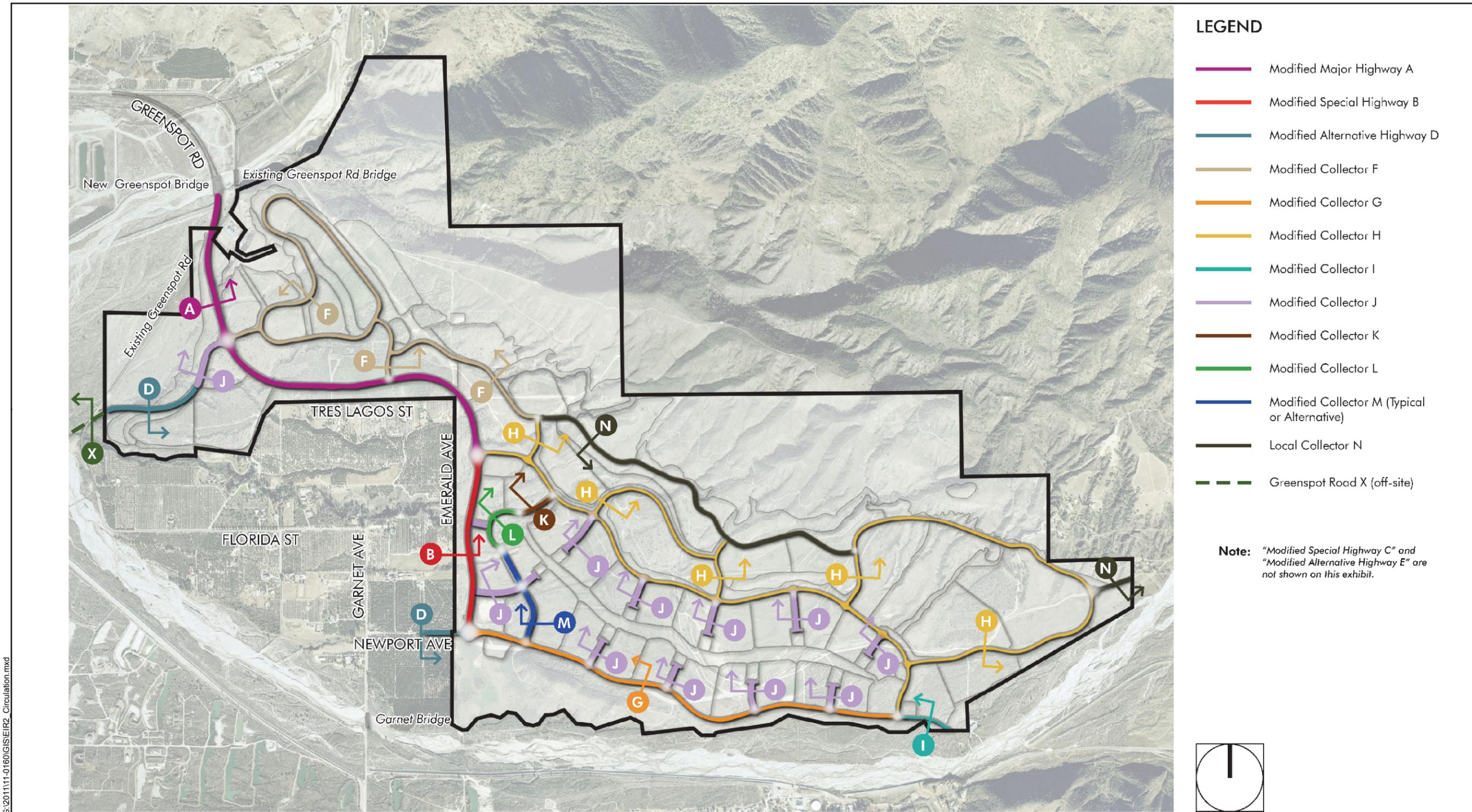
1. Residential neighborhoods sited to maximize open space and to preserve sensitive habitat areas, ridges, canyons, and wildlife corridors

2. The opportunity for development of residential units designed with living areas on the second floor and home office areas on the first floor
3. Equip residential development with appropriate wiring for Internet access for residents to shop and work online, reducing vehicle trips
4. The use of climate-appropriate plant materials and noninvasive ornamental landscape materials utilized as the primary plant materials for public open space and trails
5. Strategically planted canopy trees that provide shade and naturally cool public areas
6. The use of non-potable water to irrigate public parks, neighborhood edges, agriculture areas, and other common landscape areas
7. Sustainable development practices consistent with the 2010 California Green Building Code
8. Reduced automobile trips through the construction of alternative modes of travel including an extensive network of biking trails and walkways connecting residential areas, schools, parks, open space, and commercial services, reducing reliance on the automobile for access to these facilities
9. Use (or reuse) of site materials such as rocks and wood where possible

3.3 Project Phasing

The Project phasing provides a conceptual framework to facilitate development of the Specific Plan Area while assuring the provision of infrastructure necessary to support the planned development.

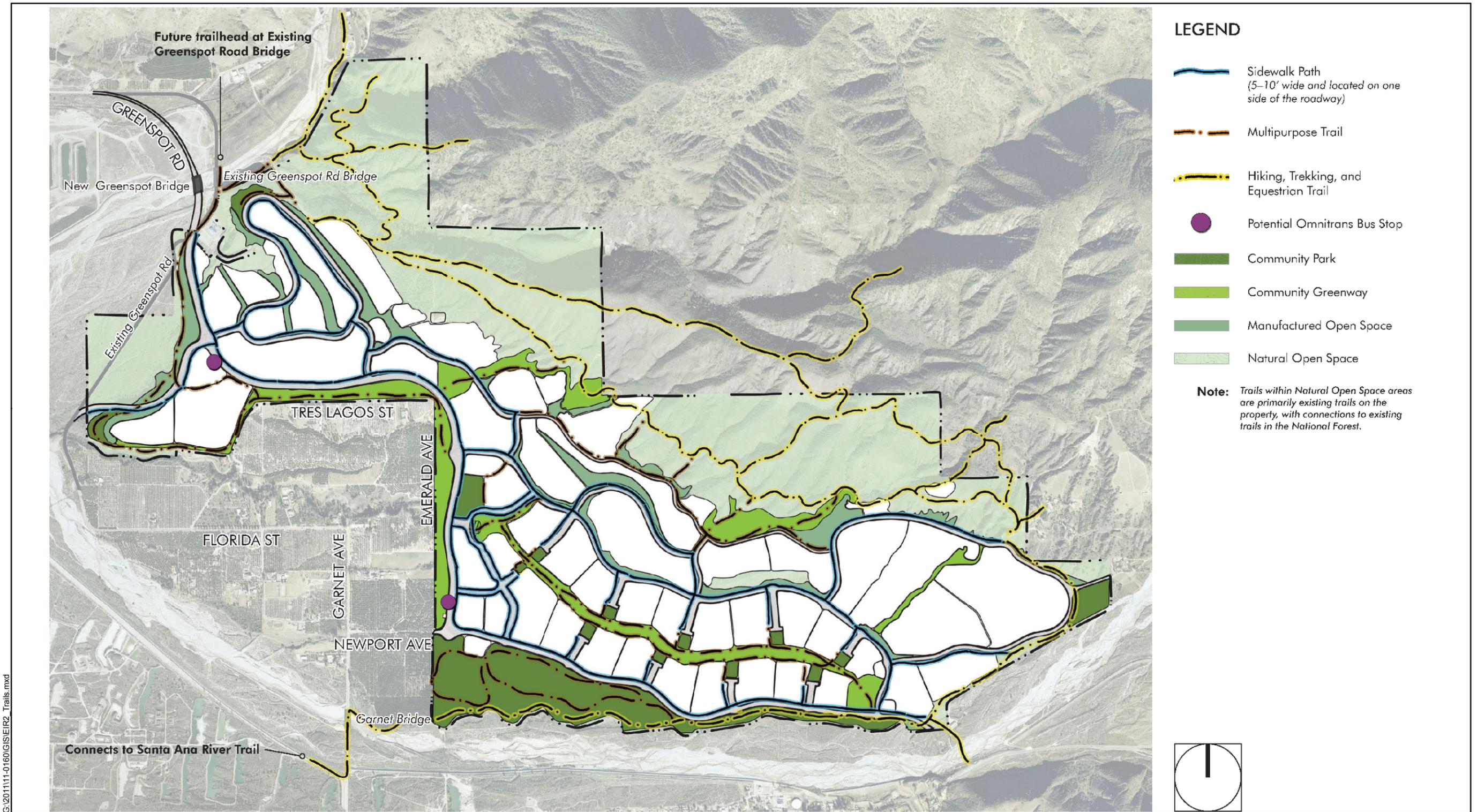
Development is assumed to occur in a number of phases over time. **Figure 3-13 – Conceptual Phasing Plan** provides a conceptual phasing plan for the Project.



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Source: Exhibit 6-14, Harmony SP, Planning Center, Dec. 2013.

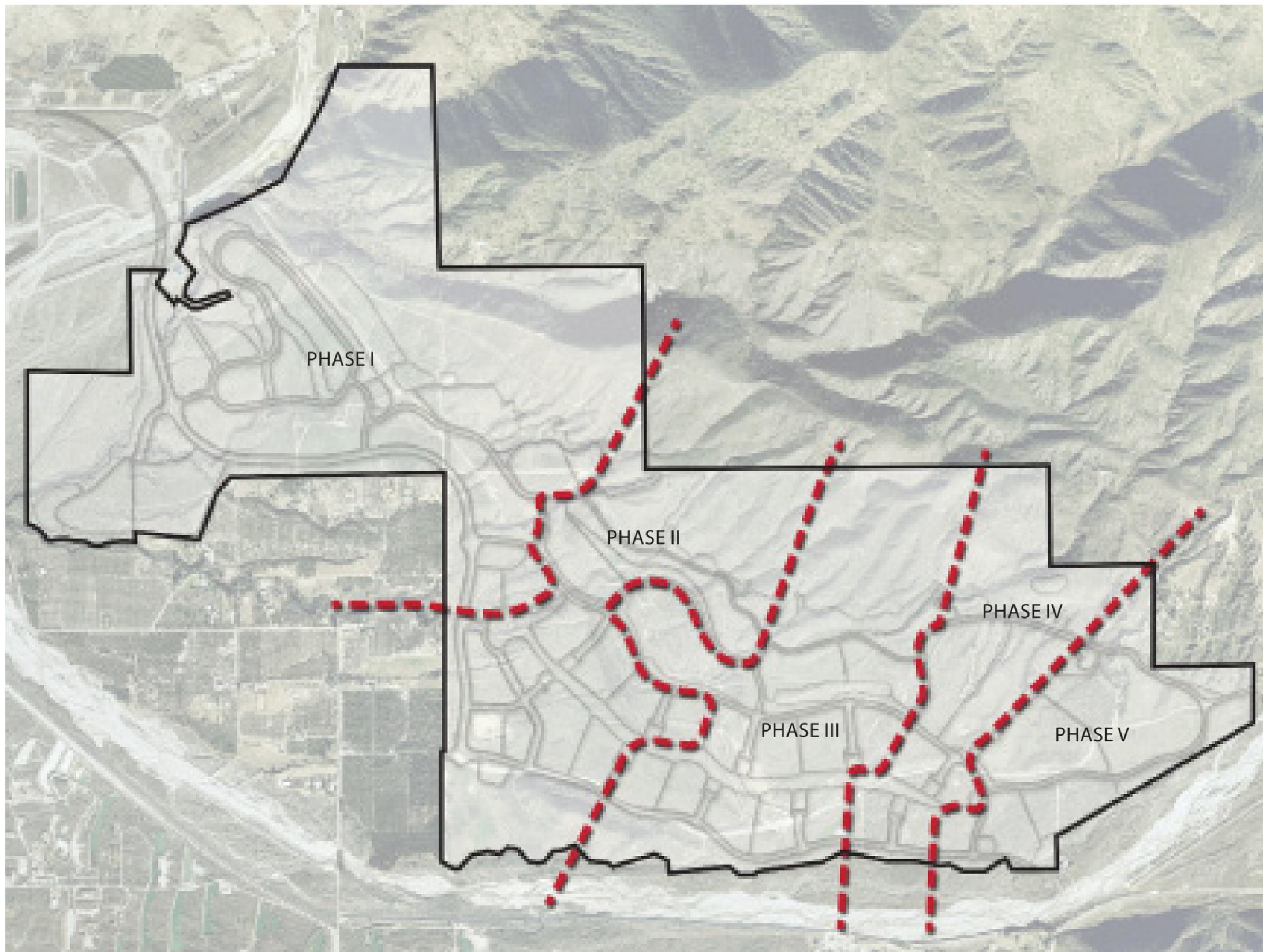
Figure 3-11 – Circulation
Harmony Specific Plan Draft EIR



G:\2011\11-0160\GIS\EIR2_Trails.mxd

Source: Figure 6-3, Harmony SP, Planning Center, Dec. 2013.

Figure 3-12 – Trails and Public Transportation
Harmony Specific Plan Draft EIR



PHASE I		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	212.4	
Units	909	909
Sq. Ft.	72,310	72,310

PHASE II		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	142.5	
Units	949	810
Sq. Ft.	70,785	212,355

PHASE III		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	141.1	
Units	923	923
Sq. Ft.	-	-

PHASE IV		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	80.3	
Units	284	278
Sq. Ft.	-	10,890

PHASE V		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	96.6	
Units	567	547
Sq. Ft.	-	10,890

TOTAL		
	Without NC Overlay	With NC Overlay
Adjusted Gross Acreage	672.9	
Units	3,632	3,467
Sq. Ft.	143,095	306,445



FIGURE 3-13 - Conceptual Phasing Plan
Harmony Specific Plan Draft EIR

3.4 Project Objectives

A clear statement of project objectives allows for the analysis of reasonable alternatives to the proposed project. A range of reasonable alternatives, both on- and off-site, that would feasibly attain most of the basic project objectives, while avoiding or substantially lessening the significant effects of the project, must be analyzed per CEQA Guidelines Section 15126.6.

The approved Harmony Specific Plan will serve as the implementation tool for the General Plan and will amend the City of Highland’s Zoning Code and Map to designate the Project site as “Harmony Specific Plan (SPR-011-001)”. The vision for the Harmony Specific Plan is achieved through the implementation of unique goals and objectives established for the Specific Plan. Twelve objectives have been identified for the Harmony Specific Plan:

- Build Communities with environmental stewardship and sustainability in mind through measures that protect water resources and promote water conservation.
- Entitle the Orange County-owned former borrow site for the Seven Oaks Dam with revenue generating uses that would provide funds to the County for regional infrastructure investment.
- Provide a master-planned community that emphasizes its natural setting and provides multiple opportunities for its residents and the general public to enjoy the open space through parks, trails, protection of natural open space, and provision of other recreational amenities that provide access to the mountains and Highland Beach.
- Develop a community consistent with the General Plan Land Use goal of creating an unique master-planned community that brings together residential and commercial development with open space protection, recreation and trail amenities.
- Provide a diversity of housing types to suit housing needs at all stages of life: from first-time homebuyers to families with children, empty-nesters and singles to further the General Plan goal of providing a variety of housing opportunities.
- Provide high quality new housing to enhance and stimulate commercial development in the City of Highland.
- Develop infrastructure phased with Project development and complete infrastructure connections for roads, sewers, utilities, drainage facilities, and water in the east Highland area.
- Maximize open space and protect sensitive habitat areas, ridges, canyons and wildlife corridors through, among other measures, buffers designed to provide a natural edge for development adjacent to natural public open space.
- Minimize reliance on the automobile through the construction of alternative modes of travel through the community such as biking trails and walkways that link residential, parks, and commercial areas.
- Implement the City’s General Plan Land Use Goals to develop a land use plan that responds to the unique environmental conditions of the area.

- Ensure public safety for new and existing residents of east Highland by providing adequate police and fire services to serve the community.
- Provide circulation improvements that not only serve the needs of Harmony community, but provide region-wide benefits.

3.5 Discretionary Actions and Approvals

The DEIR serves as an informational document for use by public agencies, the general public, and decision makers. This DEIR discusses the impacts of development pursuant to the proposed Project and related components, and analyzes Project alternatives. This DEIR will be used by the City of Highland and responsible agencies in assessing impacts of the proposed Project.

The following public officials and agencies will use this DEIR when considering the following actions:

- **City of Highland City Council**
 - a) Certification of Final Environmental Impact Report for the Harmony Specific Plan.
 - b) Approval and adoption of the Harmony Specific Plan, which includes the land use plan, zoning, design guidelines, and designation of planning areas associated with the development of the Harmony Specific Plan (SPR 011-001).
 - c) Approval and adoption of General Plan Amendment (GPA 011-003).
 - d) Approval and adoption of Zone Change (ZC 011-003).
 - e) Approval and adoption of Tentative Tract Maps (TTM 18861 and 18871), which propose to subdivide 1,657.3 acres into eight lots for financing and conveyance purposes and subdivide 1,657.3 acres into 73 numbered lots and 79 lettered lots for development.
 - f) Approval and adoption by ordinance of a development agreement between the City and applicant that will establish provisions for development of the Project, including but not limited to phasing of land use, installation and financing of infrastructure, vesting of development rights and timing of construction of public improvements.
 - g) Implementation of the Specific Plan through the approval of land use proposals including, but not limited to Subdivisions, and final tract maps.
- **City of Highland Planning Commission**
 - a) Recommendation to the City Council for Certification of Final Environmental Impact Report for the Harmony Specific Plan (SPR 011-001).
 - b) Recommendation to City Council regarding approval of General Plan Amendment (GPA 011-003).
 - c) Recommendation to City Council regarding approval of Zone Change (ZC 011-003).

- d) Recommendation to City Council regarding approval of the Harmony Specific Plan (SPR 011-001), which includes the land use plan, zoning, design guidelines, and designation of planning areas associated with the development of the Harmony Specific Plan.
- h) Recommendation to City Council regarding approval of Tentative Tract Maps (TTM 18861 and 18871), which propose to subdivide 1,657.3 acres into eight lots for financing and conveyance purposes and subdivide 1,657.3 acres into 73 numbered lots and 79 lettered lots for development.
- e) Recommendation to the City Council regarding the development agreement between the City and applicant.
- f) Implementation of the Specific Plan through the approval of land use proposals including, but not limited to, Tentative Tract Maps, Development Plans, Conditional Use Permits and Major Development Reviews.
- **City of Highland Community Development Department (Planning, Building and Safety)**
 - a) Implementation of the Specific Plan through the approval of land use proposals including, but not limited to, Minor Development Reviews.
 - b) Issuance of Building Permits.
- **City of Highland Engineering Departments**
 - a) Issuance of Grading Permits, Encroachment Permits, and Infrastructure Improvement Permits.
- **California Department of Fish and Wildlife**
 - c) Issuance of permits under Section 1600 of the Fish and Game Code related to streambed alterations.
- **California Department of Water Resources**
 - a) Issuance of an Encroachment Permit from the California Department of Water Resources (DWR) prior to the start of construction for construction within DWR Right-of-Way (ROW).
- **East Valley Water District**
 - a) Approval and construction of infrastructure (water and sewer) improvements.
- **Regional Water Quality Control Board**
 - a) Issuance of Notice of Intent prior to construction operations related to National Pollutant Discharge Elimination System (NPDES) Construction Permit.
 - b) Issuance of water quality certification pursuant to Section 401 of the Clean Water Act (CWA) in connection with issuance of a Section 404 CWA permit.

- **San Bernardino County**
 - a) Issuance of encroachment permits and/or Right-of-Way acquisition in the unincorporated areas of San Bernardino County.
- **U.S. Army Corps of Engineers**
 - a) Issuance of Section 404 permits under the CWA.
- **U.S. Fish and Wildlife Service**
 - a) Consultation under Section 7 of the Federal Endangered Species Act (initiated by U.S. Army Corps of Engineers with regard to the issuance of a Section 404 permit) for potential adverse affects to federally listed species or critical habitat.

Section 4 – Environmental Effects Found Not to be Significant and Notice of Preparation Comment Letters

The California environmental Quality Act (CEQA) provides that a DEIR shall focus on all potentially significant effects created by the project onto the environment, discussing the effects with emphasis in proportion to their severity and probability of occurrence.

4.1 Effects Found not to be Significant as Part of the EIR Process

Section 21100(c) of the Public Resources Code states that an EIR shall 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 EIR. Section 15128 of the *CEQA Guidelines* adds, “Such a statement may be contained in an attached copy of an Initial Study.” Since an Initial Study was not prepared with the Notice of Preparation (NOP), the EIR evaluated all of the possible significant effects of the Project in accordance with Appendix G of the State *CEQA Guidelines*.

Section 5 of the DEIR concludes that the proposed Project would not result in significant impacts to the following issue areas or thresholds within areas, as listed below:

4.1.1 Aesthetics

- *have a substantial adverse effect on a scenic vista;*
- *substantially degrade the existing visual character or quality of the site and its surroundings;*
- *substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; or*
- *create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*

4.1.2 Agricultural and Forestry Resources

- *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;*
- *conflict with existing zoning for agricultural use, or a Williamson Act contract;*
- *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 Resources Code section 51104 (g)); or*
- *result in the loss of forest land or conversion of forest land to non-forest use;*
- *involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use;*

4.1.3 Air Quality

- *conflict with or obstruct implementation of the applicable air quality plan; or*
- *create objectionable odors affecting a substantial number of people.*

4.1.4 Biological Resources

- *have a substantial adverse effect, either directly or through habitat modifications, or 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 the U.S. Fish and Wildlife Service;*
- *have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or by the California Department of Fish and Game or US Fish and Wildlife Services;*
- *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;*
- *interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native reside not migratory wildlife corridors, or impede the use of native wildlife nursery sites; or*
- *conflict with any local policies or ordinances protection biological resources, such as a tree preservation policy or ordinance.*

4.1.5 Cultural Resources

- *create a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;*
- *cause a substantial adverse change in the significance or an archaeological resource as fined in Section 15064.5;*
- *directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or*
- *disturb any human remains, including those interred outside or formal cemeteries.*

4.1.6 Geology and Soils

- *expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) strong seismic ground shaking; iii) seismic-related ground failure, including liquefaction; iv) landslides;*
- *result in substantial soils erosion or loss of topsoil;*

- *be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;*
- *be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial risks to life or property; or*
- *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.*

4.1.7 Greenhouse Gas Emissions

- *generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or*
- *conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

4.1.8 Hazards and Hazardous Materials

- *create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*
- *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;*
- *emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;*
- *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;*
- *be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project result in a safety hazard for people residing or working in the project area;*
- *be 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;*
- *impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or*
- *expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.*

4.1.9 Hydrology/Water Quality

- *violate any water quality standards or waste discharge requirements;*
- *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);*
- *substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;*
- *substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*
- *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*
- *Would the proposed project otherwise substantially degrade water quality;*
- *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;*
- *place within a 100-year flood hazard area structures which would impede or redirect flood flows;*
- *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; or*
- *inundation by seiche, tsunami, or mudflow.*

4.1.10 Land Use Planning

- *physically divide an established community;*
- *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; or*
- *conflict with any applicable habitat conservation plan or natural community conservation plan.*

4.1.11 Mineral Resources

- *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; or*
- *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.*

4.1.12 Noise

- *result in the 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;*
- *result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;*
- *result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;*
- *result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;*
- *be 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; or*
- *be located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.*

4.1.13 Population and Housing

- *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);*
- *displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;*
- *displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.*

4.1.14 Public Services

- *result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools parks, or other public facilities.*

4.1.15 Recreation

- *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; or*
- *include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

4.1.16 Transportation/Traffic

- *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;*
- *substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);*
- *result in inadequate emergency access; and/or*
- *conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.*

4.1.17 Utilities and Service Systems

- *exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;*
- *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;*
- *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;*
- *have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;*
- *be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;*
- *comply with federal, state, and local statutes and regulations related to solid waste; or*
- *increase demand for other utility and service systems, the construction of which could cause significant environmental effects.*

4.2 NOP Comment Letters

The 30-day public review period for the NOP began on July 20, 2012. However, in the NOP that was published on July 20, 2012, reference was made to the availability of the Specific Plan on the City's website. Due to technical reasons, the Specific Plan was not posted and not made available from July 20, 2012. Thereafter, the Specific Plan was posted on the City's website as of July 25, 2012. Due to this delay, the public review period was extended to August 23, 2012. The agencies or other interested parties that commented on the NOP, a brief summary of the issues raised, and reference to where the issues are discussed in the EIR are presented in **Table 4-A – Summary of Comments Received in Response to the NOP**. Copies of the comment letters are included in Appendix A.

Table 4-A – Summary of Comments Received in Response to the NOP

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
<p>County of San Bernardino, Department of Agriculture/Weights and Measures (July 26, 2012)</p>	<p>This letter indicates that the southern and western boundaries of the Project are adjacent to commercial agriculture (citrus). The agriculture operations use pesticides, fertilizers and loud equipment which will impact the residential components of the Project. The California Civil Code Section 3482.5 specifically exempts agriculture operations from being a public nuisance when adjacent land uses change, therefore any mitigation of the pesticide exposure, smells, flies, dust and noise should be borne by the proposed development. Adequate setbacks and noise barriers may mitigate the issues.</p> <p>In addition, the San Bernardino County Flood Control property along Newport Road and the Santa Ana River has historically been used by beekeepers to maintain large numbers of bee colonies. Beekeeping is an agriculture operation protected by the aforementioned code. Mitigation measures could include the prohibition of pools, spas and other outdoor sources of water, restricting all irrigation to the night. A ten foot high wall between the areas used by the beekeepers and the development would also help mitigate the problem.</p>	<p>Potential impacts to agricultural resources are addressed in Section 5.2, Agriculture Resources of this DEIR.</p>
<p>County of San Bernardino, Department of Public Works (August 1, 2012)</p>	<p>This letter requests that a copy of the DEIR and any technical studies and/or reports be submitted to this Department for further review when available, at which time the Department will comment on existing and/or future Flood Control District facilities or County roads.</p>	<p>No comments to be addressed in the DEIR were identified in the NOP comment letter.</p>

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
State of California, Governor's Office of Planning and Research (August 1, 2012)	This letter acknowledges that the Lead Agency corrected some information regarding the project and that the review period has extended to end on August 23, 2012. All other project information remains the same.	The NOP process is discussed in Section 2, Introduction.
City of San Bernardino Municipal Water District (August 8, 2012)	This letter recommends that the DEIR: 1) include analysis to address water reclamation and waste disposal as specified in the Joint Powers Agreement (JPA); 2) include analysis of the flows that will be generated and treated within the Project and the flows that the Department will be responsible for if the Project includes water reclamation and recycled water facilities; 3) address the role of the Inland Empire Wastewater Advisory Board as it relates to the provision of sewer collection and treatment facilities; and 4) address any proposed revisions to the JPA that would be necessary to address a separation if the Project proposes to establish separate infrastructure to serve the Project.	Potential impacts to water and sewer facilities are addressed in 5.17, Utilities and Service Systems.
Native American Heritage Commission (July 24, 2012)	This letter recommends: 1) that the lead agency request that the NAHC do a Sacred Lands File search as part of the careful planning for the proposed Project; that the lead agency make contact with the list of Native American Contacts, to determine if the proposed Project might impact Native American cultural resources and to obtain their recommendations concerning the proposed Project; and 3) 'avoidance' of Native American cultural resources as referenced by CEQA Guidelines Section 15370(a). The letter also referenced several	Potential Impacts to cultural resources are addressed in Section 5.5 (Cultural Resources) of this DEIR. The Project is not subject to NEPA. SB 18 consultation was initiated by the City on June 19, 2013 and the Soboba Band of Luiseno Indians responded in a letter dated September 3, 2013 indicating no specific concerns.

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
	statutes for informational purposes and stated applicable regulations to be complied with if the Project were subject to the National Environmental Policy Act (NEPA).	
Steve Humeston (August 8, 2012)	This letter expressed concern over traffic and water supply for the Project.	Potential impacts to water supply and traffic are addressed in Section 5.9, Hydrology and Water Quality and Section 5.16, Transportation/Traffic, of the DEIR, respectively.
California Department of Toxic Substances Control (August 10, 2012)	This letter recommends: evaluation of whether conditions within the Project area may pose a threat to human health or the environment; 2) identification of the mechanism to initiate any required investigation and/or remediation for any site within the Project area that may be contaminated, and the government agency to provide appropriate regulatory oversight; 3) the findings of any investigations, including a Phase I or II Environmental Site Assessment Investigation be summarized; 4) summarizing the results of any investigations conducted for the presence of other hazardous chemicals, mercury, and asbestos containing materials; 5) soil samples and the measures to properly dispose of contaminated on-site or imported soils; 6) if necessary, a health risk assessment to determine if there are, or will be, any release of hazardous materials that may pose a risk to human health or the environment; 7) proper investigation and remediation of soils for related waste/residue if the site was used for agricultural, livestock, or related activities; 8) proper management of hazardous wastes, if generated by the Project;	The Project's potential impacts related to hazardous materials are addressed in Section 5.8, Hazards and Hazardous Materials of this DEIR.

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
	and 9) the department can provide cleanup oversight, if necessary.	
California Department of Transportation (August 14, 2012)	This letter requests that a traffic study be prepared to address specific Project impacts to SR38 and to identify pertinent mitigation measures. Specifically, it was recommended that: 1) the format used in the traffic study should be consistent with the Caltrans Guide for the Preparation of Traffic Impact Studies; 2) the analysis should include existing and future volumes, turning movements and travel speeds along the State-right-of-way to identify mitigation for SR-38; 3) if traffic signal installation or modification is proposed within the State right-of-way, signal warrant analysis in accordance with State standards may be required; and 4) the analysis should also address impacts to any affected local and regional transportation facilities.	Potential impacts to SR 38 and Project-generated traffic are addressed in Section 5.16, Transportation/Traffic of this DEIR.
South Coast Air Quality Management District (August 15, 2012)	The district requests that the air quality analysis be prepared in accordance with all SCAQMD methodology and provide recommended mitigation measures. Copies of all files related to air quality and greenhouse gas analyses were also requested with the DEIR.	Potential impacts to air quality are addressed in Section 5.3, Air Quality and a copy of the Air Quality Technical Report is included in Appendix C of this DEIR. Potential impacts to greenhouse gas emissions are addressed in Section 5.7, Greenhouse Gas Emissions and a copy of the Climate Change Technical Report is included in Appendix G of this DEIR.
California Department of Water Resources (August 16, 2012)	This letter indicates that the proposed project has the potential to impact DWR's California Aqueduct right-of-way and thus may require an Encroachment Permit from DWR prior to the start of construction. DWR requests copies of any	Potential impacts to water quality are addressed in Section 5.9, Hydrology and Water Quality.

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
	<p>subsequent environmental document or preliminary development plans when it becomes available for public review.</p>	
<p>San Bernardino Valley Water Conservation District (Undated letter received August 20, 2012)</p>	<p>This letter recommends that the DEIR provide a detailed evaluation of alternative and mitigations related to hydrology/water quality and biological resources. The district hopes recreation spaces will be provided to reduce trespass.</p> <p>Specifically, the DEIR should analyze and mitigate impacts from stormwater so as not to degrade water quality in Mill Creek and the Santa Ana River.. Additionally, any changes in the quantity and timing of water release which would reduce the potential for groundwater recharge should be evaluated.</p> <p>The DEIR should evaluate any impacts on species which are the subject of the San Bernardino Area Wash Plan, such as the Kangaroo Rat and others.</p>	<p>Potential impacts to water quality from stormwater and groundwater recharge are addressed in Section 5.9, Hydrology and Water Quality. Potential impacts to biological resources are addressed in Section 5.4, Biological Resources, of this DEIR. Description of the Project’s proposed parks and open space areas are provided in Section 3, Project Description of this DEIR.</p>
<p>Steve Loe (August 21, 2012)</p>	<p>This letter expresses unhappiness with the setup and public notification of the proposed Project. This letter also requests that the California Department of Fish and Game United States Fish and Wildlife and the United States Forest Service are notified of the proposed Project.</p> <p>This letter suggests that the Project could be potentially damaging to various threatened, endangered and imperiled species. Potentially damaged resources and areas need to be analyzed in the DEIR and alternatives that provide protection to these resources should also be</p>	<p>Potential impacts to biological resources are addressed in Section 5.4, Biological Resources, of this DEIR. The NOP was sent to the California Department of Fish and Game, U.S. Fish and Wildlife Service, and San Bernardino National Forest Service. The commenter has been added to the distribution list for all Project-related notices.</p>

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
	evaluated.	
Albert Kelley (August 21, 2012)	<p>This letter expresses unhappiness with the public notification of the proposed Project.</p> <p>This letter suggests that the Project could be potentially damaging to various threatened and endangered species. This letter also suggests that the Project could result in significant impacts to life and property as a result of flooding, wildland fires and water quality.</p>	<p>Potential impacts to biological resources are addressed in Section 5.4, Biological Resources, of this DEIR. Potential Impacts related to hazards, including wildland fires are addressed in Section 5.9, Hazards and Hazardous Materials. Potential Impacts to water quality are addressed in Section 5.9, Hydrology/Water Quality.</p>
Center for Biological Diversity, San Bernardino Valley Audubon Society, and Sierra Club (August 21, 2012)	<p>This letter stated the following impacts to biological resources need to be evaluated, specifically impacts related to: listed species; locally rare species; surveys and mapping; direct, indirect and cumulative impacts; wildlife movement; mitigation and restoration; and fuel modification and fire clearance.</p> <p>The letter also indicated impacts to: recreation related to compatibility; aesthetics related to viewshed intrusion and light and glare; air quality related to attainment goals and mitigation; greenhouse gas emissions related to source categories, mitigation and a carbon-neutral alternative; traffic related to nearby freeways and major roadways, and cumulative traffic volumes; energy conservation; water quality, water supply, flooding; cultural resources; geology; cumulative impacts; alternatives; environmental baseline; and project need should be addressed.</p>	<p>Potential impacts to all of the identified biological resources issues are addressed in Section 5.4, Biological Resources, of this DEIR. Potential impacts to viewsheds and lighting and glare are addressed in Section 5.1, Aesthetics. Potential air quality impacts are addressed in Section 5.3, Air Quality, of the DEIR. Potential impacts to greenhouse gas emissions are addressed in Section 5.7, Greenhouse Gas Emissions. Potential traffic impacts are addressed in Section 5.16, Transportation/Traffic, of the DEIR. Energy conservation is addressed in Section 5.7, Greenhouse Gas Emissions, of the DEIR. Potential impacts to water quality, water supply, and flooding are addressed in Section 5.9, Hydrology/Water Quality of this DEIR. Potential impacts to cultural resources are addressed in Section 5.5. Geology is addressed in Section 5.6 of the DEIR; cumulative impacts are addressed in Section 7, Other CEQA Topics; alternatives are addressed Section 8 of the DEIR. The environmental baseline is discussed in Section 3, Project Description and each respective topic</p>

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
		within Section 5 of this DEIR. There is no requirement under CEQA to provide a discussion of the need for a project.
San Bernardino National Forest (Undated letter received August 22, 2012)	The Forest would like to assist and cooperate on this Project to reach the highest level of compatibility for development and protection of the following existing values: fire and fuels management; biology; watershed management and protection; and recreation.	Potential impacts to biological resources are addressed in Section 5.4, Biological Resources, of this DEIR. Potential impacts to fire and fuels management are addressed in Section 5.8, Hazards and Hazardous Materials. Potential impacts to watershed management and protection are addressed in Section 5.9, Hydrology/Water Quality. Potential impacts to recreation are addressed in Section 5.15, Recreation.
Tri-County Conservation League (August 22, 2012)	This letter recommends the DEIR: evaluate a range of alternatives; fully mitigate any and all unavoidable impacts to on-site and nearby natural habitat; address natural hazards from earthquake, wildfire, and flooding; address emergency response times and facility location; and address regional air pollution, greenhouse gas emissions, traffic, water supply and quality, and solid waste.	Potential impacts are addressed in the DEIR as follows: <ul style="list-style-type: none"> • Section 8, Alternatives • Section 5.4, Biological Resources • Section 5.6, Geology and Soils (for earthquake hazard) • Section 5.8, Hazards and Hazardous Materials (for wildfire risk and emergency response plan/evacuation plan) • Section 5.9, Hydrology/Water Quality (for flooding impacts, water supply and water quality) • Section 5.14, Public Services (for emergency facility location and emergency response times) • Section 5.3, Air Quality • Section 5.7, Greenhouse Gas Emissions • Section 5.16, Transportation/Traffic • 5.17, Utilities and Service Systems (including solid waste)

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
U. S. Fish and Wildlife Service (August 23, 2013)	This letter requests the following issues be addressed in the DEIR with respect to biological resources: listed species and critical habitat; hydrology, water quality, and infrastructure; earthquake and fire hazards; bridge or road expansions; trails, and mitigation for impacts.	Potential impacts are addressed in the DEIR as follows: <ul style="list-style-type: none"> • Section 5.4, Biological Resources • Section 5.6, Geology and Soils (for earthquake hazard) • Section 5.8, Hazards and Hazardous Materials (for wildfire risk) • Section 5.9, Hydrology/Water Quality (for hydrology, flooding impacts, runoff, water supply and water quality) • Section 5.15, Recreation • Section 5.16, Transportation/Traffic • 5.17, Utilities and Service Systems
City of Redlands (August 23, 2012)	This letter requests the following to be thoroughly evaluated in the DEIR: cumulative traffic impacts on the City of Redlands, including construction traffic and school traffic; aesthetics; water quality; biological resources; air quality; and greenhouse gases.	Potential impacts are addressed in the DEIR as follows: <ul style="list-style-type: none"> • Section 5.1, Aesthetics • Section 5.3, Air Quality • Section 5.4, Biological Resources • Section 5.7, Greenhouse Gas Emissions • Section 5.9, Hydrology/Water Quality • Section 5.16, Transportation/Traffic
Patrick Sandford (Undated letter received August 25, 2012)	This comment letter requested the following information be evaluated in the DEIR: 1) cumulative traffic on Greenspot Road; 2) impacts from not connecting Greenspot Road to Bryant Street; 3) realignment of Greenspot Road; 4) need for schools; and 5) proposed amenities within the fire station.	Potential impacts to traffic are addressed in Section 5.16, Transportation/Traffic, of this DEIR. Potential impacts related to schools are addressed in Section 5.14, Public Services. Section 3, Project Description includes details of the proposed Project and amenities.

Commenting Agency (Date of Letter)	Summary of Comment	Location in DEIR in which Comment is Addressed
Charles Brewer, Marilyn Brewer (Undated letter received September 4, 2012)	This comment letter requests consideration of the Project's land use compatibility with surrounding uses, traffic, and public safety in proposed parks resulting from rattlesnakes known to be in the area.	Potential impacts related to compatibility are addressed in Section 5.10, Land Use and Planning, potential traffic impacts are addressed in Section 5.16, Transportation/Traffic, and Section 5.4 of this DEIR addresses biological resources.

SECTION 5 – Environmental Impact Analysis

The purpose of this Draft EIR (or DEIR) is to evaluate the potential environmental effects of the proposed Harmony Specific Plan.

Sections 5.1 through 5.17 of the DEIR examine the potential environmental impacts associated with implementation of the proposed Project. The impact analyses are organized into the following issues:

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

5.1 Technical Studies

Technical studies in the areas of agricultural resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards/hazardous materials, hydrology/water quality, mineral resources, noise, transportation/traffic, and utilities and service systems were prepared, providing detailed technical analyses that were used in this DEIR. These documents are identified in the discussion for the individual environmental issue, and included as technical appendices on a CD attached to the DEIR.

5.2 Analysis Format

The DEIR assesses how the proposed Project would impact these issue areas. Each environmental issue addressed in this Draft EIR is presented in terms of the following subsections:

- **Setting:** Provides information describing the existing setting on or surrounding the Project site which may be subject to change as a result of the implementation of the Project. This setting describes the conditions that existed when the NOP was sent to responsible agencies and the State Clearinghouse.
- **Thresholds of Significance:** Provides criteria for determining the significance of Project impacts for each environmental issue.
- **Related Regulations:** Provides a discussion of the applicable regulations with respect to each environmental issue.

- **Project Design Features:** Provides a discussion of the Project design features with respect to each environmental issue.
- **Environmental Impacts Before Mitigations:** Provides a discussion of the characteristics of the proposed Project that may have an effect on the environment; analyzes the nature and extent to which the proposed Project is expected to change the existing environment, and whether or not the Project impacts meet or exceed the levels of significance thresholds.
- **Proposed Mitigation Measures:** Identifies mitigation measures to reduce significant adverse impacts to the extent feasible.
- **Summary of Project-Specific Environmental Effects After Mitigation Measures are Implemented:** Provides a discussion of significant adverse environmental impacts that cannot be feasibly mitigated or avoided, significant adverse environmental impacts that can be feasibly mitigated or avoided, adverse environmental impacts that are not significant, and beneficial impacts.
- **Summary of Cumulative Environmental Effects After Mitigation Measures are Implemented:** Provides a discussion of cumulative environmental impacts based on either 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 (“the list method”); or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact (“summary of projections method”).

5.1 Aesthetics

This section evaluates the Project's potential aesthetic and visual impacts.

5.1.1 Setting

From the perspective of CEQA, the term "aesthetics" pertains to the perceived visual quality of an area characterized by one or more visual elements such as an open space, scenic views, and/or architecture. Aesthetically significant features can occur in a diverse array of environments, ranging from urban centers to rural agricultural lands to natural woodlands. A project can have significant impacts on visual quality if it negatively affects the aesthetically significant features by altering them in part or wholly, e.g., by destroying vegetation integral to a scenic vista or by constructing a building in an architectural style that conflicts with the existing setting.

5.1.1.1 Existing Landform/Topography

The Project site is at the foothills of the San Bernardino Mountains, whose rugged and dramatic topography of the San Bernardino Mountains is the predominant natural and visual resource in the area of the Project site. These mountains are located north and east of the Projects site and extend upward to approximately 7,000 feet above mean sea level (amsl). The open stretches along the Santa Ana River, which forms the Project site's northwestern boundary, is another scenic feature that contributes to the visual character of the Project area and the City of Highland.

Elevations within the site range from approximately 2,700 feet above mean sea level (amsl) in the northeast corner to approximately 1,800 feet amsl in the southwest corner.

At the toe of the mountains is a steep, west-trending drainage known as Morton Canyon. South of the Morton Canyon is a prominent west trending, steep-sided ridge known as Morton Ridge. The site slopes southward from Morton Ridge to the northern bank of Mill Creek. The site slopes more gently to the south from the base of the ridge to the bank of Mill Creek, at the southern limit of the site.

The southeastern portion, here defined as the area east of Emerald Avenue, and south of a line extended eastward from Tres Lagos Street, in the northern part of this area, is a series of long narrow ridges separated by steep-sided valleys. The area to the south of the ridges and valleys flattens abruptly into a large, relatively level area that appears to have been part of the Mill Creek flood plain in the past.

The Mill Creek wash crosses onto the southeastern portion of the Project site. This area has a very uneven, hummocky surface containing large quantities of boulders and cobbles.

5.1.1.2 Character

The early character of the Project site was of private and commercial agricultural ranches. By the 1960s agricultural activities on the site had declined considerably, and by the 1990s most of the groves and crops had been abandoned. Currently, no standing structures related to the area's agricultural history remain, but foundations, roads, irrigation systems, and wells attest to the activities of the past 100 years.

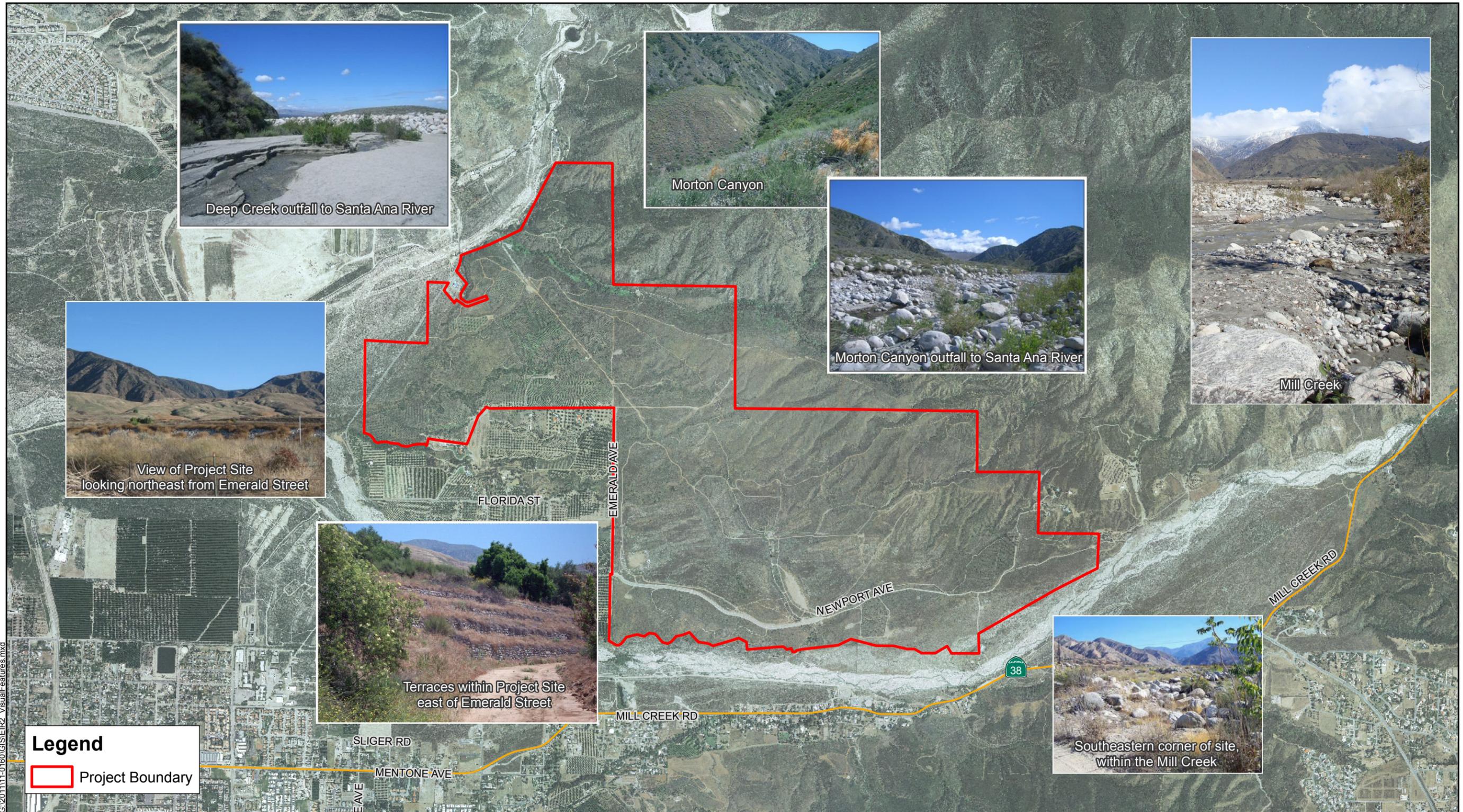
In the early 1990s, the site's character, topography, and natural drainage features were again altered when it became a borrow site for materials used to construct the Seven Oaks Dam. Approximately six million cubic yards of material was excavated from the property for the construction of the 550-foot-high Seven Oaks Dam. The excavated area of the Project site was known as the borrow site and as per the San Bernardino Mining/Reclamation Plan, the conditional use permit entitled excavation of earthen material on 585 acres, about 35 percent of the total Project area. After completion of the dam, borrow activities ceased and the property has been vacant since that time. Existing site conditions are depicted in **Figure 5.1-1 – Visual Features of the Project Site.**

The 1,657-acres of vacant land have some fallow, remnant orange groves, foundations, roads, irrigation systems, and wells scattered over the site. Active citrus groves containing scattered rural residences are located southwest of Emerald Avenue and Tres Lagos Street. Several large houses are located immediately northeast of the site.

5.1.1.3 Scenic Highways

According to the California Scenic Highway Mapping System of Caltrans, the Project site is not located on or near a major state-designated scenic highway (Caltrans). However, approximately 3.8 miles of SR-210 from SR-330 in Highland to the I-10 in Redlands are eligible State scenic highways. This 3.8 mile segment of SR-210 is approximately six miles west of the Project site. The portion of the I-10 from SR-38 east to SR-62 near the unincorporated area of Whitewater is also designated eligible. The I-10 is approximately 4.5 miles south of the Project site. The SR-38 located south of the Project site is also designated as eligible between the I-10 in Redlands and SR-18 near Fawnskin.

Additionally, the General Plan Circulation Element calls for the designation of Boulder Avenue and Greenspot Road as Scenic Highways. Though these streets are not designated "scenic roadways," the City treats them as such and applies policies from Goal 3.3 of the General Plan, which is listed below in Section 5.1.3.3.



G:\2011\11-0160\GIS\IEIR2_VisualFeatures.mxd

Source: San Bernardino County ISD, 2010; McKenna et al. Phase I Cultural Resources Investigation, October 31, 2011; RBF Consulting, Habitat Assessment, September 2011; and WEBB November 2011



0 1,000 2,000 3,000 4,000 5,000 Feet

Figure 5.1-1 – Visual Features of the Project Site
Harmony Specific Plan Draft EIR

5.1.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to aesthetics may be considered potentially significant if the Project would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; and/or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.1.3 Related Regulations

5.1.3.1 Federal

No federal regulations are applicable to the proposed Project with respect to aesthetics.

5.1.3.2 State

California Scenic Highway Program

California's Scenic Highway Program was established in 1963 to "preserve and protect California's highway corridors from change which would diminish the aesthetic value of lands adjacent to highways." (California Streets and Highways Code, Section 260). A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view.

The State Scenic Highway System includes a list of highways that are either eligible for designation as a scenic highway or have been so designated. The status of a state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program (ordinance), applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway (Caltrans 2008). Official scenic highway status places no restrictions for making improvements on scenic highways. However, Caltrans works with appropriate agencies to coordinate transportation proposals and maintenance activities and to ensure the protection of scenic corridors to the maximum extent feasible. To help ensure scenic corridor protection, the following requirements apply for areas that have beneficial scenic highway status:

- 1) Regulation of land use and density of development;
- 2) Detailed land and site planning;
- 3) Control of outdoor advertising (including a ban on billboards);
- 4) Careful attention to and control of earthmoving and landscaping; and
- 5) Careful attention to design and appearance of structures and equipment.

5.1.3.3 Local

City of Highland General Plan – Circulation Element

Goal 3.3: Preserve and enhance uniquely scenic or special visual resource areas along appropriate routes for the enjoyment of all travelers.

Policies

- 1) Designate the following roadways as Scenic Highways and establish guidelines that protect visual resources in the community and allow for the development of additional recreational opportunities:
 - Boulder Avenue
 - Base Line (east of City Creek)
 - Palm Avenue
 - Greenspot Road
 - Church Street
 - Highland Avenue (east of City Creek)
- 2) Attractively landscape and maintain Highland's Secondary Highways, Special Secondary Highways, Major Highways, Primary Arterials, and Modified Primary Arterials, and prepare/implement distinctive streetscape improvement plans.
- 3) Take such actions as may be necessary to protect scenic routes, including but not limited to:
 - Regulation of land use and intensity of development;
 - Detailed land use and intensity of development;
 - Control of outdoor advertising;
 - Careful attention to and control of grading and landscaping; and
 - Careful design and maintained appearance of structures and equipment.

City of Highland General Plan – Conservation and Open Space Element

General Plan policies related to the preservation of views and vistas and hillside development standards include:

- Incorporate view corridor planning in related development efforts and capital improvement programs. (Policy 5.1-1)
- Along roadway-based view corridors, frame views of attractive features of the natural and built environment with appropriately placed median and street tree landscaping. Use of fire-resistant vegetation and ample spacing between trees and shrubs is encouraged to reduce the spread of fires. (Policy 5.1-2)

- Enforce hillside development standards that call for natural contour grading, environmentally sensitive design, shape and siting techniques, and fire-retardant building materials. (Policy 5.1-3)
- Work with San Bernardino County and the City of San Bernardino to develop consistent regulations for the protection of ridgelines, slope areas, and hilltops within the surrounding foothill communities. (Policy 5.1-4)
- Require that all excess excavated material (waste materials) be properly removed and disposed of or otherwise reincorporated into the development plan without compromising natural contours or aesthetic qualities of the site. (Policy 5.1-5)
- Require that hillside development be located below ridgelines with the structures themselves and accompanying landscaping concealing cut slopes and grading. (Policy 5.1-6)
- Encourage developers in high slope gradient areas to use raised floor systems and stepped footages to leave slope contours in a more natural state. (Policy 5.1-7)
- Retain existing vegetation within or alongside hillside development areas except where such vegetation poses a risk to buildings in high fire hazard zones. (see Goal 6.5, Public Health and Safety Element). Use native, fire resistant, drought tolerant plant material in fuel modification areas when existing vegetation cannot be retained. (Policy 5.1-8)
- Preserve mature trees, natural hydrology, native plant materials, and areas of visual interest. (Policy 5.1-9)
- Work with San Bernardino County and the City of San Bernardino to protect scenic resources located outside of the city, such as prominent ridges, slopes, and hilltops. (Policy 5.1-10)
- Enact provisions in the municipal code to minimize soil erosion, restore natural drainage surfaces, attenuate slope instability, and reduce the amount of impermeable surfaces. (Policy 5.1-11)
- Index the percentage of impermeable surfaces to slope gradient. (Policy 5.1-12)
- Develop different water-retention standards for single dwellings and larger tracts. Subdivisions should have overall implementation and water-retention strategies. (Policy 5.1-13)

City of Highland General Plan – Community Design Element

General Plan policies to create a unified and attractive community identity include:

- Continue to designate primary and secondary entry points for gateway monumentation into the City. (Policy 10.1-1)
- Incorporate the City logo in public spaces and public facilities. (Policy 10.1-2)
- Identify, preserve and enhance view corridors of major landmarks, community facilities, and natural open space in the planning and design of all public and private projects. (Policy 10.1-3)
- Pursue unifying streetscape elements for major corridors, including coordinated streetlights, landscaping, public signage, street furniture, and hardscaping. (Policy 10.1-5)

- Ensure that the design of all public facilities fits well into its surroundings and incorporates symbolic references to the City of Highland. (Policy 10.1-6)

City of Highland Municipal Code (HMC)

The City of Highland Land Use and Development Code (Title 16 of the Municipal Code) identifies land use categories, development standards, and other general provisions that ensure consistency between the City's General Plan and proposed development projects. Listed below are provisions within the City's Land Use and Development Code that are relevant to the proposed Project.

Chapter 16.40 (General Development Standards), Section 16.40.160 (Lighting)

Attention to the methods recommended in this section, as well as those listed in the latest Lighting Handbook of the Illuminating Engineering Society of North America (IESNA), lighting systems can deliver quality outdoor lighting without being installed haphazardly and affecting the nighttime environment or impacts surrounding uses.

Lighting Design Standards

1. Parking areas of five or more spaces shall have an average of one-half foot-candle of illumination per square foot of parking area for visibility and security during hours of darkness.
2. Each parking area of five or more spaces existing prior to the effective date of the ordinance codified in this section which is enlarged, reconstructed, altered, or changed from its previous configuration shall be subject to the above illumination requirements.
3. Wiring for illumination shall be underground.
4. The following forms of outdoor lighting usage shall be prohibited between midnight and dawn:
 - a. The operation of searchlights for advertising purposes; and
 - b. The illumination of outdoor public recreational facilities, unless a specific recreational activity requiring the lighting is already in progress. All lighting shall be on a time clock or photo-sensor system. Security lighting shall be provided.
5. All single-family, duplex and triplex residential dwelling units shall be equipped with security lighting affixed to the exterior of each garage and above the exterior of each front and rear door.
 - a. Lighting shall be activated by motion sensors.
 - b. Lights shall be installed a minimum of eight feet above grade and shall be hard-wired into the electrical power source.
 - c. Lights shall be shielded and directed away from surrounding residential uses and shall not blink, oscillate or be of unusually high intensity.
6. Exterior lighting shall be shielded or recessed so that direct glare and reflections are contained within the boundaries of the parcel.

7. Security lighting should be designed to limit excessive lighting and glare. Avoid mercury vapor. Security lighting shall be compatible with other on-site lighting.
8. Parking lot lighting should not spill over to adjacent properties. No glare should be visible from residential properties.
9. A decorative and functional parking lot light standard should be used throughout the city.
10. Although taller light standards limit the number of standards needed to illuminate the site, they also cause indirect light spillover to adjacent properties. Shorter lighting standards designed to illuminate specific areas combined with accent lighting, such as landscape lighting and building up-lighting, is desirable. Hot spots shall be carefully reviewed to evaluate individual lighting for compatibility and impacts both for on-site and off-site lighting.
11. No light shall blink, flash, or be of unusually high intensity or brightness, nor should it be used for backlighting of awning signage.
12. All light fixtures shall be appropriate in scale, intensity and height to the use they are illuminating.
13. Lighting fixtures shall be compatible with the surrounding area.
14. Lighting shall be used to enhance aesthetic quality as well as safety, such as the use of accent/feature lighting. Exposed neon accent lighting is discouraged unless evaluated and approved by the design review board.
15. Avoid placement of light fixtures that will directly light into adjacent structures or cause glare that may inhibit drivers.
16. Outdoor light poles within residential areas, except for street lighting, shall not exceed 12 feet in height. Such lighting shall be designed to project downward, and shall not create glare on adjacent properties.
17. Lighting standards shall be consistent with Tables 16.40.160.A and B unless modifications can be justified by a certified lighting engineer and a photometric plan is required and approved by the design review board.
18. Security lighting standards shall be consistent with Table 16.40.160.C unless modifications can be justified by a certified lighting engineer and a photometric plan is required and approved by the design review board.

Table 16.40.160.A – Site Lighting – Commercial/Industrial Foot-Candles

Lighting Type	Maintained Foot-Candles	Uniformity Avg. : Min.	Average Foot-Candle
High activity, e.g., regional shopping centers, fast food facilities, major athletic/civic/cultural events	0.9 min.	5.9 : 1	5.3

Lighting Type	Maintained Foot-Candles	Uniformity Avg. : Min.	Average Foot-Candle
Medium activity, e.g., community shopping centers, office parks, hospitals, commuter lots, cultural/civic/recreational events	0.6 min.	5.9 : 1	3.5
Low activity, e.g., neighborhood shopping, industrial employee parking, school, church parking	0.2 min.	5.9 : 1	1.1
Nonresidential walkways and bikeways	0.5 min.	5.9 : 1	2.9
Building entrances	5.0 avg.	N/A	N/A

Table 16.40.160A allows higher foot candles (up to 5.0 at entrances) and 16.40.160C allows residential light height limit to be up to 30'. However, in no case should illumination exceed 0.5 foot-candles measured at the property line; and the amount of illumination projected onto a residentially zoned property or use from another property should not exceed 0.1 foot-candle at the property line.

Table 16.40.160.B – Site Lighting – Commercial/Industrial Mounting Heights

Lighting Type	Average Mounting Height	Average Mounting Range
Vehicular Use	34'	20' – 50'
General Site	25'	20' – 30'
Pedestrian (see security area below)	12'	10' – 15'
Feature	N/A	0' – 3'6"

Notes: In the application of the above standards, the following regulations should apply:

1. Illumination levels should be defined as maintained horizontal foot-candles on the task. For example, the pavement or area surface.
2. Uniformity ratios dictate that average illumination values should not exceed minimum values by more than the product of the minimum value and the specified ratio. For example, in the case of the commercial parking high activity, the average foot-candles should not be in excess of 5.3 (0.9 x 5.9).
3. In no case should illumination exceed 0.5 foot-candles measured at the property line; and the amount of illumination projected onto a residentially zoned property or use from another property should not exceed 0.1 foot-candle at the property line.
4. Lighting standards in parking areas should be located no more than 100 feet apart unless other types of lighting fixtures are used as approved by the design review board.
5. No parking lot light standard shall exceed the height of the predominant roofline of the primary building on site.
6. Lamp types and colors should be in harmony with other lamps in the community, any special circumstances existing on the site, and surrounding installations. Lamp types should be consistent with the task and setting, and shall not create a mix of colors unless otherwise approved by the design review board.

Table 16.40.160.C – Security Lighting

Walkways	Average Area: (Foot-Candle)	Security Area (Foot-Candle)	
		Low Mount: 9' to 15'	High Mount: 15' to 30'
Commercial	0.9	2.0	4.0
Intermediate	0.6	1.0	2.0
Residential	0.2	0.4	0.8

(Ord. 332 § 4, 2008; Ord. 171 § 10.160, 1994)

Chapter 16.40 (General Development Standards); Section 16.40.260.A (Reflective Material)

Roofing materials which will be visible to the public from adjacent streets or property shall be of a nonreflective composition.

Chapter 16.40 (General Development Standards); Section 16.40.440 (Scenic Resources)

- A. *Intent.* The scenic resources regulations are intended to establish development standards which protect, preserve, and enhance the aesthetic resources of the City by incorporating design considerations which minimize interference with the preservation of unique natural resources, roadside views, and scenic corridors. It is also the intent of the scenic resources regulations to implement state and federal programs and regulations regarding scenic highway routes.
- B. *Locational Requirements.* The scenic resources regulations may be applied to the following areas:
 - a. Areas with unique views of the city’s mountain and valley areas or any other aesthetic natural land formations.
- C. *Development Standards.*
 - a. When a land use is proposed within scenic areas, the following criteria shall be used to evaluate the project compliance with the intent of the district:
 - i. *Building and Structure Placement.* The building and structure placement shall be compatible with and shall not detract from the visual setting or obstruct significant views.
 - ii. *Setbacks.* Intensive land development proposals, including, but not limited to, residential facilities, commercial activities and mobile home parks, shall be designed to blend into the natural landscape and maximize visual attributes of the natural vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space parallel to the right-of-way. This represents the visible land area outside the highway right-of-way which may be described as the “view from the road.”

- iii. *Access Drives.* Right-of-way access drives shall be minimized. Developments involving concentrations of commercial activities shall be designed to function as an integral unit with common parking and right-of-way access drives when feasible.
- iv. *Landscaping.* The removal of native vegetation, especially timber, shall be minimized and replacement vegetation and landscaping shall be compatible with the local environment and, where practicable, capable of surviving with a minimum of maintenance and supplemental water. Landscaping and plantings shall not obstruct significant views, either when installed or when they reach mature growth.
- v. *Roads, Pedestrian Walkways, Parking and Storage Areas.* Large scale development shall restrict the number of access points by providing common access roads. Parking and outside storage areas shall be screened from view, to the maximum extent feasible, from either the scenic highway or the adjacent scenic or recreational resource by existing topography, by the placement of buildings and structures, or by landscaping and plantings pursuant to subsection (C)(1)(d) of this section....
- vii. *Grading.* The alteration of the natural topography of the site shall be minimized and shall, to the extent feasible and practical, avoid detrimental effects to the visual setting of the designated area and the existing natural drainage system. Alterations of the natural topography shall be screened from view from either the scenic highway or the adjacent scenic or recreational resource by landscaping and plantings pursuant to subsection (C)(1)(d) of this section.
- viii. *Storage Areas.* Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscaping and plantings pursuant to subsection (C)(1)(d) of this section. (Ord. 171 § 10.440, 1994)

Chapter 16.48 (Performance Standards); Section 16.48.080 (Light and glare). No operation, activity, sign, or lighting fixture shall create illumination which exceeds 0.5 foot candles minimum maintained on any adjacent property, whether the illumination is direct or indirect light from the source. All lighting shall be designed to project downward and shall not create glare on adjacent properties. (Ord. 171 § 12.80, 1994)

5.1.4 Project Design Features

Project design features refer to the ways in which the Project will reduce or avoid potential impacts to scenic resources, lighting and glare through the design of the Project. As discussed earlier in the Project setting and seen in photographs in **Figure 5.1-1**, the specific visual features of the site and their design features are:

1. The San Bernardino Mountains

The San Bernardino Mountains will be preserved as the footprint for development on the 1,657-acre Project site is restricted to 834 acres as depicted in **Figure 3-8 – Proposed Land Use Plan**. The remaining 50 percent of the entire community is reserved for open spaces, parks and recreation. The foothills of the San Bernardino Mountains are kept intact as natural open spaces (approximately 535 acres) and manufactured open spaces (72 acres) are part of the development. Both these open spaces account for roughly 36 percent of the total Project area. Limiting development in these areas, coupled with the height limitations described below preserves the scenic mountain backdrop.

The Mountains will be preserved as permanent open space for conservation, with limited access via Hiking, Trekking and Equestrian trails. These trails in the natural open space follow existing trail alignments that have been established over time by users. Narrow hiking trails offer routes along canyons and ridges into the rich San Geronio wilderness, which towers over Harmony.

2. Santa Ana River

Santa Ana River flowing southwesterly at the Project boundary forms a natural western edge. The River forms a view corridor to the 550-foot high Seven Oaks Dam. Planning areas along the Santa Ana River are natural open spaces, manufactured open spaces, park, and community public facilities with access via New Greenspot Bridge and Road. The Project is designed with mainly open spaces and low footprint development adjacent to the River, to serve as an open space transition area between the River and the locations of the proposed residential units, thereby keeping this view corridor intact.

3. Morton Creek/Morton Ridge

Morton Creek/Morton Canyon is part of the northwesterly watershed in the Project site. These will remain unaltered as Morton Creek and Morton Ridge are preserved as part of Natural Open Space in the Harmony Land Use Plan. Limited access to these features is afforded through the Hiking, Trekking and Equestrian trails discussed above.

4. Mill Creek

Mill Creek is a major drainage feature flowing at the southern boundary of the Project site. It is roughly braided and this area has an uneven, hummocky surface containing large quantities of boulders and cobbles. Planning Area PA-44, approximately 83.7 acres is a planned park overlooking portions of Mill Creek known as Mentone. This park is designed to provide the community with contemplative place to relax and enjoy the natural beauty of Mill Creek. Further, the Lower Loop Road allows for views and travel along Mill Creek. An existing trail along Mill Creek will be refined as a Hiking, Trekking and Equestrian trails that crosses over Garnet Bridge to south of Mill Creek providing trail connections to the Santa Ana Trails System further west.

5. Community Greenways

Planning Areas PA 60 through PA 66 are the Community Greenways that span 111.8 acres. These are linear open spaces that contain drainage swales and off-road walking/biking trails and other landscaped areas. These Community Greenways provide visual and physical connection to parks, the schools, and private recreation (The Parkhouse in PA-18).

Specifically, Project design features include: 1) terraces to allow views to the river corridor along Mill Creek, 2) Fire Protection Zones that include trail rights-of-way and fire resistant landscaping, thereby creating a buffer between the community and the Mountains, 3) Restorative foothills and chaparral plantings, 4) Native riparian plantings, including oaks and sycamores, and 5) Community Greenways that include drainage swales and other landscaped areas (HSP, p. 1-2 & 4-7).

The Specific Plan also includes height limitations to limit impacts to scenic resources. The maximum permitted height within commercial planning areas is 35-feet for the main structure and 50 feet for architectural projections such as towers, cupolas, and other appurtenances (HSP, p. 10-22). The maximum allowable heights for homes would range from 35-feet for Estate and Low-Density Residential to 40-feet for Medium-Density Residential. Medium-High Density Residential is permitted up to 45-feet height and High-Density Residential up to 50-feet high (HSP, p. 10-13). These height limitations are Project design features that are incorporated into the Specific Plan and help ensure that views of the scenic mountain backdrop are preserved.

Further, the Harmony Specific Plan includes design guidelines for residential, neighborhood commercial, and landscape design guidelines. The planning, architectural, and landscape design criteria for the land uses and facilities promote a quality development with an aesthetically pleasing environment that integrates the environmental features into the overall fabric of the neighborhoods. The landscape design guidelines, specifically sets strategies to preserve views (HSP, p. 9-52) into Harmony from surrounding areas, including the City below and the mountains above; internal views from within the community; and views from the community into surrounding areas. The Specific Plan grading plan also responds to the unique site conditions by focusing grading for development in the flatter terrain and preserving the steeper terrain as natural open space.

Residential exterior lighting guidelines are included in Chapter 7 of the Harmony Specific Plan. The level of on-site exterior lighting for single family detached and multifamily attached residential units: (i) shall comply with all applicable requirements of HMC section 16.41.160, (ii) exterior fixtures shall be consistent with the architectural style of the residential unit, (iii) the angle and intensity of exterior lighting should be strategically planned for mobility and safety at night, and (iv) should not be used in excess if its purpose. (HSP, pp. 7-11—7-12). Prior to the issuance of the first building permit in a planning area, an Overall Specific Plan Lighting Plan shall be reviewed by City Staff and approved by the Planning Commission. Performance standards for exterior residential lighting are set forth in Section 7.6 of the Harmony Specific Plan. These standards include:

- Energy conservation shall be emphasized and all systems shall meet the requirements of Title 24, Part 6 Section 150.0(k)9.

- Lighting sources shall be shielded, diffused, or be indirect in order to minimize glare to pedestrians, motorists and adjacent open space.
- Lighting shall only be installed adjacent to buildings, walkways, driveways, or activity areas and focal landscape areas located in close proximity to a residence or activity area.
- Building-mounted lights shall be installed below the eave line and no higher than 14 feet unless used to illuminate a second story entry eave, balcony, or outside stairway or door where in such case it shall be no higher than 8 feet above the floor elevation of the second story.
- The amount of light projected onto any surface shall not exceed 5 foot-candles.
- Low-level pedestrian walkway lights less than 18 inches high and not more than 5 foot-candles in intensity (except low-wattage light sources that do not require an electrical permit) are permitted.
- Pole mounted fixtures on residential lots shall be limited to 8 feet in height above finished grade (does not apply to street lights).
- All security lighting systems shall meet the requirements of Title 24, Part 6 Section 150.0(k)9.
- A lighting and photometric plan shall be submitted for residential parking areas for review and approval by the City Planning Division. (HSP, p. 7-13)

Commercial area lighting guidelines are provided in Chapter 8 of the Harmony Specific Plan. Lighting in the Project's commercial parking areas, pedestrian walkways, loading areas, and other exterior areas will be provided for safety, security, and nighttime ambience. An Overall Specific Plan Lighting Plan shall be reviewed by City Staff and approved by the Planning Commission prior to the issuance of the first building permit in a planning area. Performance standards for commercial lighting are set forth in Section 8.6 of the Harmony Specific Plan. These standards include:

- Approval of a comprehensive lighting plan by the Planning Commission and Highland Police Department.
- Exterior lighting within a parking lot, service area, or other intentionally lit area should be located and designed to minimize direct glare outside of the specific area.
- Lighting sources shall be shielded, diffused, or indirect in order to avoid glare to pedestrians and motorists. Lighting fixtures should be selected and located to confine the area of illumination to within the boundaries of the commercial area.
- Pedestrian paths should be lighted by pole, directed up lighting, or bollard-type fixtures that are in scale with the pedestrian, typically no more than 16' for pole lights or 3' in height for bollards.
- Night lighting and security lighting shall be sensitively designed to ensure that no off-site glare is directed to neighboring uses and that the overall intensity of the site lighting is not excessive.
- Skyward-directed lights designed to attract attention, such as searchlights or moving lights, are prohibited.

- Street lights should be located between street trees to provide light that is uninterrupted by tree canopies. (HSP, pp. 8-7—8-8)

Lighting guidelines and policies for the community park, neighborhood parks, and landscaped areas are provided in Sections 9.8.1, 9.8.2, and 9.11.1, respectively. These guidelines state:

- Lighting included in the Project's proposed community park and neighborhood parks shall be directed downward onto the activity areas to avoid spillover into adjacent land uses.
- Lighting in landscaped areas should be subtle, providing a soft wash of light over illuminated objects such as monumentation.
- Fixture locations should be designed so that light source is not highly visible by pedestrian or vehicular traffic. (HSP, pp. 9-45, 9-55)

5.1.5 Environmental Impacts before Mitigation

The evaluation of aesthetic and visual impacts is subjective in nature. Implementation of the proposed Project would result in the development of 1,657 acres of master planned community that includes residential, commercial, public school, parks and open spaces. The community would provide a wide range of lifestyle choices and opportunities for future residents, from passive and active recreational uses to a commercial center that offers local serving retail and services.

Threshold: *Would the proposed Project: have a substantial adverse effect on a scenic vista; or substantially degrade the existing visual character or quality of the site and its surroundings?*

The rugged and dramatic topography of the San Bernardino Mountains, with elevations of more than 7,000 feet amsl, are the main natural and visual resource in the Project area. They provide dramatic background for views of the Project area. Views to the Project area are further afforded due to open spaces along Mill Creek/Santa Ana River.

View Preservation- Highland General Plan. The Scenic Resources section of the City's General Plan Conservation and Open Space Element states that preserving views of the San Bernardino Mountains will continue to be very important to creating and maintaining a sense of community in the City of Highland. Policies in the City's General Plan Conservation and Open Space Element preserve views of the San Bernardino Mountains and stretches of open space along the Santa Ana River. View preservation includes regulation of hillside development by encouraging low profile massing and natural colors and building materials. City of Highland's Community Design Element focuses on the built character and its relationship with the Land Use, Circulation, and Conservation and Open Space Elements. The policies enumerated in the Community Design Element are intended to create a unified and attractive community identity. The City's Municipal Code contains applicable regulations, as enumerated earlier that require retention of significant natural features and open space; and preservation of views and ridgelines, contour grading, natural landscaping, and architectural design that blends with the natural terrain for hillside development.

As per the City of Highland General Plan EIR, major growth in planned land uses is anticipated in the easternmost portions of the City, particularly east of the confluence of the Santa Ana River and Mill

Creek. These land use changes will mainly be residential that are low density in nature. As a result of these anticipated land use changes, the visual character would change from natural open space or rural landscape to a low density residential interspersed with public-institutional, parks, and commercial/retail land uses.

Harmony Specific Plan Grading Plan. Due to the distinctive landforms, the Specific Plan proposes modifications to the existing grading standards. In general, considerations while preparing the grading concept are as follows:

1. The site generally slopes upward from the west to the east starting at 7% -10% until reaching a hinge point where the slope rapidly steepens,
2. Grading for development is focused in the flatter terrain,
3. Steeper terrain is preserved as natural open space or for agricultural purposes and
4. Critical sensitive environmental habitat is protected.

Following these provisions will allow grading plans that minimize alteration of the landform.

Harmony Specific Plan View Preservation and Enhancement. The Harmony Specific Plan Landscape Design Guidelines outlines development standards and design guidelines that would regulate and ensure the aesthetic visual quality of development on the Project site that would ensure scenic vistas are maintained, thereby implementing the Project's objective of developing a land use plan while responding to the unique environmental conditions of the area. Neighborhood design principles include promoting and framing the natural vistas. The neighborhood design guidelines call for careful building placement and street orientation to protect views and visual quality. These guidelines also state that where feasible, lotting and building placement should consider views of the mountains, as well as create vistas to Mill Creek and adjacent valleys (HSP, p. 12-5). Specific landscape design strategies for view preservation and enhancement include:

1. Providing north-south view corridors along canyons and street corridors that lead from the mountains to Mill Creek
2. Framing views of attractive natural and built environments from roadways, trails, and parks
3. Extending the agricultural landscape into the streets and neighborhoods of Harmony
4. Pulling the natural landscape into Harmony at community greenways and open space areas
5. Ensuring that the fuel modification zone landscape, where required, is attractive and well integrated with surrounding landscape.
6. Planting the neighborhood at higher elevations with low-growing grape vines
7. Maintain vistas to surrounding hills and retain a sense of openness
8. Through the use of vegetative plantings and/or buffers, visually screen views of maintenance facilities, storage yards, and other facilities or structures that may detract from scenic quality (HSP, p. 9-50)

The Lower Loop Road, facing Mill Creek and trails allow for constant views and public access where there is none across the wide expanse of the wash. Certain trails are designed to take advantage of scenic vistas such as Mill Creek and the impressive slopes of the San Bernardino National Forest.

Harmony Specific Plan Development Standards. One of the most important development standards pertains to the height of buildings within the various planning areas of the Project site. Limiting the heights of buildings within the various areas of the Project site would ensure the preservation of scenic vistas from the Project site and along surrounding roadways and from surrounding vantage points.

Therefore, as per the development standards, the maximum permitted height within commercial planning areas is 35-feet for the main structure and 50 feet for architectural projections such as towers, cupolas, and other appurtenances. The maximum allowable heights for homes would range from 35-feet for Estate and Low-Density Residential to 40-feet for Medium-Density Residential. Medium-High Density Residential is permitted up to 45-feet height and High-Density Residential up to 50-feet high.

Furthermore, Harmony Specific Plan outlines provisions for the placement of buildings and structures; the design of setback areas; the location and number of access drives; landscaping and architectural design parameters; the location and design of roads, pedestrian walkways, parking, and storage areas; and the location and design of service areas.

Harmony Photo Simulation. The purpose of this photo simulation is to illustrate the basic relationship between the overall proposed Project and the site landforms. The photo simulation of the Project was developed from SR-38 south of Mill Creek across from the Project site. The photo simulation provided in **Figure 5.1-2 – Conceptual Photo Simulation**, superimposes residential development against the backdrop of the mountains, and shows that the San Bernardino Mountains, as viewed from across Mill Creek would remain a strong scenic backdrop after project development. The built community nestles below the foothills of the San Bernardino Mountains, while the mountains, ridges and valleys are all visible above.

Development of Harmony Specific Plan land uses within the low-lying areas of the valley and foothills adjacent to the San Bernardino Mountains would not alter the scenic views to the Mountains. The height of the San Bernardino Mountains ensures that they will remain a scenic backdrop to Highland without detriment from anticipated development of the proposed Project. Due to the large scale of these landforms and relative lower heights of proposed developments, scenic views are maintained.

As demonstrated in the photo simulation, development of the proposed Project would not have a substantial adverse affect on scenic vistas. With adherence to the existing regulations outlined in the City's Land Use and Development Code and the design guidelines outlined in the Harmony Specific Plan, development of the proposed Project would not have a substantial adverse impact on scenic vistas or substantially degrade the existing visual character of the site or its surroundings. To ensure that the proposed water reservoirs do not impact public views, mitigation measure **MM AES 1** will be implemented, which requires screening around these sites using compatible paint colors or landscaping buffers. **Impacts are considered less than significant with mitigation required.**

Threshold: *Would the proposed Project substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?*

As described above in Section 5.1.1.3, the Project site is not located on or near a state-designated scenic highway (Caltrans). However, portions of the I-10, SR-210, and SR-38 closest to the Project are designated as eligible state scenic highways.

Scenic Highway- Highland General Plan. The General Plan Circulation Element calls for the designation of Boulder Avenue, Base Line (east of City Creek, Palm Avenue, Greenspot Road, Church Street, and Highland Avenue (east of City Creek) as Scenic Highways. The City has adopted provisions to ensure that the scenic quality of the SR-210, Greenspot Road and Boulder Avenue are preserved. Therefore, for Harmony Specific Plan, Greenspot Road should be considered as a scenic corridor.

The applicable provisions are outlined in Section 16.40.440, Scenic Resources, of the City's Municipal Code. As outlined in this section of the code, the scenic resources regulations are intended to establish development standards that protect, preserve, and enhance the aesthetic resources of the City by incorporating design features that minimize interference with the preservation of unique natural resources, roadside views, and scenic corridors. More specifically, this section outlines provisions for the placement of structures; the design of setback areas; the location and number of access drives; landscaping design parameters; the location and design of roads, pedestrian walkways, and parking and storage areas; the location and design of aboveground utilities; and design parameters for grading activities. The proposed Project would be subject to the development standards outlined in this section of the HMC. Adherence to the City's development standards, and additional standards as set forth in the Harmony Specific Plan help to reduce and avoid potential impacts related to aesthetics.

Harmony Specific Plan. Greenspot Road provides westerly access to the planned community via New Greenspot Bridge. Land Use adjoining this portion of Greenspot road is mainly open spaces, planned park, and public facilities. Hence mainly open spaces and low footprint development is planned adjacent to the Greenspot Road along Santa Ana River thereby retaining the scenic value of this view corridor.

Additionally, the development regulations outlined in the Specific Plan require minimum setbacks be provided from the street right-of-way to ensure that scenic vistas from various vantage points, such as surrounding roadways are preserved. Additionally, the landscape design guidelines outlined in the Specific Plan provides for streetscape, and other landscape features that will enhance the scenic corridor. The proposed Project would also include roadway surface improvements and landscaping that would reinforce the visual edges of the Greenspot Road view corridors and further define and frame views to the horizon and the San Bernardino Mountains. Therefore, the Project would not substantially damage scenic resources and **impacts are considered less than significant and no mitigation measures are required.**



Current view of the Project site from south of Mill Creek looking north.



Subject area with conceptual development.

Figure 5.1-2 – Conceptual Photo Simulation
Harmony Specific Plan Draft EIR

Threshold: *Would the proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Currently, the Project site is vacant and contains former and remnant orchards. The few homes that exist near the Project site do not create substantial light or glare and do not adversely affect day and nighttime views of the area. Implementation of the proposed Project would allow for the development of currently undeveloped and underutilized land and alter the land uses, including the introduction of new light and glare sources. Typical residential lighting; commercial lighting; recreational facilities lighting; and roadway and parking-lot lighting would increase nighttime lighting in the Project area.

Nighttime illumination would also be used to highlight building design and landscape features and to create a feeling of security and safety. Other sources of light would include security lighting, minimal nighttime traffic, and light associated with the nighttime use of the retail center, including sign illumination. Lighting from the site would be visible from surrounding areas and include sensitive receptors such as the residences and schools. In addition, lighting could affect the visual character of the nighttime sky.

While adequate lighting and signage shall be incorporated to enhance the facility's ability to function, spill of light onto surrounding properties, and "night glow" will be reduced by using internal and/or external glare control and designing, arranging, directing, or shielding the light fixtures to contain direct illumination on site. Ensuring that these features are included in Project lighting will be accomplished through: (i) review and approval of an Overall Specific Plan Lighting Plan that implements the lighting design guidelines contained in Specific Plan Sections 7.4.6 B, 7.5.5 C, 8.6, 9.8.1, 9.8.2, and 9.11.1, as previously discussed in Section 5.1.4; (ii) compliance with HMC Section 16.40.160; and (iii) standard City conditions of approval, plan check, permit procedures, and code enforcement practices. Therefore, **impacts are considered less than significant.**

5.1.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce the potential significant adverse impacts. The following measures shall be implemented to reduce aesthetic impacts from the proposed Project.

MM AES 1: To avoid the creation of an aesthetically offensive site open to public view, all water reservoir tank(s) to be located within the Project site shall be screened using paint colors or landscaping buffers that blend in with the surrounding hills. Any landscape screening plans shall be submitted to East Valley Water District for approval prior to approval of final construction documents for the water tank(s)/reservoirs.

5.1.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

Compliance with the existing regulations, the provisions outlined in the Specific Plan, and mitigation measures identified above would reduce potential impacts associated with aesthetics to a level that is less than significant.

5.1.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The geographic scope for impacts related to aesthetics consists of the viewshed surrounding the Project site. For cumulative development to result in a cumulative impact on aesthetics, those cumulative development projects typically must be contiguous to the Project site and/or be located within the same viewshed, i.e., viewable from the same points as the Project, and create a significant cumulatively considerable impact.

Cumulative projects would also contribute to the alteration of the visual and minimally lighted character of the Project area. Cumulative development would result in ongoing changes to the visual character of the Project area and add to the creation of nighttime light and glare. However, this would not constitute a significant adverse impact as the Project site and surrounding area would be developed in accordance with the anticipated development that would occur in these areas per the City's General Plan and Harmony Specific Plan as well as the surrounding jurisdictions' General Plans.

Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.1.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- Caltrans California Department of Transportation, *California Scenic Highway Program*, Scenic Highways Routes webpage. (Available at <http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.thm>, accessed April 12, 2013.)
- CALGreen California Building Standards Commission, *2010 California Green Building Standards Code*, "CALGreen, California Code of Regulations, Title 24, Part 11," effective January 1, 2011. (Available at <http://www.documents.dgs.ca.gov/bsc/CALGreen/Master-CALGreen-Non-Res-Guide2010-sec-ed-final-3-1-11.pdf>, accessed October 15, 2012.)

5.2 Agricultural and Forestry Resources

This section evaluates the Project's potential impacts to agricultural and forestry resources.

The following discussion of potential impacts is based on the *California Agriculture Land Evaluation Suitability Analysis (LESA)* prepared by Albert A. Webb Associates, January 2014 (WEBB(a)). This report is contained in Appendix B of this document.

5.2.1 Setting

The Project area is predominantly open space with the Santa Ana River to the west, Mill Creek to the south, and the San Bernardino Mountains to the north. A few residences are located just east and south of the Project site and the Seven Oaks Dam is located north of the Project site. The Project site has been heavily disturbed by agriculture practices and surface mining operations as a borrow site for the construction of Seven Oaks Dam, modifying the landscape of its natural resources. Citrus trees from a former orchard remain on the northwest portion of the Project site. Although this area still contains live citrus trees, the area has not been cultivated or tilled and is also filled with non-native plants and other similar vegetation. According to the County of San Bernardino, no agricultural has taken place on the Project site for over 20 years. Only the first few rows of trees on the Project site adjacent to Tres Lagos Street have been removed to maintain a "fire break between the property and the adjacent residences. Remnant orchards are scattered throughout the central and eastern portion of the site. Remnants of structure foundations, aqueducts, concrete waterlines, and wells are also scattered on-site and have not been completely removed. Agriculture has long been a major foundation of the economy and culture of San Bernardino County and remains a thriving part; however, in recent years, its role has been diminishing in all areas except the area south of Mission Boulevard including the cities of Chino and Ontario. According to the California Department of Food and Agriculture, *California Agricultural Resource Directory 2010-2011*, the total economic value of San Bernardino County Agriculture is representative of approximately 0.9 percent of California's total agricultural, ranking 25th out of 58 counties (CDFA, p. 29).

Agricultural production in the San Bernardino County mostly consists of dairy and poultry; field, vegetable, fruit, and nut crops; and nursery products. Production is regulated and monitored by the County Department of Agriculture/Weights and Measures. According to their *2010 Crop and Livestock Report*, the gross value for agricultural production within the County represented approximately \$428 million in 2010, which was a 17 percent increase from the 2009 gross value of \$355 million.¹ However, total planted acreage increased 41 percent from 993,538 acres in 2009 to 1.4 million acres in 2010. The gross value for agricultural crops in 2010 was approximately \$62 million which represents an increase of \$888,000 from 2009. The gross value of livestock and poultry production was approximately \$29 million in 2010, which represents an increase of \$2.5 million from 2009 values. (SBDA)

¹ Although there was an increase in value from 2009, it should be noted that there was an overall decrease in value of approximately 24 percent between 2005 and 2010.

The County is divided into six agricultural production areas, and the Project area is located within the East End Area, which includes the area east of the I-210 freeway and including all of the San Bernardino Mountains west of Highway 62. Of the 1.4 million acres of agricultural land in the County, 4,626 acres (0.3 percent of the total acreage) were located in the East End Area. Crop value in the East End Area represented only 8.9 percent of the total value in the County (SBDA, p. 2).

Currently, agriculture faces continuing pressure from urbanization, foreign competition, and rising production costs. Despite these pressures, those areas which remain in agricultural production represent a significant open space and economic resource for the County. Though Highland is a relatively new city, the community established an agricultural settlement as early as 1858. By the early 1880s, agricultural development increased in citrus orchards which helped somewhat buffer the effects of the depression. However, with the increased mobility of residents and the suburbanization of the area, citrus groves were removed and replaced with housing as early as 1943. Currently, the City is largely built out and is already planned for further development. The remaining agricultural lands within the City of Highland are mostly citrus groves located to the west of the Santa Ana River and north of Greenspot Road. Also, abandoned orchards exist on portions of the Project site. (GP EIR, Figure 5.2-1)

5.2.1.1 Soils

The Project site contains fourteen soil types ranging from many different soil families. These soil types are identified in **Table 5.2-A – Soil Types on the Project Site** and shown on **Figure 5.2-1 – Soils Map**.

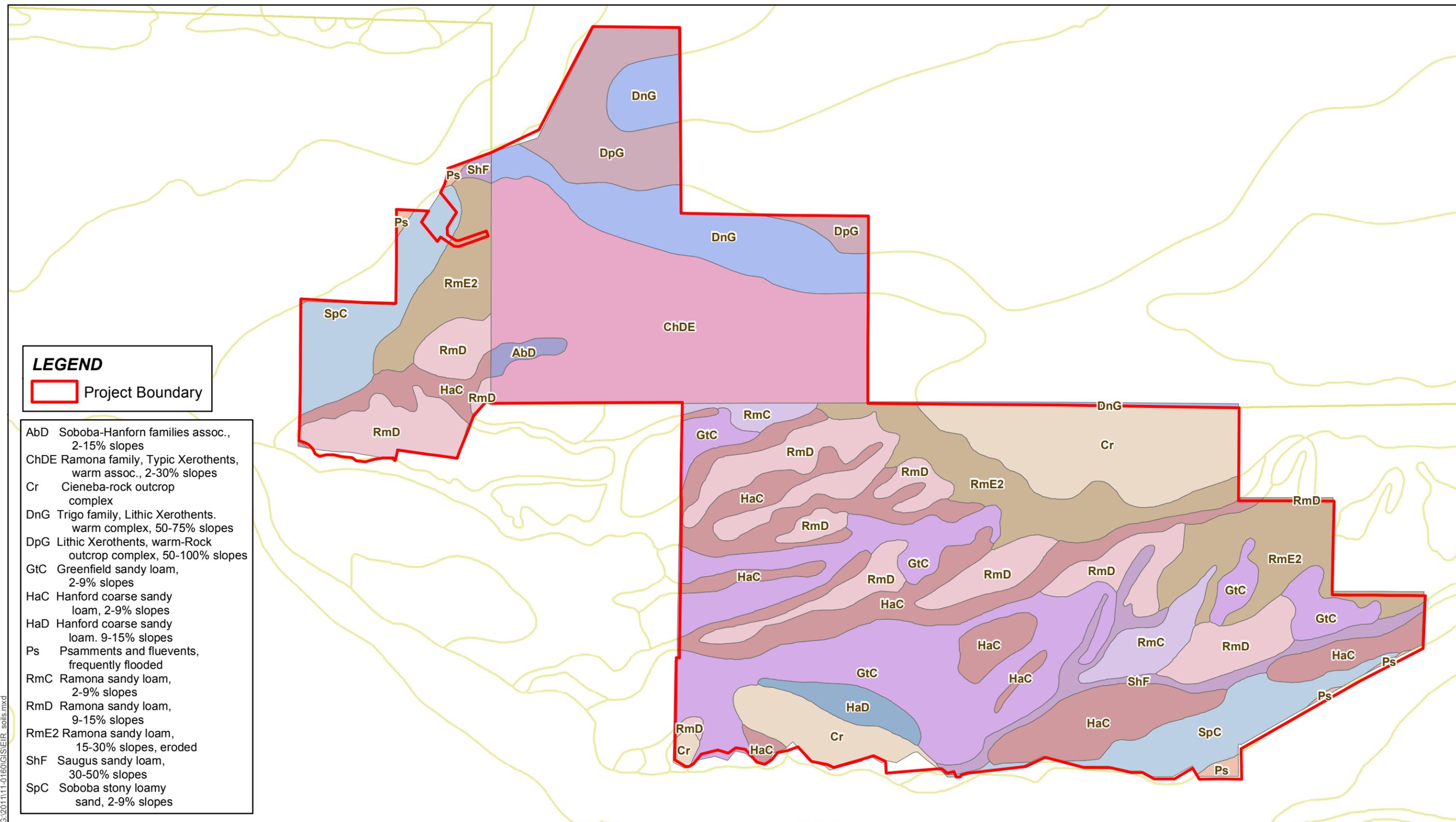
Table 5.2-A – Soil Types on the Project Site

Map Symbol	Mapping Unit	Erosion Susceptibility (K Factor)		Shrink/Swell Potential (Linear Extensibility)		Runoff Potential
		Quantitative	Qualitative	Quantitative	Qualitative	Qualitative
AbD	Soboba-Hanford families association, 2-15% slopes	.05	Low	1.5	Low	Low
ChDE	Ramona family-Typic Xerorthents, warm association, 2-30% slopes	.28	Moderate	2.8	Low	Moderate
Cr	Cieneba-rock outcrop complex	.20	Low	1.5	Low	Moderate
DnG	Trigo family-Lithic Xerorthents, warm complex, 50-75% slopes	.28	Moderate	1.5	Low	High
DpG	Lithic Xerorthents, warm-Rock outcrop complex, 50-100% slopes	.10	Low	1.5	Low	Very High
GtC	Greenfield sandy loam, 2-9% slopes	.20	Low	1.5	Low	Moderate
HaC	Hanford coarse sandy loam, 2-9% slopes	.32	Moderate	1.5	Low	Moderate

Map Symbol	Mapping Unit	Erosion Susceptibility		Shrink/Swell Potential		Runoff Potential
		(K Factor)		(Linear Extensibility)		
HaD	Hanford coarse sandy loam, 9-15% slopes	.32	Moderate	1.5	Low	Moderate
Ps	Psamments and fluevents, frequently flooded	.32	Moderate	1.5	Low	Moderate
RmC	Ramona sandy loam, 2-9% slopes	.32	Moderate	2.0	Low	Moderate
RmD	Ramona sandy loam, 9-15% slopes	.32	Moderate	2.0	Low	Moderate
RmE2	Ramona sandy loam, 15-30% slopes, eroded	.32	Moderate	2.0	Low	Moderate
ShF	Saugus sandy loam, 30-50% slopes	.24	Low	1.5	Low	Moderate
SpC	Soboba stony loamy sand, 2-9% slopes	.15	Low	1.5	Low	Low

Source: WEBB(a), Table 1

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Sources: USDA NRCS SSURGO, 2008.

Figure 5.2-1 - Soils Map
 Harmony Specific Plan EIR

0 0.25 0.5 0.75 Miles



5.2.1.2 Designated Farmland

“Designated Farmland” is a resource based on soil types which is regulated by the California Department of Conservation (DOC). The DOC maintains maps identifying important farmland across the state. The DOC classifies and maps land within the state as: Prime Farmland, Farmland of Statewide Importance, Unique Farmland (collectively referred to as Important Farmland), and Grazing Land to provide information regarding Important Farmland conversion to decisions makers for use in planning the present and future use of California’s agricultural land resources. Also, Farmland of Local Importance is mapped, which is land of importance to the local agricultural economy as determined by each county’s board of supervisors and a local advisory committee. The Project site contains Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land as shown on **Figure 5.2-2 –Farmland Designation Map. Table 5.2-B – Designated Farmland**, presents a summary of the eight categories used to rate and map the quality of the soil for agricultural use and the amount of each type of Farmland present on the Project site.

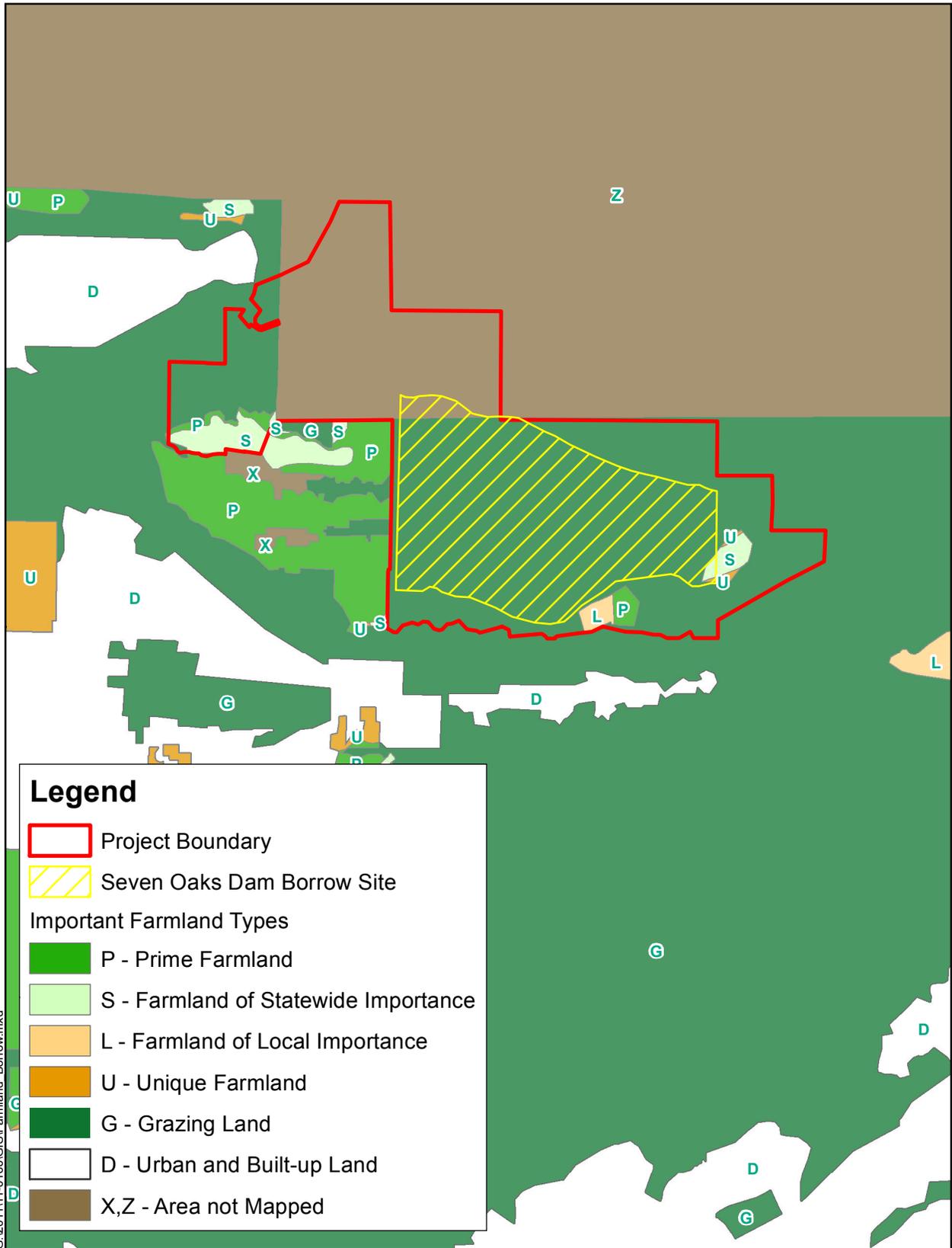
Table 5.2-B – Designated Farmland

Type of Farmland	Characteristics	Acreage in Project Site	Portion in Project Site
Prime Farmland	Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.	20.4	1.2%
Farmland of Statewide Importance	Land other than Prime Farmland which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.	50.4	3.0%
Unique Farmland	Land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods.	3.4	0.2%

Type of Farmland	Characteristics	Acreage in Project Site	Portion in Project Site
Farmland of Local Importance	Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity or value.	11.3	0.7%
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.	1,127.5	68.0%
Urban and Built-up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures per 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administrative purposes, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes.	3.4	0.2%
Other Land [area not mapped]	Land not included in any other mapping categories; such as: low density rural developments; brush, timber, wetland, and riparian areas not suitable for grazing; confined livestock, poultry or aqua culture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Includes vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres.	442.0	26.6%
Water	Bodies of water	-	-
Total		1,658.4	100%

Source: DOC, 2008

The DOC makes a determination regarding the presence of irrigated agriculture based mainly on a review of aerial imagery from the National Aerial Imagery Program (NAIP). Because citrus trees from former orchards still exist in the northwest portion of the Project site and only the first few rows adjacent to Tres Lagos Street have been removed for a fire break, these areas may appear as irrigated croplands in aerial photographs and as such may have been classified as Farmland by DOC. However, no agricultural production has taken place on the Project site for over 20 years.



Sources: Calif. Dept. of Conservation, 2010.
San Bernardino County ISD, 2012

Figure 5.2-2 – Farmland Designations
Harmony Specific Plan Draft EIR



5.2.2 Thresholds of Significance

According to the State *CEQA Guidelines* Appendix G, impacts to agriculture and forestry resources may be considered potentially significant if the Project would:

- 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;
- conflict with existing zoning for agricultural use, or a Williamson Act contract;
- 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));
- result in the loss of forest land or conversion of forest land to non-forest use; or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

5.2.3 Related Regulations

5.2.3.1 Federal

There are no federal regulations which apply to agricultural lands with respect to this Project.

5.2.3.2 State

California Land Conservation Act

The California Land Conservation Act (Williamson Act) was passed in 1965 to protect specific parcels of land in agricultural and open space use. Landowners enter into ten-year contracts with local governments and in return receive lower property tax assessments. Contracts are valid for an initial period of ten years and automatically renew each year to maintain a ten-year life. The property owner may file a notice of non-renewal, stopping the automatic annual renewals and placing the contract in a status in which it runs out over the remaining life of the contract. The Harmony Specific Plan site does not include parcels which are covered by Williamson Act contracts, as discussed under the second threshold below.

5.2.3.3 Local

Highland General Plan

There are no agricultural land use designations within the City. However, light agricultural uses are allowed in the residential designation, Agricultural/Equestrian (zero to two dwelling units per acre). The Project area is designated for Planned Development which allows all residential land uses, including Agricultural/Equestrian.

The Conservation and Open Space Element of the Highland General Plan sets forth the following goal and policies with respect to agricultural resources (GP, p. 5-6):

Agricultural Resources Goal 5.2: *Achieve an orderly transition from agricultural uses to low-density residential/equestrian uses.*

Policy 5.2.1: Ensure that farmlands converted to other uses are consistent with the East Highlands Ranch Planned Development.

Policy 5.2.2: Incorporate appropriate land use transitions and buffering techniques into new development.

Policy 5.2.3: Incorporate appropriate edge treatment between the agricultural/equestrian uses and higher density residential uses through landscaped buffers, greenbelts, view fencing and parkways.

Policy 5.2.4: Preserve visual reminders of the City's agricultural heritage in park design, buffer zones, public use areas and landscape plans.

The Land Use Element of the Highland General Plan sets forth the following goal and policies with respect to agriculture resources (GP, p. 2-29):

Land Use Element Goal 2.7: Encourage natural resource and open space preservation through appropriate land use policies that recognize their value and through the conservation of areas required for the protection of public health and safety.

Policy 2.7.1: Within the eastern portions of the City, utilize lower densities to protect agricultural lands, scenic resources and topographic features.

Policy 2.7.2: Preserve agricultural lands within the eastern portions of the City as commercial operations if possible, or within residential developments if not. Utilize Planned Developments with joint ownership or agricultural uses or placement of low density housing within an overall grove setting.

Policy 2.7.4: Preserve areas designated as Open Space to provide for recreation, preservation of scenic and environmental values, managed production of resources (agriculture, water reclamation and conservation, mineral extraction) and protection of public safety.

The Land Use Element of the Highland General Plan sets forth the following goal and policies with respect to Seven Oaks Dam Area (GP, p. 2-41 and 2-42):

Land Use Goal 2.15: Create a one-of-a-kind, high-quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities.

Policy 2.15.12: Maintain the Greenspot Agricultural Preserve until such time future development is proposed or more detailed planning is initiated. In the event that proposed development would impact the Agricultural Preserve, the City shall evaluate the viability of incorporating the Preserve into the development, consistent with the City adopted Rules and Procedures for the Administration of Agricultural Preserves and Contracts.

5.2.4 Project Design Features

Design features refer to ways in which a proposed project will reduce or avoid potential impacts to agricultural resources through the design of the project. The proposed Project includes the following design features which would reduce or eliminate impacts related to loss of agricultural uses.

Design strategies included in the Specific Plan are:

Agriculture Overlay

Approximately one acre in Planning Area (PA) 66 has been designated with an Agriculture Overlay. Currently shown as part of PA-66 in **Figure 3-8 – Proposed Land Use Plan**, the site is envisioned for year-round agricultural production and is expected to be owned by the Homeowner’s Association and leased for farming. The parcel may be operated as a Community Supported Agricultural (CSA) operation or other type of private farming operation, but the intent is to grow and sell produce year-round from a farm stand or small building on the site. The estimated floor-area-ratio (FAR) for the Agriculture Overlay area is 0.20. (HSP, p. 4-7)

Ag-inspired Streets and Landscape

In order to integrate the communities’ agricultural heritage with the proposed development, the Harmony Specific Plan proposes agriculture-inspired streetscape and plantings in parks and in transition zones. Agriculturally inspired trees, such as English Walnuts or flowering cherry trees, and trees planted in orchard style, may be suitable for medians and parkway plantings. (HSP, p. 9-54)

The Harmony Specific Plan area has been divided into three landscape districts that are defined by a fruiting tree (apple, walnut, and citrus) as well as a native tree that possesses complimentary features (HSP, pp. 9-3–9-7). Agricultural plantings may also be featured in secondary entrances within these landscape districts (HSP, p. 9-28).

Permitted/Conditional Uses

Agricultural activities such as farming, orchards, crops, other agriculture uses in residential planning areas less than 10 acres are permitted. Agricultural uses in residential planning areas more than 10 acres would need a conditional use permit. (HSP, p. 10-20)

5.2.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation, to non-agricultural use?*

Development of the proposed Project will convert approximately 74 acres of Designated Farmland (20.4 acres of Prime Farmland, 50.4 acres of Farmland of Statewide Importance, and 3.4 acres of Unique Farmland) into non-agricultural land uses, based on the current 2010 FMMP map. (See **Table 5.2-B and Figure 5.2-2.**) However, as stated in Section 5.2.1.2, above, the DOC makes a determination regarding the presence of irrigated agriculture based mainly on a review of aerial imagery from the National Aerial Imagery Program (NAIP). In fact, the categories defined by DOC indicate that the land under the designations of Prime Farmland, Farmland of Statewide Importance and Unique Farmland must have been used for agricultural production at some time during the four years prior to the mapping date.

Because the citrus trees from former orchards still exist in the northwest portion of the Project site, these areas may appear as irrigated croplands in aerial photographs and as such may be classified as Farmland by DOC. However, no agricultural production has taken place on the Project site for over 20 years and as such would not meet the definitions of Farmland.

The impacts of this conversion are also addressed in the Cumulative Impact Analysis in Section 7.0 of this DEIR.

The proposed Project site was also evaluated through the LESA model on several factors related to agricultural suitability. Soil types, soil characteristics, relative Project size, water availability, and surrounding land uses related to agriculture were all factors used to “rate” the Project site based on its “agricultural value.” The LESA model utilizes a rating system based on 100 possible points to evaluate each of these factors, and then weights them to comprise a final score which ultimately describes the agricultural value of the project site. (Please see Appendix B for a full discussion of LESA analysis of the proposed Project.) The scoring scale by which significance is determined using the LESA model is shown in **Table 5.2-C – LESA Model Scoring Thresholds**.

In order to determine the significance of this loss of designated Farmland, the CEQA Guidelines Appendix G suggests the use of the DOC’s LESA model to assess the significance of conversion of agricultural lands. For the purposes of evaluation in this DEIR, the LESA model was used as the tool to assess the significance of this threshold. The LESA evaluation (Appendix B) was completed utilizing the procedures set forth in the *California Agricultural Land Evaluation and Site Assessment Model* (“LESA Manual”) developed by the California Department of Conservation.

Table 5.2-C – LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 points	Not Considered Significant
40 to 59 points	Considered Significant <u>only</u> if LE <u>and</u> SA subscores are each greater than or equal to 20 points
60 to 79 points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points.
80 to 100 Points	Considered Significant

Source: LESA evaluation (Appendix B)

Table 5.2-D – Final LESA Scoresheet shows the score relative to each factor utilized in the LESA model. The proposed Project site scored 19.28 out of 50 points on the Land Evaluation (LE) section which relates soil types and characteristics to agriculture. The borrow site was not included in the LESA analysis because the construction of the Seven Oak Dam removed approximately 6 million cubic yards of soil from the Project site and thus, the borrow site has been substantially disturbed and the surface soils, which is the soil that is suitable for agricultural uses, have been removed. The proposed Project site

scored 27.00 out of 50 for its Site Assessment (SA) characteristics which consider things such as water availability, Project site, and surrounding agriculture.

Table 5.2-D – Final LESA Scoresheet

	Factor Rating (0-100 points)	Factor Weighting (Total = 1.00)	Weighted Factor Rating
Land Evaluation Factors			
Land Capability Classification	44.01	25%	11.00
Storie Index Rating	33.12	25%	8.28
Land Evaluation Subtotal			19.28
Site Assessment Factors			
Project Size	100	15%	15.00
Water Resource Availability	80	15%	12.00
Surrounding Agricultural Land	0	15%	0
Protected Resource Land	0	5%	0
Site Assessment Subtotal			27.00
FINAL LESA SCORE			46.28

Source: LESA evaluation (Appendix B)

As described above in **Table 5.2-C**, sites receiving a total LESA score of 40 to 59 points indicate that proposed conversion of the site from agricultural to urban land uses is “Considered Significant only if LE and SA subscores are each greater than or equal to 20 points.” Because the LE subscore is less than 20 points, the proposed conversion of the site from agriculture to non-agricultural uses is considered **less than significant**.

Threshold: *Would the proposed Project conflict with existing agricultural use, or a Williamson Act contract?*

Currently there are no operational agricultural uses on the Project site. There are abandoned orchards in portions within the Project site. The remaining agricultural lands within the City of Highland are mostly citrus groves located to the west of the Santa Ana River and north of Greenspot Road. No lands within the City and specifically the Project site are bound by Williamson Act contracts. According to the General Plan EIR, no agricultural preserve contracts exist on the Project site (GP EIR, p. 2-43). Since there are no active Williamson Act contracts or other agricultural preserve contracts within the Project site and there is no existing agricultural use, there would be **no impact** in this regard.

Threshold: *Would the proposed Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Resources Code section 51104 (g))?*

The Project site is zoned for Planned Development (PD) and is not zoned as forest land, timberland or timberland production lands. Hence, the proposed Project does not conflict with the existing zoning and there would be **no impacts**.

Threshold: *Would the proposed Project result in the loss of forest land or conversion of forest land to non-forest use?*

The Project site is located to the south, southwest and southeast of the San Bernardino National Forest. There are no forest lands existing or designated on the Project site. Hence, implementation of the Project will not result in the loss of forest lands or conversion of forest lands to non-forest uses. There would be **no impacts**.

Threshold: *Would the proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

The Highland General Plan designates the Project site for Planned Development. Surrounding land uses include rural living, agriculture/equestrian residential, parks, and open space recreational uses.

The Project site is located west of Greenspot Road and Garnet Avenue, and north of SR-38. As described in Section 5.16 Transportation and Traffic of this DEIR, separate projects by Caltrans include improvements to Greenspot Road Bridge over the Santa Ana River from 2 lanes to 4 lanes, and Garnet Avenue Bridge over Mill Creek will be improved and remain as a 2 lane bridge. Since both of these bridges currently exist through the area, the Project is not creating new access to the area that would facilitate the conversion of farmland to non-agricultural use. Existing circulation would only be improved. Therefore, these bridge improvements will not cause direct or indirect conversion of farmland to non-agricultural use. The adjacent rural residential properties to the south and east have sufficient existing access from existing roads including Newport Avenue and Emerald Avenue.

The East Valley Water District (EVWD) has the authority to provide potable water and in conjunction with the San Bernardino Municipal Water Department (SBMWD), sewer service to customers within its service area. Currently, the Project site is located in a portion of the EVWD service area that is not currently served with water services (2010 RUWMP, Figure 7-1); therefore, development of the proposed Project will require the extension of these services. However, this will not affect the existing agricultural uses southwest of the Project because these uses are outside of the EVWD service area and the City of Highland. Additionally, most of the surrounding area is already built out. The east section of Greenspot Road towards the Santa Ana River is designated as Agriculture/Equestrian residential (although there are Important Farmland designations), southwest and south of Mill Creek of the proposed Project is existing residential and open space, and directly to the north of the Project site are the San Bernardino Mountains and the Seven Oaks Dam, which will not be subject to urban uses.

Further, as stated in Section 5.2.1.2, above, the Farmland categories defined by DOC indicate that the land under the designations of Prime Farmland, Farmland of Statewide Importance and Unique Farmland must have been used for agricultural production at some time during the four years prior to the mapping date. However, no agricultural production has taken place on the Project site for over 20 years and as such would not meet the definitions of Farmland.

However, the Project has been designed to preserve visual reminders of the City's agricultural heritage by incorporating the Agricultural Overlay, Ag-inspired streets, and landscape districts. With implementation of **MM AG 1**, the Project will maintain a buffer area between proposed uses and the existing bee keeping uses in proximity to the Project. Therefore, the proposed Project does not involve changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use and impacts are considered **less than significant with mitigation**.

5.2.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce potential significant adverse impacts to agricultural resources.

MM AG 1: To reduce impacts due to incompatibility between agricultural uses (existing bee keeping east of the Project) and future development, proposed residences, school buildings, and commercial retail structures shall maintain a minimum buffer of 300 feet from existing active bee keeping. The 300-foot buffer area may include parks, open space, public road rights-of-way, parking lots, and service or maintenance areas. Water features that provide consistent sources of water, including but not limited to, lakes, ponds, pools, spas, or fountains shall not be permitted within the buffer area. The 300-foot buffer area, and the uses proposed, shall be identified on development applications submitted to the City of Highland for implementing projects for which any portion of such a project's boundary is within 300 feet of active bee keeping. The requirement for a 300 foot buffer is not applicable for any new bee keeping activities that commence after approval of the Harmony Specific Plan.

5.2.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

With implementation of mitigation measures **MM AG 1**, potential impacts to agricultural resources **will be less than significant**.

5.2.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The City determined that impacts to agricultural resources within the City would be significant and unavoidable during the General Plan Update process. The City adopted a Statement of Overriding Considerations for these impacts because the benefits of the General Plan, including the Project site's designation as Planned Development, outweighed these impacts (GP Final EIR, p. 4-1 – 4-2)

Although the buildout of the Project will result in the conversion of Farmland to non-agricultural use, because the Project's impact is less than significant, the Project's contribution to this cumulative impact is not considerable.

Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.2.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- GP EIR City of Highland, *General Plan EIR*, September 2005. (Available at the City of Highland.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- SBC AG San Bernardino County, Department of Agriculture/Weights and Measures, *2010 Crop and Livestock Report*, p. 2. (Available at <http://www.sbcounty.gov/awm/docs/2010CropReport.pdf>, accessed August 16, 2011).
- CDFA California Department of Food and Agriculture, *California Agricultural Resource Directory 2010-2011, Agricultural Statistical Review Section*, pp. 17-39. (Available at http://www.cdfa.ca.gov/Statistics/PDFs/AgResourceDirectory_2010-2011/2AgOvStat10_WEB.pdf, accessed August 16, 2011).
- HDR Eng HDR Engineering, *A Comprehensive Water and Sewer Rate Study*, June 1, 2010, p. 9. (Available at <http://www.eastvalley.org/wp/wp-content/uploads/2010/06/RS2010.pdf>, accessed August 19, 2011).
- Webb(a) Albert A. Webb Associates. *California Agriculture Land Evaluation Suitability Analysis (LESA)*, January 2014. (Appendix B)

5.3 Air Quality

This section evaluates the Project's impacts related to air quality in the Project area by presenting a quantitative analysis of criteria air pollutant emissions that are expected to be generated during construction and operation.

The following discussion of potential impacts is based on the *Air Quality Technical Report, Harmony Specific Plan, Highland, California*, prepared by ENVIRON, January 13, 2014 (referenced as AQTR and cited as ENVIRON(a)). This report is contained in Appendix C of this DEIR. The report was conducted within the context of the California Environmental Quality Act (CEQA; California Public Resources Code 21000 *et seq.*), and is based on the methodology of the South Coast Air Quality Management District (SCAQMD). As recommended by SCAQMD, the California Emissions Estimator Model (CalEEMod™) version 2011.1.1 computer program was used to quantify Project-related emissions, and AERMOD, a modeling system developed by the American Meteorological Society/United States Environmental Protection Agency's Regulatory Model Improvement Committee, was used to evaluate the air dispersion of pollutants.

5.3.1 Setting

5.3.1.1 Physical Setting

The proposed Project is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the SCAQMD. The Basin consists of Orange County, coastal and mountain portions of Los Angeles County, as well as Riverside and San Bernardino Counties (SCAQMD 1993, p. 2-1). Regional and local air quality within the Basin is affected by topography, atmospheric inversions, and dominant onshore flows. Topographic features such as the San Gabriel, San Bernardino, and San Jacinto Mountains form natural horizontal barriers to the dispersion of air contaminants. The presence of atmospheric inversions limits the vertical dispersion of air pollutants. With an inversion, the temperature initially follows a normal pattern of decreasing temperature with increasing altitude; however, at some elevations, the trend reverses and temperature begins to increase as altitude increases. This transition to increasing temperature establishes the effective mixing height of the atmosphere and acts as a barrier to vertical dispersion of pollutants. (SCAQMD 1993, p. A8-2)

Dominant onshore flow provides the driving mechanism for both air pollution transport and pollutant dispersion. Air pollution generated in coastal areas is transported east to inland receptors by the onshore flow during the daytime until a natural barrier (the mountains) is confronted, limiting the horizontal dispersion of pollutants. The result is a gradual degradation of air quality from coastal areas to inland areas, which is most evident with the photochemical pollutants such as ozone formed under reactions with sunlight. (SCAQMD 1993, pp. A8-1 to A8-2)

5.3.1.2 Climate

Terrain and geographical location determine climate in the Basin. The Project site lies within the terrain southeast of the San Gabriel Mountains, south and west of the San Bernardino Mountains, and northeast of the Santa Ana Mountains. The climate in the Basin is typical of Southern California's Mediterranean climate, which is characterized by dry, warm summers and mild winters. Winters

typically have infrequent rainfall, light winds, and frequent early morning fog and clouds that turn to hazy afternoon sunshine. (SCAQMD 1993, pp. A8-1 to A8-2)

The following factors govern microclimate differences among inland locations within the Basin: (1) distance of the mean air trajectory from the site to the ocean; (2) site elevation; (3) existence of any intervening terrain that may affect airflow or moisture content; and (4) proximity to canyons or mountain passes. As a general rule, locations farthest inland from the ocean have the hottest summer afternoons, the lowest rainfall, and the least amount of fog and clouds. Foothill communities in the Basin have greater levels of precipitation, cooler summer afternoons, and may be exposed to wind funneling through nearby canyons during Santa Ana winds. Terrain will generally steer local wind patterns. (SCAQMD 1993, pp. A8-1 to A8-2)

The Project site is located in the City of Highland, east of the Santa Ana River, north of Mill Creek, at the base of the San Bernardino Mountains in eastern San Bernardino Valley (**Figure 3-1 – Regional Map**), within the central portion of the Basin.

5.3.1.3 Precipitation and Temperature

Annual average temperatures in the Basin are typically in the low to mid-60 degrees Fahrenheit. Temperatures above 100 degrees have been recorded for all portions of the Basin during the summer months. (SCAQMD 1993, p. A8-1)

The rainy season in the Basin is November to April. Summer rainfall can occur as widely scattered thunderstorms near the coast and in the mountainous regions in the eastern Basin. Rainfall averages vary over the Basin. The City of Riverside averages 9 inches of rainfall while the City of Los Angeles averages 14 inches. Rainy days vary from 5 to 10 percent of all days in the Basin, with the most frequent occurrences of rainfall near the coast. (SCAQMD 1993, p. A8-1) Rainfall at the weather station closest to the Project site, located in the City of Redlands, averages 13.56 inches of annual rainfall based on a period of record from April 1, 1898, through March 31, 2013.¹

5.3.1.4 Winds

The interaction of land (offshore) and sea (onshore) breezes control local wind patterns in the area. Daytime winds typically flow from the coast to the inland areas, while the pattern typically reverses in the evening, flowing from the inland areas to the ocean. Air stagnation may occur in the early evening and early morning during periods of transition between day and nighttime flows.

Approximately 5 to 10 times a year, the site vicinity experiences strong, hot, dry desert winds known as the Santa Ana winds. These winds, associated with atmospheric high pressure, originate in the upper deserts and are channeled through the passes of the San Bernardino Mountains and into the inland valleys. Santa Ana winds can last for a period of hours or days, and gusts of over 60 miles per hour have been recorded.

High winds, such as the Santa Ana winds, affect dust generation characteristics and create the potential for off-site air quality impacts, especially with respect to airborne nuisance and particulate emissions.

¹ Desert Research Institute, Western Regional Climate Center, Redlands Station 047306. Available at <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7306>

Local winds in the Project area are also an important meteorological parameter because they control the initial rate of dilution of locally generated air pollutant emissions.

5.3.1.5 Categories of Emission Sources

Air pollutant emissions sources are typically grouped into two categories: stationary and mobile sources. These emission categories are defined and discussed in the following subsections.

Stationary Sources

Stationary sources are divided into two major subcategories: point and area sources. Point sources consist of a single emission source with an identified location at a facility. A single facility could have multiple point sources located on site. Stationary point sources are usually associated with manufacturing and industrial processes. Examples of point sources include boilers or other types of combustion equipment at oil refineries, electric power plants, etc. Area sources are small emission sources that are widely distributed, but are cumulatively substantial because there may be a large number of sources. Examples include residential water heaters; painting operations; lawn mowers; agricultural fields; landfills; and consumer products, such as barbecue lighter fluid and hair spray. (SCAQMD 1993, p. 1-1)

Mobile Sources

Mobile sources are motorized vehicles which are classified as either on-road or off-road. On-road mobile sources typically include automobiles and trucks that operate on public roadways. Off-road mobile sources include aircraft, ships, trains, and self-propelled construction equipment that operate off of public roadways. Mobile source emissions are accounted for as both direct source emissions (those directly emitted by the individual source) and indirect source emissions, which are sources that by themselves do not emit air contaminants but indirectly cause the generation of air pollutants by attracting vehicles. Examples of indirect sources include office complexes, commercial and government centers, sports and recreational complexes, and residential developments. (SCAQMD 1993, p. 1-2)

5.3.1.6 Air Pollution Constituents

Criteria Pollutants

Air pollutants are classified as either primary or secondary, depending on how they are formed. Primary pollutants are generated daily and are emitted directly from a source into the atmosphere. Examples of primary pollutants include carbon monoxide (CO), nitrogen dioxide (NO₂) and nitric oxide (NO),² sulfur dioxide (SO₂), particulates (PM-10 and PM-2.5) and various hydrocarbons (HC) or volatile organic compounds (VOC), which are also referred to as reactive organic gases (ROG). The predominant source of air emissions expected to be generated by the proposed Project is vehicle emissions. Motor vehicles primarily emit CO, NO_x, and HC/VOC/ROG.

Secondary pollutants are created over time and occur within the atmosphere as chemical and photochemical reactions take place. An example of a secondary pollutant is ozone (O₃), which is one of the products formed when NO_x reacts with HC/VOC/ROG in the presence of sunlight. Other secondary pollutants include photochemical aerosols. Secondary pollutants such as ozone represent major air quality problems in the Basin.

² NO₂ and NO are collectively known as oxides of nitrogen (NO_x).

The federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). Six “criteria” air pollutants were identified using specific medical evidence available at that time, and NAAQS were established for those chemicals. The State of California has adopted the same six chemicals as criteria pollutants, but has established different allowable levels. The six criteria pollutants are: CO, NO₂, O₃, lead, PM-10, and sulfur dioxide. The following is a further discussion of the criteria pollutants, as well as VOCs.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing substances. Concentrations of CO are generally higher during the winter months when meteorological conditions favor the build-up of primary pollutants. (USEPA 2005, Homepage) Automobiles are the major source of CO in the Basin, although various industrial processes also emit CO through incomplete combustion of fuels. In high concentrations, CO can cause serious health problems in humans by limiting the red blood cells’ ability to carry oxygen (SCAQMD 1993, p. 3-2).
- **Oxides of Nitrogen (NO_x)** include nitric oxide (NO) and nitrogen dioxide (NO₂) and contribute to air pollution. NO is a colorless, odorless gas formed by a combination of nitrogen and oxygen when combustion takes place under high temperatures and pressures. NO₂ is a reddish-brown gas formed by the combination of NO with oxygen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations, as well as ships, railroads, and aircraft, are the primary sources of NO_x. NO₂ at atmospheric concentrations is a potential irritant and can cause coughing in healthy people, can alter respiratory responsiveness and pulmonary functions in people with preexisting respiratory illness, and potentially lead to increased levels of respiratory illness in children. (USEPA 2005, Homepage).
- **Ozone (O₃)** is a colorless toxic gas that irritates the lungs and damages materials and vegetation. During the summer’s long daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between NO₂ and VOC which results in the formation of O₃. Conditions that lead to high levels of O₃ are adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer. O₃ represents the worst air pollution-related health threat in the Basin as it affects people with preexisting respiratory illness as well as reduces lung function in healthy people. Studies have shown that children living within the Basin experience a 10-15 percent reduction in lung function (SCAQMD 1993, p. 3-2).
- **Atmospheric Particulate Matter (PM)** is made up of fine solid and liquid particles, such as soot, dust, aerosols, fumes, and mists. PM-10 consists of particulate matter that is 10 microns or less in diameter, and PM-2.5 consists of particulate matter of 2.5 microns or less in size. Both PM-10 and PM-2.5 can be inhaled into the deepest part of the lung, contributing to health effects. The presence of these fine particles by themselves cause lung damage and interfere with the body’s ability to clear its respiratory tract. These particles can also act as a carrier of other toxic substances. (SCAQMD 1993, p. 3-3)

Sources contributing to PM pollution include road dust, windblown dust, agriculture, construction, fireplaces and wood burning stoves, and vehicle exhaust. Specifically, SCAQMD data indicates the largest component of PM-10 particles in the area comes from dust (unpaved roads, unpaved yards, agricultural lands, and vacant land that has been disked). PM-2.5 particles are mostly manmade particles resulting from combustion sources. Organic carbon particles generated from paints, degreasers, and vehicles are another component of PM-2.5 pollution. The last notable constituent of PM-2.5 sources is elemental carbon, which is used as a surrogate for diesel particulates.

- **Sulfur dioxide (SO₂)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. SO₂ can result in temporary breathing impairment in asthmatic children and adults engaged in active outdoor activities. When combined with PM, SO₂ can cause symptoms such as shortness of breath and wheezing; and, with long-term exposure, lead to the exacerbation of existing cardiovascular disease and respiratory illnesses (USEPA 2005, Homepage). Although SO₂ concentrations have been reduced to levels well below state and federal standards, further reductions in SO₂ emissions are needed because SO₂ is a precursor to sulfate and PM-10.
- **Lead (Pb)** concentrations once exceeded the state and federal air quality standards by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982. Health effects associated with lead include neurological impairments, mental retardation, and behavioral disorders. At low levels, lead can damage the nervous systems of fetuses and result in lowered IQ levels in children (USEPA 2005, Homepage). Although special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations have been recorded at these stations since 1996. Unleaded gasoline has greatly contributed to the reduction in lead emissions in the Basin. Since the proposed Project will not involve leaded gasoline, or other sources of lead emissions, this criteria pollutant is not expected to increase with Project implementation and therefore has not been analyzed herein.
- **Volatile Organic Compounds/Reactive Organic Gases (VOC/ROG)** are not classified as criteria pollutants and as such do not have any state or federal ambient air quality standards. However, a reduction in VOC emissions reduces certain chemical reactions which contribute to the formation of O₃, which is classified a criteria pollutant. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM-10 and lower visibility levels. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere, even at low concentrations, are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen. (SCAQMD 2005, p. 1-5)

Toxic Air Contaminants

Toxic air contaminants (TACs) are chemicals generally referred to as “non-criteria” air pollutants which are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. There are hundreds of air toxics, and exposure to these pollutants can cause or contribute to cancer or non-cancer health effects such as birth defects, genetic damage, and other adverse health effects. Effects on human health may be both chronic (i.e., of long duration) or acute (i.e., severe but of short duration). Acute health effects are attributable to sudden exposure to high quantities of air toxics. These effects can include nausea, skin irritation, respiratory illness, and, in some cases, death. Chronic health effects usually result from low-dose, long-term exposure from routine releases of air toxics. The effect of major concern for this type of exposure is cancer, which typically requires a latency period of 10-30 years after exposure to develop.

5.3.1.7 Monitored Air Quality

The Project site is partially located within SCAQMD Source Receptor Area (SRA) 35 and SRA 38. The monitoring station for SRA 35, which covers East San Bernardino Valley, is located in the City of Redlands and the monitoring station for SRA 38, which covers East San Bernardino Mountains, is located in Big Bear Lake, a mountainous region unlike the Project site. Thus, data from SRA 35 is utilized herein. However, where a pollutant is not monitored at SRA 35, that data will be supplemented from the nearest monitoring station in adjacent SRA 34, which covers Central San Bernardino Valley, and is located in the City of San Bernardino. The current available data for years 2010-2012 from SRA 35 is shown on **Table 5.3-A – Air Quality Monitoring Summary – 2010-2012 (SRA 35)**.

Table 5.3-A – Air Quality Monitoring Summary – 2010–2012 (SRA 35)

	Pollutant/Standard	Monitoring Years		
		2010	2011	2012
No. Days Exceeded	Ozone (O₃):			
	Health Advisory - 0.15 ppm	0	1	0
	California Standard:			
	1-Hour - 0.09 ppm	43	64	66
	8-Hour - 0.07 ppm	86	96	98
	Federal Primary Standards:			
	8-Hour - 0.075 ppm	61	80	79
	Max 1-Hour Conc. (ppm)	0.128	0.151	0.136
	Max 8-Hour Conc. (ppm)	0.112	0.133	0.109
No. Days Exceeded	Carbon Monoxide (CO):^a			
	California Standard: ^b			
	1-Hour - 20 ppm	0	0	0
	8-Hour - 9.0 ppm	0	0	0
	Federal Primary Standards: ^b			
	1-Hour - 35 ppm	0	0	0
	8-Hour - 9.0 ppm	0	0	0
	Max 1-Hour Conc. (ppm)	2	--	--
	Max 8-Hour Conc. (ppm)	1.7	1.7	1.7
No. Days Exceeded	Nitrogen Dioxide (NO₂):^a			
	California Standard:			
	1-Hour - 0.18 ppm (180 ppb)	0	0	0
	Federal Standard:			
	Annual Arithmetic Mean (ppb)	18.8	16.9	18.8
	Max. 1-Hour Conc. (ppb)	69.2	61.9	67.0

	Pollutant/Standard	Monitoring Years		
		2010	2011	2012
No. Days Exceeded	Sulfur Dioxide (SO₂):^c			
	California Standards:			
	1-Hour – 0.25 ppm (250 ppb)	0	0	0
	24-Hour – 0.04 ppm (40 ppb)	0	0	0
	Federal Primary Standards: ^a			
	1-Hour – 0.075 ppm (75 ppb)	0	0	0
	Max. 1-Hour Conc. (ppb)	6.6	12.3	22.5
	Max. 24-Hour Conc. (ppb)	1.6	--	--
No. Days Exceeded	Suspended Particulates (PM-10):			
	California Standards:			
	24-Hour - 50 µg/m ³	1	2	0
	Federal Primary Standards:			
	24-Hour – 150 µg/m ³	0	0	0
	Annual Arithmetic Mean (µg/m ³)	25.8	24.9	23.4
	Max. 24-Hour Conc. (µg/m ³)	57	71	48
No. Days Exceeded	Fine Particulates (PM-2.5):^a			
	California & Federal Primary Standards:			
	24-Hour – 65 µg/m ³ (35µg/m ³)	2	2	0
	Annual Arithmetic Mean (µg/m ³)	11.1	12.2	11.8
	Max. 24-Hour Conc. (µg/m ³)	39.3	65.0	34.8

Notes: -- indicates no data available ; ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms/cubic meter

^{a.} Data not monitored; data obtained from Central San Bernardino Valley 2 monitoring station in SRA 34.

^{b.} The state and federal 1-hr and 8-hr standards were not exceeded.

^{c.} Data obtained from Central San Bernardino Valley 1 monitoring station in SRA 34

^{d.} Federal SO₂ standard for 24-hour and AAM standards revoked; established new 1-hour standard of 0.075 ppm, effective August 2, 2010.

5.3.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to air quality may be considered potentially significant if the proposed Project would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 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);
- expose sensitive receptors which are located within one mile of the project site to substantial point source emissions; or
- create objectionable odors affecting a substantial number of people.

5.3.3 Related Regulations

5.3.3.1 Criteria Air Pollutant Regulations

The federal and state ambient air quality standards (AAQS) establish the context for the local air quality management plans (AQMP) and for determination of the significance of a project's contribution to local or regional pollutant concentrations. The federal and state AAQS are presented in **Table 5.3-A**. The

AAQS represent the level of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other diseases or illness and persons engaged in strenuous work or exercise, all referred to as "sensitive receptors." SCAQMD defines a "sensitive receptor" as a land use or facility such as residents, schools, childcare centers, athletic facilities, playgrounds, retirement homes, and convalescent homes. (SCAQMD 1993, p. 1-2)

Both federal and state Clean Air Acts require that each non-attainment area prepare a plan to reduce air pollution to healthful levels. The 1988 California Clean Air Act and the 1990 amendments to the federal Clean Air Act established new planning requirements and deadlines for attainment of the air quality standards within specified time frames which are contained in the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised, and approved over the past decade. (SCAQMD 1993, p. 2-4) The currently adopted clean air plan for Basin is the 1999 SIP Amendment, approved by the USEPA in 2000.

The AQMP for the Basin establishes a program of rules and regulations directed at attainment of the state and national air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections. The SCAQMD adopted an updated AQMP in December 2012, which outlines the air pollution measures needed to meet federal health-based standards for particulates (PM-2.5) in 2014 and also includes specific measures to further implement the O₃ strategy in the 2007 AQMP to assist in attaining the ozone standard in 2023 (SCAQMD 2012, p. 1-18). The 2012 AQMP is submitted to ARB and USEPA for review and to be included as a revision to California's SIP. ARB approved the 2012 AQMP on January 25, 2013 and submitted it to the USEPA on February 13, 2013.³

The ARB maintains records as to the attainment status of air basins throughout the state, under both state and federal criteria. Based on ARB's 2012 air quality data, the portion of Basin within which the Project site is located is designated as a non-attainment area for ozone, PM-10, and PM-2.5 by federal standards, and ozone, PM-2.5, PM-10, and NO₂ by state standards.⁴

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. They include the application of water or chemical stabilizers to disturbed soils at least twice a day; covering all haul vehicles before transport of materials; restricting vehicle speeds on unpaved roads to 15 mph; and sweeping loose dirt from paved site access roadways used by construction vehicles. In addition, it is required to establish a vegetative ground cover on disturbance areas that are inactive within 30 days after active operations have ceased. Alternatively, an application of dust suppressants can be applied in sufficient quantity and frequency to

³ <http://www.arb.ca.gov/planning/sip/planarea/2012%20AQMP%20Submittal%20Letter%20to%20U.S.%20EPA.pdf>

⁴ <http://www.arb.ca.gov/desig/adm/adm.htm>

maintain a stable surface. Rule 403 also requires grading and an excavation activity to cease when winds exceed 25 mph. Compliance with Rule 403 is required of the Project.

SCAQMD Rule 1113 governs the sale of architectural coatings and limits the VOC in paints and paint solvents. Although this rule does not directly apply to the Project, it does dictate the VOC content of paints available for purchase.

5.3.3.2 Toxic Air Contaminant Regulations

Toxic Air Contaminants (TACs) are regulated under both federal and state laws. Federally, the 1970 Amendments to the Clean Air Act included a provision to address air toxics. California regulates toxic air contaminants through its air toxics program, mandated in Chapter 3.5 (Toxic Air Contaminants) of the Health and Safety Code §39660, *et seq.*, and Part 6 Air Toxics “Hot Spots” Information and Assessment (§44300, *et seq.*). ARB, working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies TACs. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified TAC below a specific threshold based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxics (T-BACT). The program is administered by the ARB. Air quality control agencies, including the SCAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by ARB.

5.3.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid for potential impacts to air quality through the design of the Project.

The Project includes the following design features, which are designed to reduce the Project's air quality emissions and are incorporated into the Project's emissions analysis:

- The Project will include a system of bikeways integrated into the design of the community to encourage bicycle travel as an alternative to automobile;
- The Project will include a system of pedestrian access integrated into the design of the community to encourage pedestrian travel as an alternative to automobile;
- The Project will include traffic calming features, such as - roundabouts, chokers, etc. into the design of the community to further encourage non-automobile travel;
- The Project includes a mix of residential and non-residential land uses;
- The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units.
- Residential and non-residential building will be 35 percent more efficient than the 2008 Title 24 part 6 building code.

- Where appliances are offered by homebuilders, Energy Star appliances will be installed in the residences;⁵
- The Project will incorporate third party HVAC commissioning for all residential and non-residential land uses;⁶ and
- The Project will include radiant (white) roofs for residential land uses.⁷

Specifically, the Specific Plan will implement sustainable design strategies that will reduce emissions and improve air quality, which are as follows (HSP, p. 1-8):

- Equip residential development with appropriate wiring for Internet access for residents to shop and work online, reducing vehicle trips.
- Sustainable development practices consistent with the 2010 California Green Building Code standards, which incorporates several sustainable features including building-level sustainability practices related to indoor/outdoor air quality.
- Reduced automobile trips through the construction of alternative modes of travel including an extensive network of biking trails and walkways connecting residential areas, schools, parks, open space, and commercial services, reducing reliance on the automobile for access to these facilities.

5.3.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project conflict with or obstruct implementation of the applicable air quality plan?*

The Air Quality Management Plan (AQMP) for the Basin sets forth a comprehensive program that will lead the Basin into compliance with all federal and state air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments and local general plans. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections and meeting the land use designation set forth in the local General Plan (SCAQMD 1993, p. 12-2). This analysis utilizes the compliance with local land use plans as the basis for its significance determination.

The Project site is designated as Planned Development in the General Plan, which is consistent with the proposed Project. However, the density of the Project is greater than that assumed in the General Plan. Therefore, the Project will result in an increase in population for the site, compared to the General Plan projections. In this way, the Project could potentially conflict with the AQMP.

However, the control measures contained within the 2012 AQMP will still apply to the Project site, and through this compliance, the Project will not obstruct implementation of the 2012 AQMP. Such control

⁵ Note: This feature has small quantitative reduction associated with it. The emissions estimated in ENVIRON(a) do not include this quantitative reduction providing a conservative emissions estimate.

⁶ Ibid.

⁷ Ibid.

measures include, for example, further reductions from residential wood burning devices, VOC reductions from architectural coatings, and reductions from commercial space heating. Moreover, the traffic control measures in the 2012 AQMP were developed and adopted by Southern California Association of Governments as part of their 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) that provide emissions reductions from on-road mobile sources based on the changes in the patterns and modes by which the regional transportation system is used (AQMP EIR, pp. 5-1 to 5-2). One particular RTP/SCS strategy that is applicable to the Project is “Active Transportation,” which integrates land use and transportation to improve the jobs/housing balance. As discussed in Section 6, Consistency with Regional Plans, in this DEIR, the City is currently jobs poor with a 0.39:1 jobs-to-housing ratio and is projected to improve the jobs-to-housing ratio in the coming decades but will remain jobs poor, achieving a 0.45:1 ratio by 2035. The Project will add between 124 and 451 jobs to the City, all depending on the Neighborhood Commercial overlay, and a potentially greater number of jobs than the existing entitlements per Sunrise Ranch, which would generate 160 jobs based on the same generation rate of 1 job per 500 square feet of commercial space. Therefore, the Project will improve the jobs-to-housing balance in the City and would likely reduce vehicle miles traveled (VMT) within the sub-region thereby reducing associated air pollution. For these reasons, the proposed Project would not conflict with or obstruct implementation of the AQMP and the impact is considered **less than significant without mitigation**.

Threshold: *Would the proposed Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Air quality impacts can be divided into short-term and long-term impacts. Short-term impacts are usually related to construction and grading activities. Long-term impacts are usually associated with build-out conditions and long-term operations of a project. Both short-term and long-term air quality impacts can be analyzed on a regional and localized level. Regional air quality thresholds examine the effect of a project’s emissions on the air quality of the Basin, while localized air quality impacts examine the effect of a project’s emissions on the neighborhood around the Project site.

The following information was obtained from the AQTR which is located in Appendix C of this DEIR.

Regional Emissions Analysis

The thresholds contained in the SCAQMD CEQA Air Quality Handbook are considered regional thresholds (or mass daily thresholds) and are shown in **Table 5.3-B**. These regional thresholds were developed based on the SCAQMD’s treatment of a major stationary source.

Table 5.3-B – SCAQMD CEQA Regional Significance Thresholds

Emission Threshold	Units	VOC	NO _x	CO	SO _x	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operations	lbs/day	55	55	550	150	150	55

Short-Term Construction Emissions

Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related equipment. Short-term impacts will also include emissions generated

during construction as a result of operation of personal vehicles by construction workers, asphalt degassing, and architectural coating (painting) operations.

Short-term emissions were evaluated using the CalEEMod™ version 2011.1.1 computer program, unless otherwise noted.

The Project area will be developed in five Project phases over a multi-year time frame (see **Figure 3-11 – Conceptual Phasing Plan**). Project phases 4 and 5 will be overlapped in timeframe, thus, for purposes of the air quality analysis, phases 4 and 5 were combined into one construction phase. The construction is anticipated to start in 2015 and is anticipated to be completed in 2027, but the analysis is conservatively based on construction between 2014 and 2023. (ENVIRON(a), p. 7)

The major construction activities evaluated within each phase of the air quality analysis for the Project are as follows:

- Site preparation: Involves clearing vegetation (grubbing and tree/stump removal) and stones prior to grading.
- Grading: Involves the cut and fill of land to ensure the proper base and slope for the construction foundation.
- Building construction: Involves the construction of structures and buildings.
- Architectural coating: Involves the application of coatings to both the interior and exterior of buildings or structures.
- Paving: Involves the laying of concrete or asphalt such as in parking lots or roads.

The specific construction schedule assumptions for each phase are provided in **Table 5.3-C – Construction Schedule**. The construction equipment mix assumed for each phase are provided in **Table 5.3-D – Construction Equipment Mix**, which were assumed to be identical in each Phase of development. The analysis assumed no soil import or export during grading activities, but evaluated fugitive dust emissions from on-site earth movement, which is shown in **Table 5.3-E – Excavation and Grading Volumes**. The emissions calculations are intended to estimate maximum daily emissions. Each piece of equipment was assumed to be operated for 10 hours a day, six days a week during a given activity. It should be noted that while the exact construction schedule and equipment mix may vary between the two overlay options, the maximum daily emissions are not expected to be higher than that estimated, given the conservative assumptions included in this analysis. (ENVIRON(a), p. 7)

Table 5.3-C – Construction Schedule

Project Phase	Construction Activity	Start Date	End Date	Total Work Days
Phase 1	Site Preparation	8/2/14	9/15/2014	38
	Grading	9/16/2014	6/15/2015	234
	Trenching	2/15/2015	7/15/2015	129
	Paving	3/15/2015	9/15/2015	158

Project Phase	Construction Activity	Start Date	End Date	Total Work Days
	Building Construction	4/15/2015	4/15/2016	315
	Architectural Coatings	5/15/2016	12/31/2016	198
Phase 2	Site Preparation	1/10/2017	2/28/2017	43
	Grading	3/1/2017	12/31/2017	262
	Trenching	8/15/2017	1/31/2018	146
	Paving	9/15/2018	2/15/2019	132
	Building Construction	10/15/2018	8/15/2019	262
	Architectural Coatings	11/15/2018	9/15/2019	261
Phase 3	Site Preparation	10/1/2020	11/15/2020	39
	Grading	11/16/2020	5/31/2021	169
	Trenching	2/15/2021	6/15/2021	104
	Paving	3/15/2021	7/15/2021	106
	Building Construction	4/10/2021	12/10/2021	210
	Architectural Coatings	5/1/2021	2/1/2022	237
Phase 4/5	Site Preparation	2/10/2022	3/31/2022	43
	Grading	4/1/2022	1/15/2023	248
	Trenching	7/1/2022	2/15/2023	197
	Paving	8/1/2022	4/15/2023	222
	Building Construction	9/1/2022	7/1/2023	261
	Architectural Coatings	10/1/2022	8/1/2023	261

Source: ENVIRON(a), Table 5. *Construction work week assumed to be six days per week.

Table 5.3-D – Construction Equipment Mix

Construction Activity	Equipment Type	Unit Amount	Hours/Day
Site Preparation	Rubber Tired Dozers	3	10
	Tractors/Loaders/Backhoes	4	10
Grading	Excavators	2	10
	Graders	1	10
	Rubber Tired Dozers	1	10
	Scrapers	10	10
	Tractors/Loaders/Backhoes	2	10
Trenching	Trenchers	1	10
Building Construction	Cranes	1	10
	Forklifts	3	10
	Generator Sets	1	10
	Tractors/Loaders/Backhoes	3	10
	Welders	1	10
Paving	Pavers	3	10
	Paving Equipment	2	10
	Rollers	2	10
Architectural Coating	Air Compressors	1	10

Source: ENVIRON(a), Table 6. Equipment mix assumed to be same for each Phase of Project development.

Table 5.3-E – Excavation and Grading Volumes

Project Phase	Mass Excavation	Corrective Grading	Total Volume of Earth Moved	Total Altered Areas (Acres)
	Cubic yards			
1	3,500,000	2,400,000	5,900,000	366
2	3,300,000	2,000,000	5,300,000	329
3	1,700,000	800,000	2,500,000	155
4/5	3,000,000	2,600,000	5,600,000	347
Total	11,500,000	7,800,000	19,300,000	1,196

Source: ENVIRON(a), Table 7.

Table 5.3-F – Summary of Construction Emissions, shows the Project’s maximum daily construction emissions for each year of construction, based on the assumptions outlined above and include VOC off-gassing emissions associated with architectural coatings and asphalt paving as well as the on-road construction trip emissions associated with vehicle exhaust, and evaporative and dust emissions as estimated by CalEEMod™. For the results of individual activities, please see Tables 9 through 11 of the AQTR in Appendix C.

Table 5.3-F – Summary of Construction Emissions

Year	Maximum Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Thresholds	75	100	550	150	150	55
2014	34	279	142	0	28	20
2015	39	283	189	0	28	16
2016	100	48	69	0	13	3
2017	29	222	126	0	26	18
2018	49	66	90	0	17	4
2019	47	57	83	0	16	4
2020	24	169	111	0	23	15
2021	68	168	156	0	23	10
2022	108	190	181	0	36	17
Maximum	108	283	189	0	36	20
Exceeds Threshold?	Yes	Yes	No	No	No	No

Source: ENVIRON(a), Table 12.

Note: PM-10 and PM-2.5 emissions are controlled by watering the construction site twice daily resulting in a 50% reduction.

As shown in **Table 5.3-F**, above, criteria pollutant emissions from construction of the Project do not exceed the thresholds for CO, SO₂, PM-10, or PM-2.5 in any year. Project construction emissions do exceed thresholds for VOC and NO_x during multiple years. Specifically, the VOC and NO_x emissions are estimated to exceed the threshold in two of nine years and six of nine years, respectively.

Long-Term Operation Emissions

Long-term operational emissions occur after construction and include area sources, energy usage, and mobile sources. The criteria pollutants from these sources were estimated using CalEEMod™.

Area source emissions include hearths, stationary combustion emissions of natural gas used for space and water heating, yard and landscape maintenance assumed to occur throughout the year in Southern California, consumer use of solvents and personal care products, and an average building square footage to be repainted each year. Pursuant to SCAQMD Rule 445, all fireplaces within the Project are assumed to be natural gas. Additionally, the Project will be designed to allow fireplaces within only 57.8 percent of all dwelling units. The emissions from natural gas combustion in buildings, excluding hearths, could be considered an area source, but are reported separately in CalEEMod™ in the emissions associated with building energy use. The emissions from natural gas combustion reflect the Project's design feature of constructing more energy efficient buildings (residential and non-residential) by exceeding the 2008 Title 24 standards in part 6 of the building code by 35 percent. (ENVIRON(a), pp. 11–13)

Mobile source emissions associated with on-road vehicle use are generated from residents, workers, customers, and delivery vehicles visiting the land use types in a project site. The emissions associated with on-road mobile sources includes running and starting exhaust emissions, evaporative emissions, brake and tire wear, and fugitive dust from paved and unpaved roads. Starting and evaporative emissions are associated with the number of starts or time between vehicle uses and the assumptions used in determining these values are described below. All of the other emissions are dependent on VMT. Traffic emissions were estimated using the trip rates specified in the Project-specific Traffic Study (Appendix M) and CalEEMod™ default inputs. Trip reductions were also estimated to result from incorporation of Transportation Demand Management (TDM) strategies due to the increased frequency in telecommuting by residents, traffic calming features, infrastructure for bicycles, pedestrians, and transit described under section 5.3.4 (Project Design Features). The traffic engineers also prepared a Project-specific assessment of internal and external trip lengths to calculate an appropriate VMT estimate for the Project site because the CalEEMod™ defaults are regional estimates that may either over- or underestimate conditions in the Project area. For a detailed description of the mobile source emissions estimates, see the AQTR in Appendix C. (ENVIRON(a), pp. 13–16)

Additionally, the traffic emissions estimates do not include the benefit of regulatory requirements implemented for greenhouse gas reductions from the Pavley (AB 1493) and Advanced Clean Cars program. While there is an expectation that the increased fuel efficiency would also help reduce criteria pollutant emissions, CalEEMod™ does not incorporate a specific estimate or the benefits to criteria air pollutants. (ENVIRON(a), p. 13)

Table 5.3-G – Summary of Operational Emissions, provides a summary of the emissions by source that are estimated to result from operation of the Project “with” and “without” the Neighborhood Commercial overlay.

Table 5.3-G – Summary of Operational Emissions

Source	Maximum Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Thresholds	55	55	550	150	150	55
Project with NC Overlay						
Area	149	37	304	0	4	4
Energy	4	34	15	0	3	3
Traffic	196	504	1,724	6	616	32
Total	349	575	2,042	6	623	39
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	No
Project without NC Overlay						
Area	149	38	318	0	4	4
Energy	4	35	15	0	3	3
Traffic	182	466	1,610	5	579	30
Total	335	540	1,943	6	587	37
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	Yes

Source: ENVIRON(a), Table 27, and 28.

Note: Emissions reported as zero are considered below the reporting level of CalEEMod™ and not necessarily equal to zero.

The estimated emissions show that the regional operational maximum daily emissions for both the Project “with” and “without” NC overlay operations are less than the SCAQMD mass daily significance thresholds for SO₂ and PM-2.5, and greater than the SCAQMD mass daily significance thresholds for VOC, NO_x, CO, and PM-10. The emissions from Project “without” NC overlay were estimated to be slightly lower than the emissions from Project “with” NC overlay. The primary source of the operational emissions is the traffic mobile sources. The emissions from traffic mobile sources are expected to gradually decline in the future as cars become more fuel efficient due to existing regulations (i.e., Pavley Standard and the Advanced Clean Cars program).

Localized Emissions Analysis

SCAQMD also recommends the evaluation of localized NO₂, CO, PM-10, and PM-2.5 impacts as a result of construction and operational activities to sensitive receptors in the immediate vicinity of a project. SCAQMD identifies the following uses as sensitive receptors: long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities (SCAQMD 1993, p. 1-5). The only sensitive receptors identified within ¼ mile of the Project site were residences (ENVIRON(a), p. 21).

SCAQMD staff developed methodology to assist lead agencies in analyzing localized air quality impact from a proposed project. According to SCAQMD methodology, a localized analysis would only apply to the operational phase of a project if the project includes stationary sources (e.g., flares and turbines) and/ on-site mobile equipment. Since the Project does not include such uses during operation, the

localized analysis only evaluated construction activities. The localized impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2008). SCAQMD recommends performing project-specific air dispersion modeling for larger projects⁸ in determining localized air quality impacts. Therefore, air dispersion modeling was conducted using the SCAQMD recommended AERMOD dispersion model. (ENVIRON(a), pp. 4,18)

AERMOD incorporates multiple variables in its algorithms, including:

- Meteorological data representative of surface or upper air conditions;
- Local terrain data to account for elevation changes; and
- Physical specification of the emissions sources (e.g., location, dimensions, release height)

Dispersion model averaging times are specified based on the averaging times of ambient air quality standards and the air quality significance thresholds established by the appropriate regulatory agencies. Averaging times include 1-hour, 8-hour, 24-hour, and annual for the various pollutants (see **Table 5.3-A**). Dispersion modeling was performed using the maximum daily emissions and a complete 365-day meteorological data set from SCAQMD's station in the City of Redlands⁹ to evaluate short-term impacts. This approach is conservative since it assumes the maximum daily emissions could occur on any day, even though there is a low probability that worst-case meteorological conditions would occur at exactly the same time as when the maximum emissions would occur. (ENVIRON(a), pp. 18–19)

Two different types of emission sources were used; area sources and volume sources. Fugitive dust was represented by an area source and off-road construction equipment was represented by volume sources. The specific parameters used to analyze these sources are described below:

- Volume Sources for Off-road Equipment
 - Dimension of the volume source - 20m (meters) x 20m
 - Release Height – 5m (center of volume source above the ground)
 - Initial Lateral Dimension – 4.651m (length of side/4.3)
 - Initial Vertical Dimension – 1.4 m
- Area Sources for Fugitive Dust
 - Release Height – 0 m ground based
 - Initial vertical dimension – 1 m

The following receptors were included in the modeling per SCAQMD guidance (ENVIRON(a), p. 20):

- Fence line Receptors 100 m apart (SCAQMD Guidance)
- Fine Grid 100 m x 100 m up to 500 m from the fence line in areas with residential development

⁸ Defined as projects larger than five acres in size or more than five acres under construction at any given time.

⁹ This station was selected based on the close geographic proximity to the Project site.

- Coarse Grid 250 m x 250 m from 500 m to 1000 m from the fence line
- Sensitive Receptors are discrete receptors placed in up to ¼-mile from the fence line

Criteria pollutant impacts were evaluated at receptors where a person can be situated for an hour or longer at a time, consistent with SCAQMD guidance. Receptor heights were assumed to be one meter based on currently available documentation from SCAQMD and Office of Environmental Health Hazard Assessment (OEHHA). (ENVIRON(a), p. 20) **Table 5.3-L – Construction Air Dispersion Modeling Results**, shows the results of the localized analysis.

Table 5.3-H – Construction Air Dispersion Modeling Results

Pollutant	Averaging Time	Maximum Project Emissions (µg/m ³)	Background Pollutant Concentration (µg/m ³) ¹	Maximum Project + Background Concentration (µg/m ³)	SCAQMD Threshold (µg/m ³) ²	Exceeds threshold?
NO ₂ ³	1-hour	50	207	257	339	No
	Annual	20	44	47	57	No
CO	1-hour	43	3,434	3,476	23,000	No
	8-hour	15	2,175	2,189	10,000	No
PM-10	24-hour	3.07	N/A	N/A	10.4	No
	Annual	0.61	N/A	N/A	1.0	No
PM-2.5	24-hour	1.81	N/A	N/A	10.4	No

Source: ENVIRON(a), Table 29

Notes: ¹ Background concentrations based on averaging results for years 2008-2010.

² SCAQMD Air Quality Significance Thresholds for ambient air quality obtained from <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>

³ The NO₂/NO_x conversion rate assumed to be 75%.

As shown in **Table 5.3-H**, air quality impacts from construction will not exceed SCAQMD ambient air quality significance thresholds. Air quality impacts from construction will also be below the federal 1-hour NO₂ (0.100 ppm or 188 µg/m³) standard using the 98th percentile background value as required for this standard. It should be noted that while the exact construction schedule and equipment mix may vary from the current analysis, the maximum daily emissions are not expected to be higher than that estimated, as construction emissions are based on conservative assumptions. Further, the construction modeling results are based on the combination of maximum emissions that may occur with the worst-case meteorological conditions. Thus, while it is possible that these estimates of ambient air quality concentrations may occur, these are highly conservatively estimates, and thus, they may never occur. (ENVIRON(a), p. 21)

CO “Hot Spots” Analysis

A CO “hot spot” is a localized concentration of CO that is above state or federal 1-hour or 8-hour AAQS. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles.

Based on the information presented below, a CO “hot spot” analysis is not needed to determine whether the change in level of service (LOS) of an intersection in the Project would have the potential to result in exceedances of the CAAQS or NAAQS.

The analysis prepared for CO attainment in the Basin by SCAQMD can be used to assist in evaluating the potential for CO exceedances in the Basin. CO attainment was thoroughly analyzed as part of the SCAQMD’s 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region’s unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and AQMPs. (ENVIRON(a), p. 22)

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated in the 1992 CO Plan and subsequent 2003 AQMP was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm, which indicates that the most stringent 1-hour CO standard (20.0 ppm) would likely not be exceeded until the daily traffic at the intersection exceeded more than 400,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the LOS in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be LOS E at peak morning traffic and LOS F at peak afternoon traffic. (ENVIRON(a), p. 22)

At build-out of the Project, the highest average daily trips at an intersection would be approximately 61,190 at the Boulder Avenue/Greenspot Road intersection, which is below the daily traffic volumes that would be expected to generate CO exceedances as evaluated in the 2003 AQMP. This daily trip estimate is based on the peak hour conditions of the intersection. There is no reason unique to the Basin’s meteorology to conclude that the CO concentrations at the Boulder Avenue/Greenspot Road intersection would exceed the 1-hour CO standard if modeled in detail, as based on the studies undertaken for the 2003 AQMP. (ENVIRON(a), p. 22)

Therefore, the Project would not result in the creation of a CO hot spot in the Project area.

Conclusions

Based on the regional emissions analysis for the proposed Project with and without the NC overlay, the short-term construction emissions will exceed SCAQMD thresholds for VOC and NO_x. The Project’s long-

term emissions with and without the NC overlay will exceed the SCAQMD regional thresholds for VOC, NO_x, CO, and PM-10. The primary source of the operational emissions is the traffic mobile sources.

Based on the localized analysis of the proposed Project, the short-term construction of the Project will not result in localized air quality impacts to sensitive receptors in the Project vicinity. It should be noted that the construction emissions are based on conservative assumptions to represent the maximum level of construction activity that may occur on the Project site, and also, the construction modeling results is based on the combination of maximum emissions that may occur with the worst-case meteorological conditions. Thus, while it is possible that these estimates of ambient air quality concentrations may occur, these are highly conservative estimates, and thus, they may never occur. The Project does not contain any uses that would require a localized analysis from operations. Additionally, the proposed Project will not form any CO hot spots in the Project area.

Therefore, the Project will violate an air quality standard or contribute substantially to an existing or projected air quality violation, and impacts are considered to **significant and unavoidable without implementation of mitigation measures**. Mitigation measures **MM AQ 1** through **MM AQ 4** will be implemented to reduce air quality impacts. Please see Section 5.3.7, below, for a discussion of impacts after mitigation measures have been incorporated.

Threshold: *Would the Project 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)?*

As previously stated in Section 5.3.3.1 (Related Regulations, Criteria Air Pollutants), the portion of the Basin within which the Project site is located is designated as a non-attainment area for NO₂ under state standards, and for ozone, PM-10, and PM-2.5 under both state and federal standards.

SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same.¹⁰ Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. The SCAQMD mass daily significance thresholds for VOC and NO_x are exceeded during construction. Thus, the Project would have a cumulatively considerable increase in emissions due to construction-related VOC and NO_x. In terms of localized air quality impacts, construction of the Project would not have a cumulatively considerable impact due to criteria pollutant emissions. For the Project “with NC overlay” and “without NC overlay”, operational emissions would exceed the SCAQMD’s mass daily threshold for VOC, NO_x, CO, and PM-10 emissions. Thus, the Project would have a cumulatively considerable increase in emissions due to operational-related VOC, NO_x, CO, and PM-10 emissions.

Therefore, the Project is considered to have a cumulatively considerable net increase in non-attainment pollutants in the region under both state and federal standards and the impact is considered **significant and unavoidable without the implementation of mitigation measures**. Mitigation measures **MM AQ 1** through **MM AQ 4** will be implemented to reduce air quality impacts. Please see Section 5.3.7, below, for a discussion of impacts after mitigation measures have been incorporated.

¹⁰ The only exception is the hazard index significance threshold for toxic air contaminants.

Threshold: *Would the proposed Project expose sensitive receptors to substantial pollutant concentrations?*

The proposed Project consists of a mixed-use residential and commercial specific plan. The majority of operational emissions are from mobile sources (traffic). Sensitive receptors, existing residences in this case, and the analysis of Project-related impacts upon those in the Project vicinity were evaluated in the threshold above.

As previously discussed and shown in **Table 5.3-L**, above, air quality impacts from construction would not exceed SCAQMD air quality significance thresholds, except for the annual PM-10 significance threshold. However, there would be no long-term exceedances from Project operations because the Project does not contain sources that require localized analysis nor would the Project result in CO hot spots.

Due to the localized PM-10 impacts during construction, impacts are considered **significant and unavoidable without the implementation of mitigation measures**. Mitigation measures **MM AQ 1** through **MM AQ 4** will be implemented to reduce air quality impacts. Please see Section 5.3.7, below, for a discussion of impacts after mitigation measures have been incorporated.

Threshold: *Would the proposed Project create objectionable odors affecting a substantial number of people?*

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source, the wind speeds and direction, and the sensitivity of the receiving location each contribute to the intensity of the impact. While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public and generate citizen complaints. (ENVIRON(a), p. 23)

The human nose is still the best means of determining the strength of an odor. Precise documentation of the strength and nature of an odor is generally unavailable because of the large number of gases involved and their effects on each other. Additionally, odor measurement is difficult because no instrument has been found to successfully measure odor and all its components.

Construction equipment exhaust would be a temporary source of odors that could occur in the immediate vicinity of the Project site. Odors generated during construction will be short-term and not result in a long-term odorous impact to the surrounding area.

Regarding odors during operation of the Project, only the potential on-site wastewater treatment facility (see Area A on **Figure 3-8**) south of the New Greenspot Bridge represents a type of land use that is identified in the ARB Air Quality and Land Use Handbook as a common source of odor complaints (ARB 2005, p. 34).

There are no sensitive receptors in the adjacent to Area A where the potential on-site wastewater treatment facility would be located. The nearest existing sensitive receptor is approximately 0.7 miles away, and as odor intensity decreases as distance from the source increases, this distance will facilitate fresh air to mix with any odors, resulting in considerable decreased odor intensity. Moreover, given the relatively small size of the wastewater treatment facility, the anticipated design to incorporate odor

minimizing technology and controls, and the SCAQMD rules and regulations (e.g., Rule 201 and 203 requiring permits and Rule 402 nuisance rule), it is anticipated that there will not be any odor issues related to the Project (ENVIRON(a), p. 23). Therefore, the Project's construction and operation will not create objectionable odors affecting a substantial number of people and the impact is considered **less than significant without mitigation required**.

5.3.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measure that could minimize significant adverse impacts (State *CEQA Guidelines* Section 15126.4) Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts to air quality or to reduce to below the level of significance. The following measures shall be implemented to eliminate or reduce potentially significant impacts to air quality.

Construction mitigation measures:

MM AQ 1: During construction, the developer or construction contractor shall ensure mobile construction equipment is maintained in good condition and properly tuned per manufacturer's specifications. Equipment maintenance records and equipment design specification data sheets shall be available during construction. Compliance with this measure shall be subject to periodic inspections by the City.

MM AQ 2: During construction, the developer or construction contractor shall ensure electricity from power poles shall be used instead of from temporary diesel- or gasoline-powered generators where economically and physically feasible. Approval will be required by the City prior to issuance of grading permits.

MM AQ 3: During construction, the developer or construction contractor shall submit a traffic control plan that shall minimize vehicle and truck idling time during construction through the implementation of traffic control measures (e.g., including turn lanes during construction activities, scheduling of construction activities to minimize congestion, parking configuration to minimize traffic interference).

MM AQ 4: During construction, the construction contractor shall implement dust control measures in accordance with SCAQMD Rule 403. The construction contractor shall include in construction specifications the fugitive dust control measures in accordance with SCAQMD Rule 403, with construction controls being at least as effective as the following, which were incorporated in the construction emissions estimates:

- Watering active construction areas at least twice daily to minimize fugitive dust emissions;¹¹
- Maintaining soil stabilization of inactive construction areas with exposed soil via water, non-toxic soil stabilizers, or replaced vegetation;
- Covering all haul trucks or maintaining at least six inches of freeboard;

¹¹ Note that the control efficiency of watering is dependent on numerous variables such as soil/ground conditions, temperature, and vehicle travel specifics. For unpaved roads, increased frequency and/or water amounts are expected to improve the control efficiency.

- Suspending earthmoving operations or increasing watering to meet Rule 403 criteria if winds exceed 25 mph;
- Minimizing track-out emissions using the allowable methods; and,
- Limiting vehicle speeds to 15 miles per hour or less in staging areas and on haul roads.

5.3.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The Project is not anticipated to conflict with implementation of the AQMP. This impact is considered **less than significant without mitigation**.

The Project's construction and operation will not create objectionable odors affecting a substantial number of people and the impact is considered **less than significant without mitigation**.

The Project's emissions exceed applicable SCAQMD thresholds during construction and operation. Implementation of mitigation measures **MM AQ 1** through **MM AQ 4** during construction of the Project will reduce the short-term construction emissions. However, there are either no quantitative reductions associated with these mitigation measures or the reductions were already included in the emissions estimates summarized above. Thus, short- and long-term impacts from the Project remain **significant and unavoidable after implementation of mitigation measures**.

5.3.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The cumulative analysis for air quality is based on the guidance provided by SCAQMD, which considers projects that exceed the project-specific significance thresholds to be cumulatively considerable. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

As previously stated, construction-related daily emissions are less than SCAQMD's mass daily significance thresholds for CO, SO₂, PM-10, and PM-2.5, and greater than the SCAQMD mass daily significance thresholds for VOC and NO_x. Other construction projects in the vicinity of the Project site could also contribute emissions that would cumulatively increase these concentrations. Cumulative impacts associated with CO, SO₂, PM-10 and PM-2.5 construction emissions would be less than significant. In terms of localized air quality impacts, construction of the Project would not have a cumulatively considerable impact.

The Project's operational emissions (with or without the Neighborhood Commercial overlay) will exceed the SCAQMD's threshold for VOC, NO_x, CO, and PM-10 emissions. Thus, the Project would have a cumulatively considerable increase in emissions due to operational-related VOC, NO_x, CO, and PM-10 emissions.

Mitigation measures will be implemented to reduce these emissions, but will not reduce impacts to less than significance levels. Thus, the Project's impacts remain **cumulatively significant and unavoidable**.

Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.3.9 References

The following references were used in the preparation of this section of the DEIR:

- ARB 2005 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Perspective*, April 2005. (Available at <http://www.arb.ca.gov/ch/landuse.htm>, accessed on October 24, 2013.)
- AQMP South Coast Air Quality Management District, *2012 Air Quality Management Plan*, December 2012. (Available at <http://www.aqmd.gov/aqmp/2012aqmp/Final/index.html>, accessed October 24, 2013.)
- AQMP EIR South Coast Air Quality Management District, *Final Program Environmental Impact Report for the 2012 Air Quality Management Plan*, December 7, 2012. (Available at http://www.aqmd.gov/ceqa/documents/2012/aqmd/finalEA/2012AQMP/2012aqmp_fpeir.html, accessed October 24, 2013.)
- ENVIRON(a) ENVIRON, *Air Quality Technical Report, Harmony Specific Plan, Highland, California*, January 13, 2014. (Appendix C)
- EPA 2005 U.S. Environmental Protection Agency, *Six Common Air Pollutants*, (Available at <http://www.epa.gov/air/urbanair/>, accessed October 24, 2013.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- SCAQMD South Coast Air Quality Management District, *Air Quality Data 2010–2012*. (Available at <http://www.aqmd.gov/smog/historicaldata.htm>, accessed October 2013.)
- SCAQMD 1993 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)
- SCAQMD 2005 South Coast Air Quality Management District, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005. (Available at http://www.aqmd.gov/prdas/aqguide/doc/aq_guidance.pdf, accessed October 24, 2013.)
- SCAQMD 2008 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008 (Available at <http://www.aqmd.gov/ceqa/handbook/LST/LST.html>, accessed on October 24, 2013.)

5.4 Biological Resources

This section evaluates the Project's potential impacts related to biological resources.

The following discussion of potential impacts is based on the *Habitat Assessment* prepared by RBF Consulting, January 2014 (RBF(a)), and the *Greenspot Jurisdictional Delineation Report* prepared by VCS Environmental, October 2012 (VCS). These reports are contained in Appendix D.1 and Appendix D.2, of this document, respectively.

5.4.1 Setting

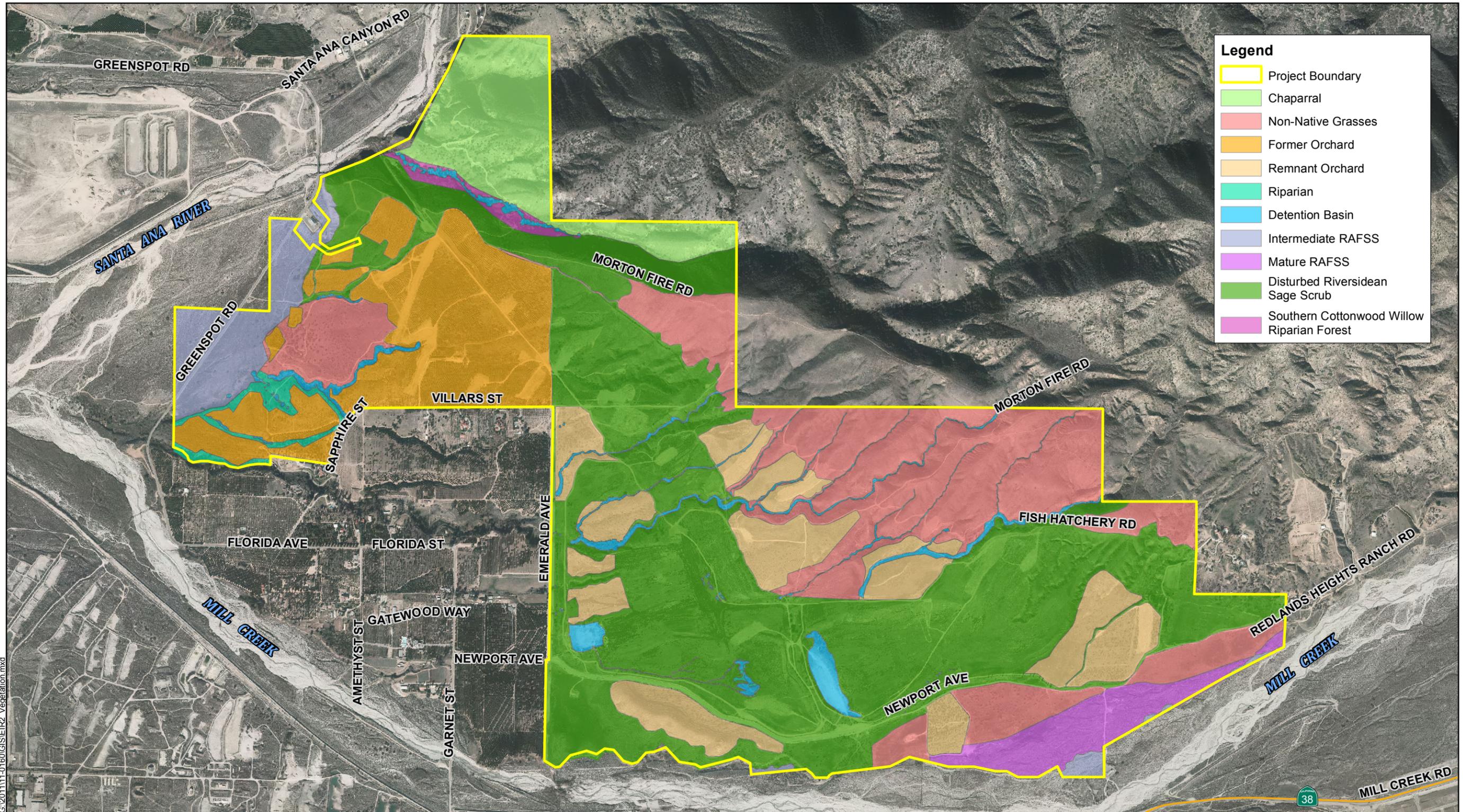
The Project site consists of approximately 1,657 acres situated in the eastern section of the City of Highland, San Bernardino County, California. The Project site is irregular in shape and is generally bounded by Mill Creek to the south, the Santa Ana River and Greenspot Road to the west, the San Bernardino National Forest to the north, and unincorporated San Bernardino County to the east. Elevation ranges from approximately 1,800 to 2,700 feet above mean sea level. The Project site is characterized as mostly gently sloping and rolling terrain in the south and west with moderately to steeply sloping foothills in the north and northeast. (RBF(a), p. 11) The site is predominantly vacant, but has been substantially modified by past agricultural and irrigation practices, surface mining operations (as a borrow site), and water supply infrastructure (VCS, p. 1). Approximately six million cubic yards of earth was excavated from the site for construction of the Seven Oaks Dam from an approximately 830-acre area known as the borrow site (VCS, p. 1, 5).¹

The surrounding area is a combination of agricultural (i.e. citrus orchards), rural residential, and the Santa Ana River to the west, Mill Creek to the south, and the San Bernardino Mountains to the north of the Project site. A few residences are also located just east of the Project site and the Seven Oaks Dam is located north of the Project site.

5.4.1.1 Vegetation

Six main plant communities were identified with varying levels of disturbances within the Project boundaries: Riversidean alluvial fan sage scrub (RAFSS), Riversidean Sage Scrub (RSS), riparian, chaparral, agricultural, and ruderal. Refer to **Figure 5.4-1 – Vegetation Map**, for the location of vegetation community types in the Project site. Human activities such as agricultural and irrigation practices as well as surface mining operations (borrow for Seven Oaks Dam) have substantially modified natural habitats occurring on the Project site. Additionally, the plant communities have been subjected to naturally occurring wildfires, the last significant fire, the Florida Fire occurred on August 28, 2011 and burned 67 acres. The combination of human disturbances and wildfires on the Project site have resulted in significant modifications to the native plant communities on the Project site and may have reduced the connectivity of the San Bernardino National Forest found to the north of the Project site and to both the Santa Ana River and Mill Creek found along the southern and western boundaries of the Project site (RBF(a), p. 13).

¹ Although the Jurisdictional Delineation indicates approximately five million cubic yards of soils was exported, other estimates report approximately six million cubic yards of export.



G:\2011\11-0160\GIS\EIR2_Vegetation.mxd

Source: RBF, 2014;
Eagle Aerial, 2012



0 1,000 2,000 3,000
Feet

Figure 5.4-1 – Vegetation Map
Harmony Specific Plan Draft EIR

The following is a discussion of the plant communities identified on the Project site and shown on **Figure 5.4-1**:

Riversidean Alluvial Fan Sage Scrub (RAFSS) – approximately 117 acres

The RAFSS habitat occurring on the Project site is associated with the flood plains along the Santa Ana River and Mill Creek. These two streams flow in a southwesterly direction adjacent to the Project site and the RAFSS habitat associated with them extend inside the western and southern boundaries. The RAFSS habitat on the western boundary of the Project site is a mature RAFSS community composed of chamise (*Adenostoma fasciculatum*), California brickellbush (*Brickellia californica*), hoary leaf ceanothus (*Ceanothus crassifolius*), chaparral whitethorn (*Ceanothus leucodermis*), California juniper (*Juniperus californica*), California buckwheat, deerweed, holly-leaved cherry (*Prunus ilicifolia*), spiny redberry (*Rhamnus crocea*), and white sage (*Salvia apiana*). Whereas the RAFSS habitat on the southern boundary is an intermediate RAFFS community composed of scalebroom (*Lepidospartum squamatum*), California buckwheat, brittlebush, matchweed (*Gutierrezia californica*), broom matchweed (*Gutierrezia sarothrae*), telegraph weed (*Heterotheca grandiflora*), coastal goldenbush (*Isocoma menziesii*), interior goldenbush (*Ericameria linearifolia*), hairy yerba santa (*Eriodictyon trichocalyx*), California sagebrush (*Artemisia californica*), Coastal prickly pear (*Opuntia littoralis*), valley cholla (*Opuntia parryi*), shrubby butterweed (*Senecio flaccidus*), and Our Lord's candle (*Yucca whipplei*).

The RAFSS habitat provides suitable habitat for both federally and state endangered Santa Ana River woollystar and slender-horned spineflower, as well as the federally endangered San Bernardino kangaroo rat (RBF(a), p. 13).

Riversidean Sage Scrub (RSS) – 124-acres

The predominant plant community occurring on the Project site is a RSS community occurring in various stages of disturbance and recovery. Areas of higher quality undisturbed RSS are primarily associated with the sides of drainage features traversing the Project site. These undisturbed RSS areas were determined to have the highest potential to support the federally threatened coastal California gnatcatcher (RBF(a), p. 13).

Disturbed RSS – 668acres

The majority of the disturbed RSS is composed of California buckwheat (*Eriogonum fasciculatum*), primarily in the central portion of the site. California buckwheat is typically used to re-vegetate areas that have been disturbed and is one of the early pioneer species encountered during natural recovery of a native RSS plant community. Other areas of disturbed RSS are dominated by brittle bush (*Encelia farinosa*) and California sagebrush (*Artemisia californica*). The brittle bush dominated disturbed RSS is primarily found on the northern and southern portions of the Project site, and the California sagebrush dominated disturbed RSS is primarily found on the northern and central portions of the property associated with buckwheat (RBF(a), p. 15).

Riparian – approximately 33 acres

Various areas on the Project site supports riparian vegetation found in association with the drainage features, irrigation channels, and excavated borrow pits. The majority of these drainages occur on the southwest corner of the Project site just east of Greenspot Road and are dominated by large riparian

woodland species such as Eucalyptus, Fremont cottonwood (*Populus fremontii*), and Sycamore (*Platanus racemosa*). Stands of salt cedar (*Tamarix* spp.) can also be found along some drainage features (RBF(a), p. 15).

Southern Cottonwood Willow Riparian Forest – 13-acres

This habitat is found along Morton Creek, in the northwest portion of the Project site abutting the San Bernardino National Forest. It is a tall, multilayered, open, canopy riparian community. Southern cottonwood willow riparian forest characteristically has the potential to provide suitable habitat for both federally and stated endangered least Bell's vireo and southwestern willow flycatcher. The dominant vegetative species within this riparian forest include: Fremont cottonwood (*Populus fremontii*), black cottonwood (*P. tremuloides*), eucalyptus and several tree willows (*Salix* spp). Characteristic species, in addition to the eucalyptus and cottonwood, include black willow (*S. goodingii*) narrow-leaved willow (*S. exigua*), arroyo willow (*S. lasiolepis*), red willow (*S. laevigata*), mulefat (*Baccharis salicifolia*), Sycamore (*Platanus racemosa*) and elderberry (*Sambucus mexicana*). The under story consists of cattail (*Typha* spp.) and other native herbaceous riparian plants (RBF(a), p. 15).

Southern Willow Scrub / Mulefat Scrub – 15-acres

The southern willow scrub/mulefat scrub habitat is located in the central portion of the Project site. This portion of the Project site has been heavily modified by human disturbances, primarily the borrow site activities associated with the construction of the Seven Oaks Dam. The modified conditions have resulted in the development of a deep erosional feature or pit. This pit concentrates sufficient sheetflow runoff to support an isolated riparian plant community of willow trees and mulefat (RBF(a), p. 15).

Ponded Area – 5-acres

A 5-acre depression or pond is located in the central portion north of Newport Avenue that retains water during the wet season. The ponded area is primarily un-vegetated. A limited amount of vegetation occurs along the north side of the pond and consists of an early seral community of mulefat (*Baccharis salicifolia*) (RBF(a), p. 15).

Chaparral – 106 acres

A chaparral plant community occurs at the northern most boundary of the Project site north of Morton Creek at the interface with the San Bernardino National Forest. This plant community is dominated by chamise (*Adenostoma fasciculatum*), California juniper (*Juniperus californica*), and matchweed (*Gutierrezia californica*) (RBF(a), p. 16).

Agricultural – 256 acres

Historically, the Project site was used for agriculture production. The Project site contains several large citrus groves (RBF(b), p. 16).

Former Orchard Areas – 187-acres

Citrus trees from a former orchard remain on the northwest portion of the property. Non-native grasses and wild grapes dominate the understory of the citrus grove. This former orchard area contains live citrus trees, but the area has not been cultivated or tilled, allowing the understory to become dominated by non-native vegetation. The first few rows of trees on the

Project site adjacent to Tres Lagos Street have been removed to maintain a fire break between the property and the adjacent residences. According to the County of San Bernardino, no agricultural production has not taken place on the Project site for over 20 years (RBF(a), p. 16).

Remnant Orchard Areas– 69- acres

Remnant orchards are scattered throughout the central and eastern portion of the Project site and primarily consist of Mexican elderberry (*Sambucus mexicana*), toyon (*Heteromeles arbutifolia*) and early successional RSS plant species, such as California buckwheat and brittle bush, and non-native grasses (RBF(a), p. 16).

Ruderal – 334 acres

Several areas on the Project site support early successional non-native grasses/ruderal communities that have become established following the abandonment of agricultural activities and surface mining operations. Non-native weedy species found within this community include Bromes (*Bromus ssp.*), oats (*Avena ssp.*), Russian thistle (*Salsola turgus*), telegraph weed (*Heterotheca grandiflora*), ragweed (*Ambrosia artemisiifolia*), common sunflower (*Helianthus annuus*), and mustards (*Brassica ssp.*) (RBF(a), p. 16).

Non-Native Grasslands – 328-acres

The hills on the northeastern boundary of the Project site abutting the San Bernardino National Forest were recently disturbed by a wildfire that eliminated the natural plant communities. These hills are now dominated by non-native grasses (RBF(a), p. 16).

Detention Basin – 6-acres

A 6-acre water detention basin was created in the southwest portion of the Project site north of Newport Avenue for the Seven Oaks Dam project and remains in operation today. This basin is un-vegetated and has rip-rap sides. It typically is filled with water during the winter months (RBF(a), p. 16).

For a complete list of plant species observed on-site, see Appendix B of the *Habitat Assessment* in Appendix D.1 of this DEIR.

5.4.1.2 Wildlife

The open, vacant lands and remnant orchards occurring on-site and on the surrounding properties provide ample foraging and shelter opportunities for an array of wildlife species. Most of the wildlife activity observed on the Project site during the habitat assessment and subsequent focused surveys consisted of avian species. Avian species observed and/or heard during the habitat assessment were American crow (*Corvus brachyrhynchos*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), Cooper’s hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), cactus wren (*Campylorhynchus brunneicapills*), phainopepla (*Phainopepla nitens*), white-tailed kite (*Elanus leucurus*), black-headed grosbeak (*Pheucticus melanocephalus*), mourning dove (*Zenaida macroura*), California quail (*Callipepla californiaca*), western meadow lark (*Sturnella neglecta*), ladder-backed woodpecker (*Picoides scalaris*), black-tailed gnatcatcher (*Poliophtila melanura*), Anna’s hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Spinus psaltria*), western kingbird (*Tyrannus melancholicus*), northern mockingbird (*Mimus polyglottos*), Bullock’s oriole (*Icterus bullockii*), barn owl

(*Tyto alba*), great-horned owl (*Bubo virginianus*), black phoebe (*Sayornis nigricans*), bushtit (*Psaltriparus minimus*), and California thrasher (*Toxostoma redivivum*). (RBF(a), pp. 16-17)

The white-tailed kite was observed foraging over the abandoned orchard along the west side of the property on March 9, 2011. It was not observed in association with a nest and was not observed after that date. (RBF(a), p. 17)

Mammalian species observed during the habitat assessment were cottontail rabbits (*Sylvilagus audubonii*), black-tailed jackrabbits (*Lepus californicus*), Botta's pocket gopher (*Thomomys bottae*), San Diego desert woodrat (*Neotoma lepida intermedia*), and ground squirrels (*Otospermophilus beecheyi*). Other mammals observed during the focused surveys included northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*). (RBF(a), p. 17)

Reptilian species observed during the habitat assessment were southern pacific rattlesnake (*Crotalus oreganus helleri*), pacific gopher snake (*Pituophis catenifer catenifer*), western fence lizard (*Sceloporus occidentalis*), side-blotch lizard (*Uta stansburiana*), and granite spiny lizard (*Sceloporus orcutti*).

No amphibians were observed on the Project site. Although there are a few isolated ponds on the Project site, they do not retain water following storm events for any significant period of time. The only drainage found on-site with a continuous source of water is Morton Creek located in the northern portion of the Project site. This area will not be developed; it will be maintained as open space. (RBF(a), p. 17)

Suitable habitat for the Sierra Madre yellow-legged frog (*Rana muscosa*) populations in the San Gabriel and San Bernardino Mountains include white alders, willows, sycamore, cottonwoods, conifers, and maples. The riparian habitat needs to extend at least 80 meters (262 feet) from the centerline of the stream to provide adequate areas for feeding and movement of yellow-legged frog, with a canopy overstory not exceeding 85 percent to allow sunlight to penetrate the canopy and reach the stream in order to provide basking areas for the species. While Morton Creek supports the necessary riparian vegetation and provides a year around source of water, the canyon is very steep and the stream confined to a very narrow corridor, well short of the requisite 80 meters from centerline to bank. In addition, because of the narrow corridor, the canopy is congested and over 85 percent in most of the areas along the creek, resulting in very little light penetration of the canopy. Efforts were made to assess the amphibian populations within Morton Creek during the focused surveys for other species. The qualified biologist performing focused surveys for least Bell's vireo and southwestern willow flycatcher is also qualified and experienced with yellow-legged surveys along the San Gabriel and San Bernardino Mountains. No indications of yellow-legged frog were found and it was determined that the area was unsuitable for the species. (RBF(a), p. 17)

5.4.1.3 Special-Status Plant Species

Special status plant species include those listed as endangered or threatened, proposed for listing as endangered or threatened, candidates species for listing by a federal (U.S. Fish and Wildlife Service

(USFWS)) or state (California Department of Fish and Wildlife (CDFW²)) resource agency, or considered a federal Species of Concern or state Species of Special Concern. In addition, plants included on Lists 1B, 2, 3, or 4 of the California Native Plant Society (CNPS) Inventory are also considered special-status.

Sensitive plant species were evaluated for their potential to occur within the Project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur on-site are provided in **Table 5.4-A – Special-Status Plant Species with Potential to Occur On-Site**. Four special-status plant species were observed on-site: Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), Parry’s spineflower (*Chorizanthe parryi* var. *parryi*), and Plummer’s mariposa lily (*Calochortus plummerae*)(RBF(a), Appendix B).

Table 5.4-A – Special-Status Plant Species with Potential to Occur On Site

Common Name	Scientific Name	Status			Observed On-site	Occurrence Potential
		Fed	State	CNPS		
Alvin meadow beadstraw	<i>Galium californicum</i> ssp. <i>primum</i>	-	-	1B.1	No	No Suitable Habitat
ash-gray paintbrush	<i>Castilleja cinerea</i>	FT		1B.2	No	No Suitable Habitat
Bear Valley checkerbloom	<i>Sidalcea malviflora</i> ssp. <i>dolsa</i>	-	-	1B.2	No	No Suitable Habitat
Brand phacelia	<i>Phacelia stellaris</i>	FSC	-	1B.1	No	Moderate
bird-foot checkerbloom	<i>Sidalcea pedata</i>	FE	SE	1B.1	No	Low
Bristly sedge	<i>Calochortus plummerae</i>	-	-	2.2	No	No Suitable Habitat
California satintail	<i>Imperata brevifolia</i>	-	-	2.1	No	Low
California saw-grass	<i>Cladium californicum</i>	-	-	2.2	No	Low
Hall's monardella	<i>Monardella macrantha</i> ssp. <i>hallii</i>	-	-	1B.3	No	Absent
Horn’s milk-vetch	<i>Astragalus hornii</i> var. <i>hornii</i>	-	-	1B.1	No	No Suitable Habitat
Laguna Mountains jewel-flower	<i>Streptanthus bernardinus</i>	-	-	4.3	No	No Suitable Habitat
lemon lily	<i>Lilium parryi</i>	-	-	1B.2	No	No Suitable Habitat
marsh sandwart	<i>Arenaria paludicola</i>	FE	SE	1B.1	No	Low
Mesa horkelia	<i>Horkelia cuneata</i> var. <i>puberula</i>	-	-	1B.1	No	Low

² Effective January 1, 2013, the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW), although its services and purpose have not changed. The technical reports prepared for this Project prior to this change may include references to CDFG and the Fish and Game Code, all of which coincide with the services, purpose and mission of the CDFW.

Common Name	Scientific Name	Status			Observed On-site	Occurrence Potential
		Fed	State	CNPS		
Munz's onion	<i>Allium munzii</i>	FE	ST	1B.1	No	No Clay Soils
Nevin's barberry	<i>Berberis nevinii</i>	FE	SE	1B.1	No	Low
Palmer's mariposa-lily	<i>Calochortus palmeri</i> <i>var palmeri</i>	-	-	1B.2	No	Absent
Parish's alumroot	<i>Heuchera parishii</i>	-	-	1B.3	No	No Suitable Habitat
Parish's bush-mallow	<i>Malacothamnus parishii</i>	-	-	1A	No	Low
Parish's checkerbloom	<i>Sidalcea hickmanii</i> <i>ssp. parishii</i>	-	Rare	1B.2	No	Low
Parish's desert-thorn	<i>Lycium parishii</i>	-	-	2.3	No	Low
Parish's gooseberry	<i>Ribes divaricatum</i> <i>var. parishii</i>	-	-	1A	No	Low
Parish's yampah	<i>Perideridia parishii</i> <i>ssp. parishii</i>	-	-	2.2	No	Low
Parry's spineflower	<i>Chorizanthe parryi</i> <i>var. parryi</i>	-	-	1B.1	Yes	Present
Peruvian dodder	<i>Cuscuta obtusiflora</i> <i>var. glandulosa</i>	-	-	2.2	No	Low
Plummer's mariposa-lily	<i>Calochortus plummerae</i>	-	-	1B.2	Yes	Present
Pringle's monardella	<i>Monardella pringlei</i>	-	-	1B.3	No	Moderate
Robinson's pepper-grass	<i>Lepidium virginicum</i> <i>var. robinsonii</i>	-	-	1B.2	No	Absent
salt marsh bird's-beak	<i>Chloropyron maritimum</i> <i>ssp. maritimum</i>	FE	SE	1B.2	No	No Suitable Habitat
Salt spring checkerbloom	<i>Sidalcea neomexicana</i>	-	-	2.2	No	Low
San Bernardino aster	<i>Symphotrichum defoliatum</i>	-	-	1B.2	No	Moderate
San Bernardino Mountains owl's-clover	<i>Castilleja lasiorhyncha</i>	-	-	1B.2	No	Low
San Bernardino ragwort	<i>Packera bernardina</i>	-	-	1B.2	No	No Suitable Habitat
Santa Ana River woollystar	<i>Eriastrum densifolium</i> <i>ssp. sanctorum</i>	FE	SE	1B.1	Yes	Present
silver-haired ivesia	<i>Ivesia argyrocoma</i> <i>var argyrocoma</i>	-	-	1B.2	No	Low

Common Name	Scientific Name	Status			Observed On-site	Occurrence Potential
		Fed	State	CNPS		
slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE	SE	1B.1	No	Moderate
Smooth Tarplant	<i>Centromadia pungens ssp. laevis</i>	-	-	1B.1	No	Low
Sonoran maiden fern	<i>Thelypteris puberula var. sonorensis</i>	-	-	2.2	No	Low
southern jewel-flower	<i>Streptanthus campestris</i>	-	-	1B.3	No	Low
thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT	SE	1B.1	No	Low
white-bracted spineflower	<i>Chorizanthe xanti var. leucotheca</i>	-	-	1B.2	Yes	Present
Yucaipa onion	<i>Allium marvinii</i>	-	-	1B.1	No	Absent
Source: RBF(a), Appendix B. -- Not listed. <u>Federal -USFWS</u> FE = Federal Endangered FT = Federal Threatened FSC = Federal Species of Concern <u>State-CDFW</u> SE = California Endangered ST = California Threatened		<u>California Native Plant Society (CNPS) List Categories</u> 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. <u>CNPS Threat Code Extensions</u> .1 = seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat) .2 = Fairly endangered in California (20-80% occurrences threatened) .3 = Not very endangered in California (<20% of occurrence threatened or no current threats known)				

5.4.1.4 Special-Status Wildlife Species

Special-status or sensitive wildlife species include those that are state or federally listed as threatened or endangered, rare proposed for listing as threatened or endangered, have been designated as state or federal candidates for listing, state or federal species of concern, or California Fully Protected.

Sensitive wildlife species were evaluated for their potential to occur within the Project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur on-site are provided in **Table 5.4-B – Special-Status Wildlife Species with Potential to Occur On-Site.** (RBF(a), Appendix B)

Twelve special-status wildlife species were observed on the Project site: Cooper’s hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell’s vireo (*vireo bellii pusillus*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Diego desert woodrat (*Neotoma lepida intermedia*), and black-tailed jackrabbit (*Lepus californicus*).

**Table 5.4-B – Special-Status Wildlife Species
with Potential to Occur On Site**

Common Name	Scientific Name	Status		Observed On-site	Occurrence Potential
		Fed	State		
American badger	<i>Taxidea taxus</i>	-	CSC	No	Low
Andrew's marble butterfly	<i>Euchloe hyantis andrewsi</i>	-	CSC	No	Low
black-tailed jackrabbit	<i>Lepus californicus</i>	-	CSC	Yes	Present
burrowing owl	<i>Athene cunicularia</i>	-	CSC	No	High
California horned lark	<i>Eremophila alpestris actia</i>	-	CSC	No	High
California mountain kingsnake	<i>Lampropeltis zonata (parvirubra)</i>	-	CSC	No	Moderate
California red-legged frog	<i>Rana draytonii</i>	FT	CSC	No	No Suitable Habitat
coast horned lizard	<i>Phrynosoma blainvillii</i>	-	CSC	No	Moderate
coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT	CSC	No	Moderate
Cooper's hawk	<i>Accipiter cooperii</i>	-	WL	Yes	Present
least Bell's vireo	<i>Vireo bellii pusillus</i>	FE	SE	Yes	Present
loggerhead shrike	<i>Lanius ludovicianus</i>	-	CSC	Yes	Present
Los Angeles pocket mouse	<i>Perognathus longimembris brevinasus</i>	-	CSC	Yes	Present
northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	-	CSC	Yes	Present
orangethroat whiptail	<i>Aspidoscelis hyperythra</i>	-	CSC	No	Moderate
pallid bat	<i>Antrozous pallidus</i>	-	CSC	No	Low
pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	-	CSC	No	Low
rosy boa	<i>Charina trivirgata</i>	-	CSC	No	Moderate
San Bernardino flying squirrel	<i>Glaucomys sabrinus californicus</i>	-	CSC	No	No Suitable Habitat
San Bernardino kangaroo rat	<i>Dipodomys merriami parvus</i>	FE	CSC	Yes	Present
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	-	CSC	Yes	Present
Santa Ana speckled dace	<i>Rhinichthys osculus ssp. 3</i>	-	CSC	No	No Suitable Habitat
Santa Ana Sucker	<i>Catostomus santaanae</i>	FT	CSC	No	No Suitable Habitat

Common Name	Scientific Name	Status		Observed On-site	Occurrence Potential
		Fed	State		
Sierra Madre yellow-legged frog	<i>Rana muscosa</i>	FE	CSC, SCE	No	Moderate
silvery legless lizard	<i>Anniella pulchra pulchra</i>	-	CSC	No	Moderate
southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	-	WL	No	Moderate
southern rubber boa	<i>Charina umbratica</i>	-	ST	No	No Suitable Habitat
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE	SE	Yes	Present
Stephen' kangaroo rat	<i>Dipodomys stephensi</i>	FE	ST	No	Low
two-striped garter snake	<i>Thamnophis hammondi</i>	-	CSC	No	Moderate
western mastif bat	<i>Eumops perotis californicus</i>	-	CSC	No	Low
western spadefoot toad	<i>Spea hammondi</i>	-	CSC	No	Moderate
western yellow bat	<i>Lasiurus xanthinus</i>	-	CSC	No	Low
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FCE	SE	No	Low
white-eared pocket mouse	<i>Perognathus alticolus alticolus</i>	-	CSC	No	No Suitable Habitat
white-tailed kite	<i>Elanus leucurus</i>	-	FP	Yes	Present
yellow warbler	<i>Dendroica petechia brewsteri</i>	-	CSC	Yes	Present
yellow-breasted chat	<i>Icteria virens</i>	-	CSC	Yes	Present
Source: RBF(a), Appendix B. -- Not applicable. <u>Federal -USFWS</u> FE = Federal Endangered FT = Federal Threatened FCE = Federal Candidate Endangered		<u>State -CDFW</u> SE = State Endangered ST = State Threatened CSC = California Species of Concern WL = Watch List SCE = California Candidate Endangered FP = Fully Protected.			

5.4.1.5 Sensitive Habitats

Sensitive habitat types are natural vegetation communities that support concentrations of sensitive plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although sensitive habitats are not necessarily afforded legal protection unless they support protected species, potential impacts to them may increase concerns and mitigation suggestions by resources agencies. Nine sensitive habitat types are known from the site vicinity. Three sensitive habitat types were observed on the Project site during the habitat assessment: Riversidean Alluvial Fan Sage Scrub

(RAFSS), Southern Cottonwood Willow Riparian Forest, and Southern Willow Scrub. (RBF(a), Appendix B) These habitats are described above, under section 5.4.1.1.

5.4.1.6 Critical Habitat

Critical habitat is a term defined and used in the Federal Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of a threatened or endangered species and may include areas that are not currently occupied by the species but that will be needed for its recovery.³ Critical Habitat for the San Bernardino kangaroo rat is located within the Project site along the southern boundary and northwest boundary. Critical Habitat for Santa Ana sucker is located in Mill Creek and the Santa Ana River to the southeast, south and west of the Project site as shown in **Figure 5.4-2 – Critical Habitat**.

5.4.1.7 Jurisdictional Resources

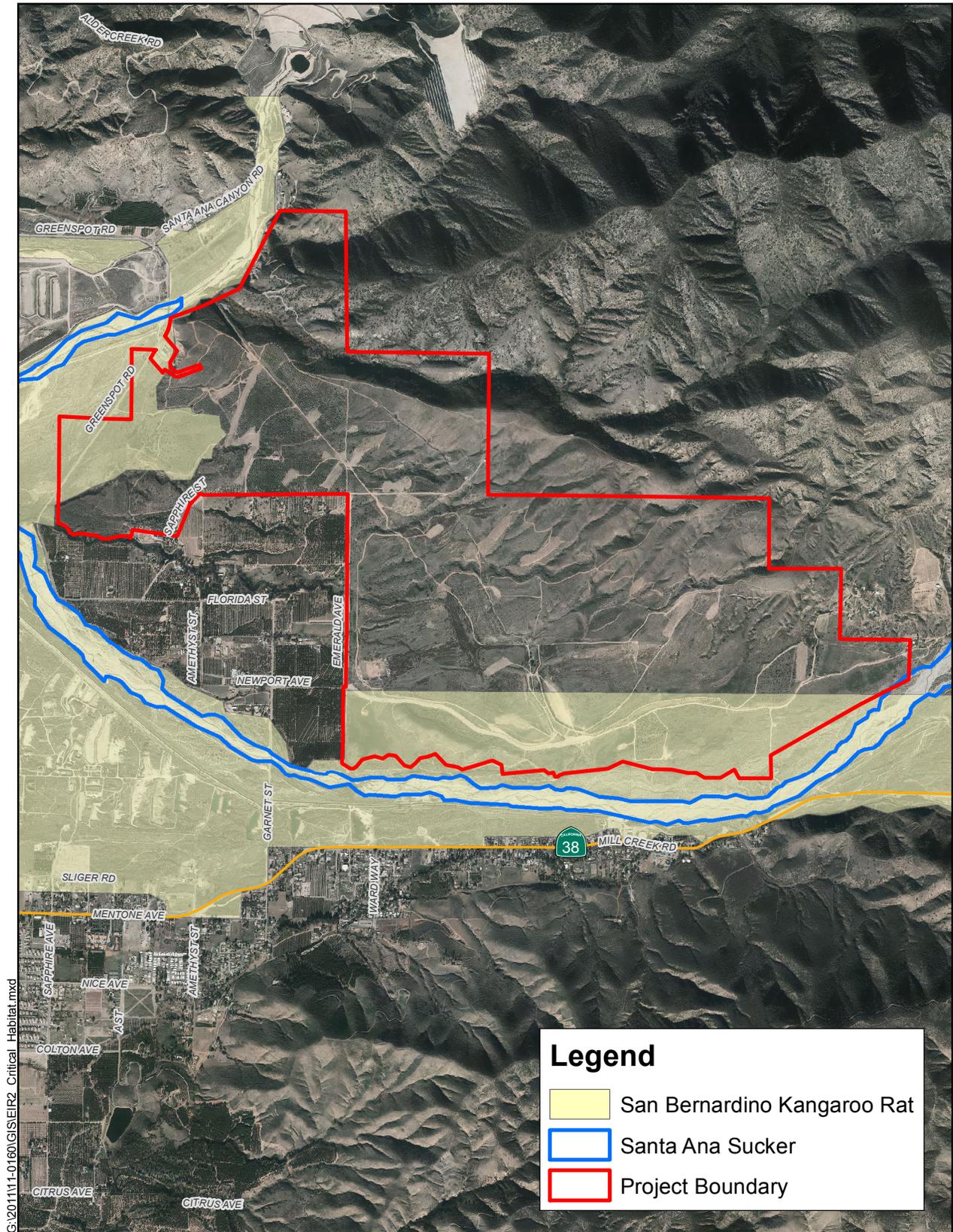
A jurisdictional delineation was prepared for the entire Project site (VCS) to determine the extent and location of jurisdictional drainages, including streams regulated by CDFW pursuant to Section 1602 of the California Fish and Game Code and waters of the US regulated by the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. Waters of the US are defined to include waters, streams, and wetlands that have an above-ground or below-ground connection to navigable waters, and tributaries to these waters. In non-tidal waters, the limits of jurisdiction under this definition are defined by the ordinary high water mark (OHWM) identified through field observation of features such as shelving and debris deposits. USACE jurisdiction over non-tidal waters of the US extends to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present. The USACE defines a wetland by three criteria: hydrology, soils, and vegetation. A stream under California Department of Fish and Wildlife (CDFW) jurisdiction is defined as a body of water that flows at least periodically through a bed or channel having banks and supports fish or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW regulates wetland areas only to the extent that those wetlands are part of a stream, river, or lake as defined by CDFW. CDFW jurisdictional boundaries reach to the tops of stream banks and/or within the limit of the canopy of riparian vegetation that is hydrologically connected to the stream. (VCS, p.7) Pursuant to Section 401 of the Clean Water Act, the Regional Water Quality Control Board (RWQCB) regulates water quality for all waters that USACE has determined are under its jurisdiction. Waters found to be not subject to regulation under the Clean Water Act may be regulated by the RWQCB under California's Porter-Cologne Water Quality Control Act. (VCS, p.8)

The Project site contains 16 jurisdictional drainage features that were delineated using approaches recommended by the regulatory agencies for this site. USACE jurisdiction totals of 2.31 acres and CDFW jurisdiction totals 47.81 acres (VCS, p. 18). Refer **Table 5.4-C – Summary of Jurisdictional Features**, for the length and acreage of the jurisdictional drainage features. **Figure 5.4-3 – USACE Jurisdiction** and **Figure 5.4-4 – CDFW Jurisdiction** show the location of the jurisdictional features located within the Project site.

³ <http://www.fws.gov/endangered/what-we-do/critical-habitats-faq.html>, accessed April 30, 2013.

Table 5.4-C – Summary of Jurisdictional Features

Drainage Feature	Length (feet)	USACE Jurisdiction (acres)	CDFW Jurisdiction (acres)
Deep Creek	1,678	0.15	0.69
Morton Creek	5,597	0.51	5.23
A-1	6,046	0.38	1.18
A-2	7,345	0.88	6.81
Natural Landforms (Subwatershed B)	--	0	12.57
Natural Landforms (Subwatershed C)	--	0	7.14
Wetland (Subwatershed C)	--	0	1.30
Wetland-1 (Subwatershed C)	--	0	0.31
C-1 (Subwatershed C)	2,830	0	0.34
C-2 (Subwatershed C)	733	0	0.05
HLA-2 (Subwatershed C)	--	0	3.89
Side Drainages 1-5	1,660	0.18	0.18
E-1	2,408	0.14	0.14
E-2	734	0.02	0.02
F-1	910	0.05	0.05
Total	29,941	2.31	47.81

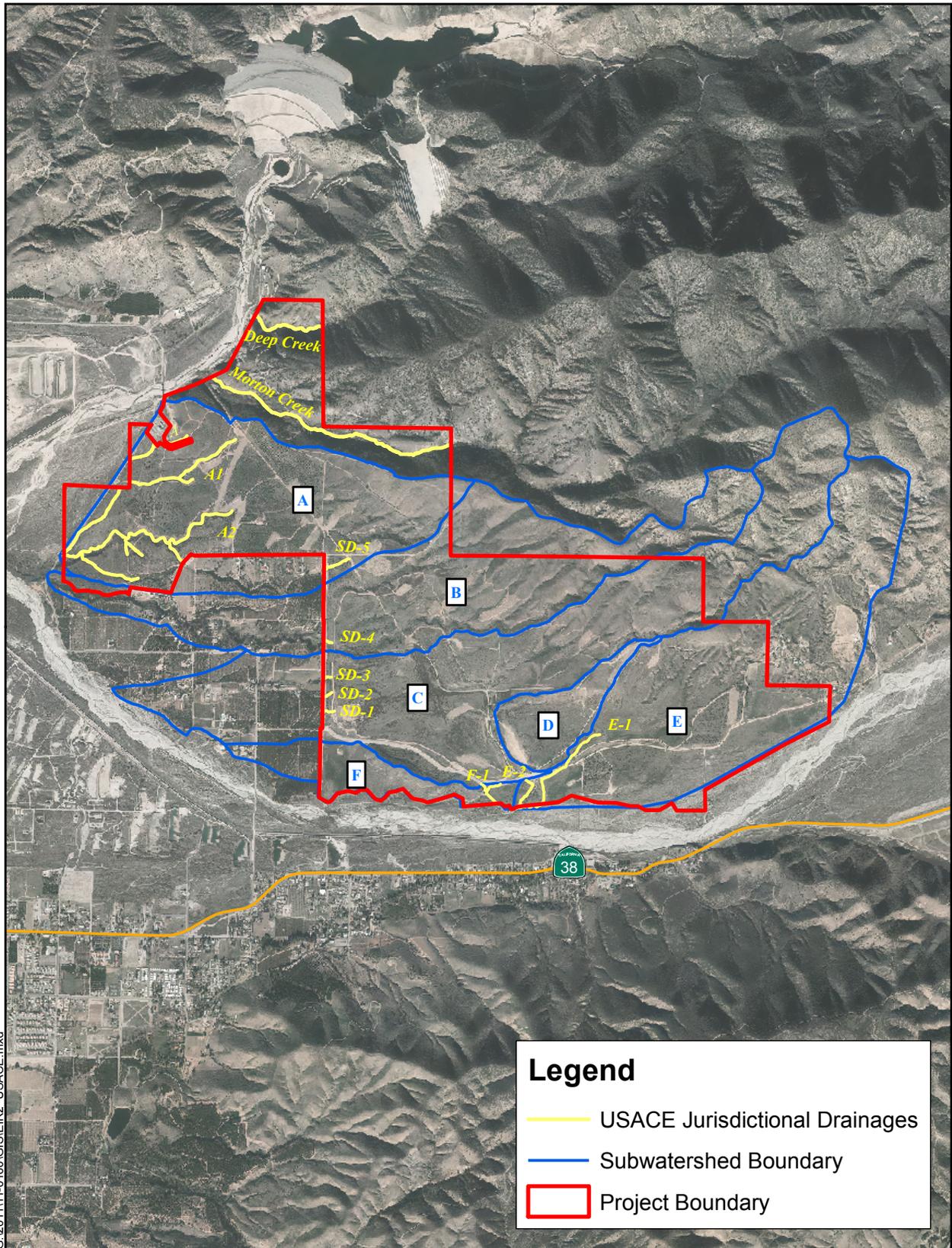


G:\2011\11-0160\GIS\EIR2 Critical Habitat.mxd

Source: USFWS, August, 2011

Figure 5.4-2 – Critical Habitat
Harmony Specific Plan Draft EIR





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Sources: VCS Environmental, Oct. 2012;
San Bernardino Co. ISD, 2012.

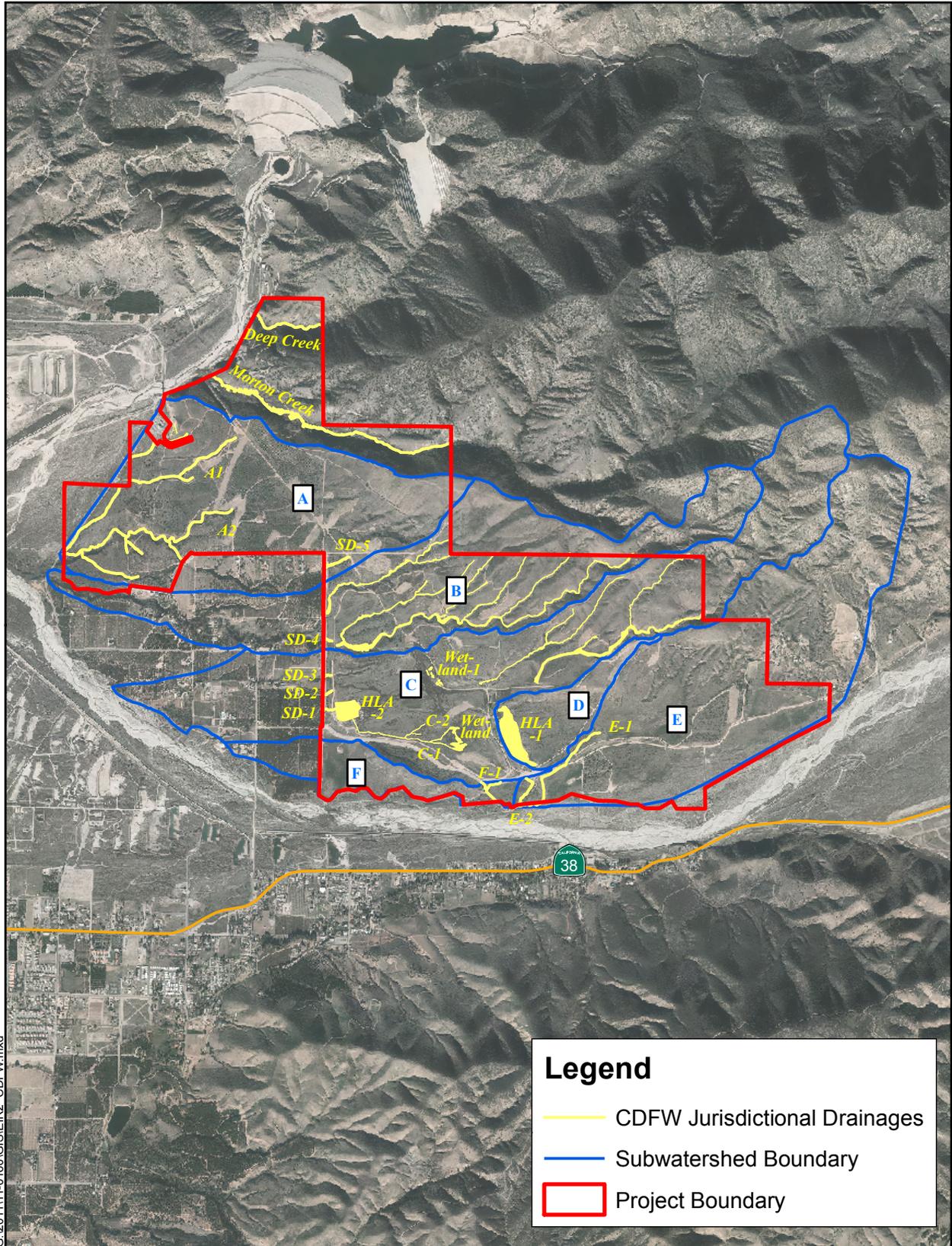
Legend

- USACE Jurisdictional Drainages
- Subwatershed Boundary
- Project Boundary

Figure 5.4-3 – USACE Jurisdiction
Harmony Specific Plan Draft EIR

0 2,000 4,000 6,000
Feet





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Sources: VCS Environmental, Oct. 2012;
San Bernardino Co. ISD, 2012.

Figure 5.4-4 – CDFW Jurisdiction
Harmony Specific Plan Draft EIR

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Feet



5.4.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to biological resources may be considered potentially significant if the Project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- 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;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

5.4.3 Related Regulations

5.4.3.1 Federal Regulations

Federal Endangered Species Act of 1973

The Federal Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531–1543) and subsequent amendments provide for the conservation of endangered and threatened species and the habitats on which they depend. A federally-endangered species is one that is facing extinction throughout all or a significant portion of its geographical range. A federally-threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federally threatened or endangered species on a site generally imposes severe constraints on development; particularly if development would result in a “take” of the species or its habitat which is prohibited under Section 9 of the ESA. The term “take,” as defined under the ESA, means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Harm in this sense can include any disturbance to habitats used by the species during any portion of its life history. Thus, if a listed species is present on the Project site and take of the species cannot be avoided, the Project proponent must obtain an incidental take permit, as issued by the USFWS, through Section 7 or Section 10 Consultation. HCPs for the impacted species must be developed in support of incidental take permits for non-federal projects to minimize impacts to the species and develop viable

mitigation measures to offset the unavoidable impacts.

Federal Clean Water Act Section 404

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in USACE regulations at 33 CFR Part 328.3(a) as:

- (1) *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
- (2) *All interstate waters including interstate wetlands;*
- (3) *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
 - (i) *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - (ii) *From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
 - (iii) *Which are used or could be used for industrial purpose by industries in interstate commerce...*
- (4) *All impoundments of waters otherwise defined as waters of the United States under the definition;*
- (5) *Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
- (6) *The territorial seas;*
- (7) *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
- (8) *Waters of the United States do not include prior converted cropland.⁴ Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.*

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM) which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as 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.

⁴ The term "prior converted cropland" is defined in the USACE' Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season...." [Emphasis added.]

The USACE defines a wetland (33 CFR 328.3(b)) by three criteria: hydrology, soils, and vegetation. Generally, the USACE does not assert jurisdiction over swales and erosional features, and ditches excavated wholly in or draining only uplands and that do not carry a relatively permanent flow of water. However, the USACE does reserve the right to regulate these waters on a case-by-case basis.

Additionally, as part of the USACE permitting process, consultation with USFWS is required under Section 7 of the ESA for projects that may affect listed species or their designated habitat.

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the take, possession, or destruction of any birds, their nests or eggs. Implementation of the proposed Project will be required to comply with the MTBA, which prohibits the take of migratory bird species that are considered to utilize the site and their nests or eggs.

5.4.3.2 State Regulations

California Endangered Species Act

California Endangered Species Act (Fish and Game Code 2050, et seq.) (CESA) establishes that it is the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects which would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. CESA requires State lead agencies to consult with the CDFW during the CEQA process to avoid jeopardy to threatened or endangered species. CESA prohibits any person from taking or attempting to take a species listed as endangered or threatened (Fish and Game Code Section 2080). Section 2080 provides the permitting structure for CESA. The "take" of a state-listed Endangered or Threatened species or Candidate species will require incidental take permits as authorized by the CDFW. Thus, if a listed species is present on the project site and take of the species cannot be avoided, the project proponent must obtain an incidental take permit, as issued by the CDFW, through a 2081 permit or Memorandum of Understanding (MOU).

California Fish and Game Code

CDFW has jurisdiction over "Waters of the State." Pursuant to Division 2, Chapter 6, Sections 1600–1616 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFW Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways...

- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by [CDFW] as natural waterways...
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions...

Thus, CDFW jurisdictional limits closely mirror those of the USACE. Exceptions are CDFW's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

5.4.3.3 Local Regulations

Management Plan for the Santa Ana River Woolly Star

The Management Plan for the Santa Ana River Woolly Star (Management Plan; Chambers Group, Inc., 1993) was created to be implemented on the Santa Ana River Woolly Star Preserve Area (WSPA). The WSPA was established in 1988 by the USACE to provide mitigation to offset the impacts from the development of the Seven Oaks Dam at the top of the Santa Ana River. The Preserve is a 764-acre conservation area located along the northern banks of the Santa Ana River from its confluences with Mill Creek to Alabama Street in the City of Highland. The Management Plan includes a description of management tasks that benefit woolly star habitat, including identification and implementation of habitat renewal methods; control of exotic species; reduction of off-highway vehicle activity, trash dumping, and other negative human impacts; and a public awareness program. (RBF(a), p. 7)

Draft Upper Santa Ana River Wash Land Management Plan and Habitat Conservation Plan

The final conservation strategy for the Upper Santa Ana River Wash Land Management Plan (Wash Plan) and Habitat Conservation Plan (HCP) has been negotiated with USFWS (January 2010). The HCP and the Wash Plan cover the same area. The plan area encompasses approximately 4,467 acres, lies immediately north of the Santa Ana River Woolly Star Preserve Area (WSPA), and occupies the Santa Ana River streambed and wash south of Greenspot Road in the City of Highland. The San Bernardino Valley Water Conservation District (SBVWCD) is lead agency for the effort to finalize the HCP but is joined by Robertson's Ready Mix, CEMEX, Cities of Redlands, Highland and Yucaipa, San Bernardino County Flood Control District, and San Bernardino Valley Municipal Water District. The Plan should authorize an individual take permit within the next two years for impacts to California gnatcatcher, SBKR, woolly star and slender-horned spineflower. (RBF(a), p. 7)

San Bernardino Valley-wide Multiple Species Habitat Conservation Plan (proposed)

San Bernardino County has been hosting a series of preliminary planning meetings with local cities, key individuals and organizations, and the general public over the last two years to receive input on development of the San Bernardino Valley-wide Multiple Species Habitat Conservation Plan (MSHCP). Although the proposed Project area would be expected to be within the County's MSHCP planning area, the Plan is still in the preliminary planning stage and it is not anticipated that USFWS will issue an individual take permit for this MSHCP any time in the foreseeable future. (RBF(a), p. 7)

City of Highland General Plan

Future development of all land within the City of Highland is guided by the City's General Plan. The City of Highland General Plan Update was approved by the City Council on March 14, 2006. The General Plan outlines comprehensive, long-term land use policies to guide development within the City. The Conservation and Open Space Element contains policies that are intended to ensure the preservation of sensitive species, soils, and habitats within the city. The following policies in the City's General Plan are relevant to the proposed Project. (GP, pp. 5-21 and 5-22)

Conservation and Open Space Element:

Goal 5.7: Maintain, protect and preserve biologically significant habitats, including riparian areas, woodlands and other areas of natural significance.

- Policy 2: *Ensure that all development, including roads proposed adjacent to riparian and other biologically sensitive habitat, avoid significant impacts to such areas.*
- Policy 3: *Require that new development proposed in such locations be designed to:*
 - *Minimize or eliminate the potential for unauthorized entry into the sensitive area;*
 - *Create buffer areas adjacent to the sensitive area, incorporating the most passive uses of the adjacent property;*
 - *Protect the visual seclusion of forage areas from road intrusion by providing vegetative buffering;*
 - *Provide wildlife movement linkages to water sources and other habitat areas;*
 - *Provide native vegetation that can be used by wildlife for cover along roadsides; and*
 - *Protect wildlife crossings and corridors.*
- Policy 4: *Design lighting systems so as to avoid intrusion of night lighting into the sensitive area.*
- Policy 5: *As part of the environmental review process, require that projects determined to be located within a biologically sensitive area prepare documentation on the impacts of such development along with mitigation and mitigation monitoring programs.*
- Policy 6: *Ensure that required biological assessments are conducted in cooperation with the CDFG and the U.S. Fish and Wildlife Service (USFWS).*
- Policy 7: *Within existing natural and naturalized areas, preserve existing mature trees and vegetation.*
- Policy 9: *Enforce requirements that healthy, mature individual specimen trees be preserved in place, as per the City Municipal Code.*
- Policy 10: *Require builders and developers to prune, treat and maintain existing trees and plant new ones within future rights-of-ways, public lands, common areas and development projects.*
- Policy 11: *Enforce the tree preservation ordinance as a means of managing the preservation of trees and their removal, where necessary.*

- *Policy 12: Require replacement at a 2:1 ratio of all mature trees (those with 24-inch diameters or greater measured 4½ feet above the ground) that are removed.*

City of Highland Municipal Code

The City of Highland regulates environmental management through the City's Municipal Code. The following are existing regulations and standard conditions on development projects within the City of Highland, regulated through the City's Municipal Code:

- Chapter 8.36 and Chapter 16.64, Section 040– Heritage Trees: Heritage trees are defined as any live woody plant more than 15 feet in height and with a single-trunk circumference of 24 inches or greater; or a multi-trunk tree with total circumference of 30 inches or greater; or a stand of trees in which each is dependent on the others for survival; or any other tree as may be deemed historically or culturally significant by the Community Development Director or designee because of size, condition, location, or aesthetic qualities. Relocation, removal, or destruction of heritage trees is prohibited without first obtaining a tree removal permit from the Community Development Director. Exceptions to this policy are specified in said Section.
- Chapter 16.64, Section 050 – Riparian Plant Conservation: The removal of any vegetation within 25 feet of the drip line of riparian vegetation along a USGS blue line stream or indicated as a protected riparian area on a community or specific plan, shall be subject to a tree removal permit in accordance with the procedures detailed by this section and shall be subject to environmental review.

5.4.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts to biological resources through the design of the Project.

The Project has been designed to minimize impacts to sensitive species and the habitat that supports them. Specifically, the area around Morton Creek and Deep Creek will be maintained as natural open space. A total of 535 acres of the site (or 32 percent) will be devoted to natural open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved (refer to **Figure 3-8**). The majority of the natural open space provides a transition to the San Bernardino National Forest. This area contains an existing network of trails that have been forged over years of activity on the property. These existing trails will be integrated with the planned multipurpose trails in the developed areas of the Project. (HSP, p. 9-43)

Approximately 72 acres of manufactured open space is proposed. Manufactured slope open space are the slopes created to provide for neighborhoods and will also provide fire protection for adjacent neighborhoods with landscaping that provides defensible space. (HSP, p. 4-8)

Because CDFW has identified elderberry as an existing resource on the Project site, the inclusion of elderberry in the plant palette for the Walnut District is proposed to offset the impacts of the loss of existing elderberry. (VCS, p. 18; HSP, p. 9-5)

5.4.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

5.4.5.1 Sensitive Plant Species

Two federally and State listed plant species were identified with the potential to occur due to the presence of suitable habitat within the Project site: Santa Ana River woollystar and slender-horned spineflower.

The **Santa Ana River woollystar** (SARWS), federally and State listed as endangered, is a short-lived, perennial subshrub of the phlox family. The entire plant is covered with woolly pubescence, giving it a silvery-white appearance. The flower of this plant is a blue to violet-blue color. SARWS is a pioneer species that colonizes washed and sand deposits created by sporadic stream flow action. Between major flood events, these deposits typically exist as terraces above the high water mark of the river and associated braided streams. SARWS grows primarily in RAFSS habitat in sandy soils from 1,240 to 1,900 feet in elevation. The SARWS is both a federal and state listed endangered plant species. (RBF(a), p. 18)

The RAFSS habitat on the western and southern boundaries of the Project site has the potential to provide suitable habitat for the SARWS. Several SARWS were observed in the RAFSS habitat on the western boundary of the Project site during the initial site visit and in its blooming period during the 2011 and 2012 focused surveys. Focused surveys for SARWS in the RAFSS habitat on the southern boundary were negative. (RBF(a), p. 19)

The small population of SARWS found along the western boundary of the proposed Project property would be avoided throughout Project implementation. This population of SARWS is located west of Greenspot Road in an area that is not planned for development. Since the existing populations of SARWS occur in a portion of the site that would not be developed, there would be **no direct impact to this species from Project development**. Indirect impacts could occur if access to the area is open and recreational and other unauthorized uses occur. Other indirect impacts could occur from the release of storm water and other nuisance discharges into the immediate areas of the SARWS population along the western boundary. However, the proposed design of the storm water facilities will direct discharges into either the Santa Ana River or Mill Creek. The storm water and nuisance discharges will not be able to flow into the area supporting the SARWS population. (RBF(a), p. 29, 30) Implementation of mitigation measure **MM BIO 1** will reduce **potential indirect impacts to SARWS to less than significant levels**.

Slender-horned spineflower (*Dodecahema leptoceras*), federally and State listed as endangered, is a small annual plant in the Polygonaceae (buckwheat family). It has been federally and State listed as endangered since the 1980s. The species is usually found in drought prone alluvial benches subject to only rare flood events. Slender-horned spineflower is typically associated with cryptogamic crust. A cryptogamic crust is a microhabitat that contains soil, bacteria, algae, lichens, and mosses. These crusts act as living mulch in that they retain soil moisture and discourage the growth of annuals and weeds, as well as resisting wind and water erosion. At the time slender-horned spineflower was listed (as

Centrostegia leptoceras) it was only known to be extant at 5 locations. More intensive surveys and resurveys of historical occurrence sites have detected additional populations since the regional listing. Development, mining activities, off-road vehicles, proposed flood control measures, and trash dumping were among the threats cited by the listing. (RBF(a), p. 19)

There are two known occurrences of slender-horned spineflower in San Bernardino County: within the upper Santa Ana River floodplain; and near Cajon Creek (erroneously noted as Lytle Creek in the final rule) (USFWS 1987, p. 36268). The Santa Ana River Wash Area of Critical Environmental Concern (ACEC) was established for slender-horned spineflower, and other federally listed species, by the Bureau of Land Management (BLM) pursuant to the South Coast Resource Management Plan (BLM 1994, p. 104), however, critical habitat has not been designated for this species. Intensive surveys for this species over the last ten years have identified five more occurrences of this species. (RBF(a), p. 19)

Suitable habitat for the slender-horned spineflower is primarily found in the RAFSS habitat on the western boundary of the Project site where cryptogamic crust was identified. Focused surveys for slender-horned spineflower were conducted during the 2011 and 2012 blooming periods and were negative. (RBF(a), p. 19)

Surveys for sensitive plants did not find any slender-horned spineflower on the proposed Project property and the species is presumed absent from the Project site. Therefore, **no direct impacts to slender-horned spineflower** would occur as a result of Project implementation. Slender-horned spineflower do occur further to the west within the Upper Santa Ana River Wash Plan area. A Habitat Conservation Plan is under preparation that will provide long-term protection for these populations of slender-horned spineflower. (RBF(a), p. 30) With protection and management under the Upper Santa Ana River Wash Plan implementation of the Project will not result in indirect adverse impacts to slender-horned spineflower.

Implementation of the Project requires some additional off-site roadway improvements including: 1) widening of Greenspot Road, from the S-curve to the new Greenspot Road Bridge, 2) widening of Garnet Street, starting at the intersection of Garnet Street and Highway 38 north to the intersection of Garnet Street and Newport Avenue, and 3) widening of Newport Avenue, from Garnet Street to the Project boundary. Impacts to RAFSS habitat could occur from off-site road improvements (RBF(a), p. 42).

Improvements for the "S" curve on Greenspot Road start at the intersection of Greenspot Road with Calle Del Rio Street and continue eastward to approximately 0.5-mile west of the intersection of Greenspot Road with Santa Ana Canyon Road. This approximately 1.5 mile stretch of Greenspot Road, begins as a 4-lane undivided roadway at the intersection of Greenspot Road with Calle Del Rio Street before continuing east as a 2-lane undivided roadway east of intersection of Greenspot Road with Santa Paula Street. This section of Greenspot Road borders the northern boundary of the Santa Ana River Wash floodplain separating residential developments north of Greenspot Road from undeveloped land south of Greenspot Road (RBF(a), p. 42).

The habitat north of Greenspot road consists of existing residential developments, citrus orchards, and disturbed areas. No sensitive biological resources occur along the north of Greenport road. The habitat within 75 feet south of Greenspot Road is disturbed but supports an intermediate RAFSS plant

community with an understory dominated by non-native grasses and forbs with native plant species scalebroom, yerba santa, and California buckwheat. Chamise is also scattered within this plant community south of Greenspot Road. The intermediate RAFSS plant community found on the south side of Greenspot Road also has a low potential to provide suitable habitat for Santa Ana River woollystar and slender-horned spineflower. These two federally and state endangered plant species are known to occur in the general area. There was no evidence of either plant species during the habitat assessment of this area and a review of CNDDDB shows that neither species has been identified within the immediate vicinity of this area of Greenspot Road (RBF(a), p. 42).

Improvements for Garnet Street and Newport Avenue start at the intersection of Garnet Street and Highway 38 and continuing north along Garnet Street to the intersection of Garnet and Newport Avenues. Newport Avenue will be widened from the intersection of Garnet Street and Newport Avenue eastward to the Project site. The segment of Garnet Street from Highway 38 to Newport Avenue is bordered on both sides by intermediate RAFSS habitat and crosses over Mill Creek before its confluence with the Santa Ana River. The areas on either side of Garnet Street out to 75 feet no longer support intermediate RAFSS habitat suitable for Santa Ana River woolly star and slender-horned spineflower. Routine use and maintenance of Garnet Street and the two intersections at Highway 38 and Newport Road has eliminated most of the native vegetation and has caused the compaction of soils needed for substrate for Santa Ana River woolly star and slender-horned spineflower. Presence of Santa Ana River woolly star and slender-horned spineflower were not noted within the surveyed area and these two species are not expected to occur within the right-of-way for Garnet Street or its intersections (RBF(a), pp. 42, 43).

The widening of Newport Avenue from Garnet Street to the Project site will not result in impacts to riparian areas or sensitive natural communities, particularly intermediate RAFSS habitat. Both sides of Newport Avenue between Garnet Street and the Project site have active orchards and no longer support any native habitat. The maintenance and watering of orchards has created unfavorable conditions for the growth of Santa Ana River woolly star and slender-horned spineflower. No potential presence of these two species was noted within the vicinity of Newport Road (RBF(a), p. 43).

No impacts to riparian areas or sensitive natural communities, in particular, intermediate RAFSS habitat and associated plant and wildlife species, would occur from Project construction within 75 feet of the existing pavement. It is not anticipated that these improvements would extend beyond the 75 feet evaluated in the Habitat Assessment(RBF(a), p. 43).

Three special status plant species were identified during the sensitive plant surveys as present onsite: Plummer's mariposa lily, Parry's spineflower and white-bracted spineflower. One Federal Species of Concern (Brand phacelia) and four California Native Plant Society (CNPS) list species (Robinson's peppergrass, Pringle' monardella, San Bernardino aster, and Sonoran maiden fern) were listed as occurring within the general vicinity but were not identified on the Project site during sensitive plant surveys in 2011 and 2012. **Parry's spineflower** and **white-bracted spineflower** were found within the RAFSS habitats along the western and southern boundaries of the Project site in areas that would be avoided during Project implementation. **Plummer's mariposa-lily** was found within the non-native grassland habitat along the north boundary of the Project site, south of the National Forest Service boundary, in

an area that will also be avoided during Project implementation. **San Bernardino aster** and **Sonoran maiden fern** were not identified as occurring onsite during sensitive plant surveys in 2011 and 2012. All of the suitable habitat for these sensitive plant species are in areas will be set aside as open space as part of Project implementation. (RBF(a), p. 30, 31) Therefore, the implementation of the Project will **not result in direct impacts** to these species. Implementation of **MM BIO 1** will ensure that Project implementation will **not result in indirect impacts** to these species.

Three sensitive plant species (**Robinson's pepper-grass, Pringle's monardella and Brand phacelia**) were identified as having a moderate potential to occur onsite within the proposed development footprint. Brand phacelia is a federal species of concern and was identified 2 miles east of the Project in 2005. Robinson's pepper-grass and Pringle's monardella are CNPS list species that were identified 0.5 miles northwest of the Project site in 1987 and 10.5 miles north of the Project site in 2005, respectively. None of these three plant species were found on the Project site during the 2011 and 2012 focused sensitive plant surveys and are presumed absent from the Project site. **No direct or indirect impacts are expected to occur** to these species from Project development. (RBF(a), p. 31)

5.4.5.2 Sensitive Wildlife Species

Although the Project site has historically been used for agricultural production and surface mining activities several areas were identified on the Project site that have the potential to support a number of federally and state listed wildlife species, as well as several species of special concern, including the burrowing owl. Listed species included San Bernardino kangaroo rat, coastal California gnatcatcher, least Bell's vireo and southwestern willow flycatcher.

The **San Bernardino kangaroo rat** (SBKR), federally listed as endangered, is one of several kangaroo rat species in its range. The Dulzura (*Dipodomys simulans*), the Pacific kangaroo rat (*Dipodomys agilis*) and the Stephens kangaroo rat (*Dipodomys stephensi*) occur in areas occupied by the San Bernardino kangaroo rat, but these other species have a wider habitat range. The habitat of the San Bernardino kangaroo rat is described as being confined to primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial (water) rather than aeolian (wind) processes. Burrows are dug in loose soil, usually near or beneath shrubs. (RBF(a), p. 19)

The SBKR is one of three subspecies of the Merriam's kangaroo rat. The Merriam's kangaroo rat is a widespread species that can be found from the inland valleys to the deserts. The subspecies known as the San Bernardino kangaroo, however, is confined to inland valley scrub communities, and more particularly, to scrub communities occurring along rivers, streams and drainages. Most of the drainages have been historically altered as a result of flood control efforts and the resulting increased use of river resources, including mining, off-road vehicle use and road and housing development. This increased use of river resources has resulted in a reduction in both the amount and quality of habitat available for the San Bernardino kangaroo rat. The past habitat losses and potential future losses prompted the emergency listing of the San Bernardino kangaroo rat as an endangered species (U.S. Fish and Wildlife Service, 1998a). (RBF(a), p. 20)

Two areas within the Project site, RAFSS habitat on the western and southern boundaries of the Project site, were identified as having the potential to provide suitable habitat for SBKR. These portions of the

Project site are also located within U.S. Fish and Wildlife Service designated critical habitat for SBKR (refer to **Figure 5.4-2 – Critical Habitat**). No SBKR were captured during presence/absence trapping surveys within the RAFSS habitat along the east side of Greenspot Road. One (1) adult scrotal male SBKR was trapped on the final trap night within the RAFSS habitat along the southern boundary, south of Newport Avenue/Redlands Heights Ranch Road. Based on the trapping results, the far southerly boundary of the subject property along the northern side of the Mill Creek floodplain is currently occupied by trace levels of SBKR. (RBF(a), p. 20)

The Primary Constituent Elements (PCEs) essential to support the biological needs of foraging, reproducing, rearing of young, intra-specific communication, dispersal, genetic exchange, or sheltering for SBKR are:

- River, creek, stream, and wash channels; alluvial fans, flood plains, flood benches and terraces; and historic braided channels that are subject to dynamic geomorphological and hydrological processes;
- Alluvial Sage Scrub and associated vegetation such as coastal sage scrub and chamise chaparral with a moderately open canopy;
- Soil series consisting of sand, sandy loam, or loam within its geographical range;
- Upland areas proximal to flood plains containing suitable habitat (land adjacent to alluvial fan that provides Refugia); and
- Moderate-to-low degree of human disturbances to habitat.

The RAFSS habitat on the Project site provides several of the essential PCEs needed for the biological requirements of SBKR. However, along the western boundary of the Project Site the RAFSS habitat is no longer subject to the hydrologic/alluvial processes from the Santa Ana River needed in order to scour the vegetation onsite to maintain open habitat and deposit sandy soils. The area, while still open, has become rocky with little or no soils. Focused surveys in this area were negative. The RAFSS habitat along the southern boundary is still subject to the alluvial processes associated with Mill Creek but the benches above the creek bed support rocky substrates with limited soils. Focused surveys only trapped one (1) SBKR, and this RAFSS community is considered occupied at only a trace level. (RBF(a), p. 22)

The majority of RAFSS habitats within the Project site will not be developed. Two areas within the Project site were identified as supporting RAFSS habitat with the potential to provide suitable habitat for San Bernardino Kangaroo Rat (SBKR) (see **Figure 5.4-1 – Vegetation Map**). There are 58.6 acres of intermediate RAFSS habitat along the western boundary and 7.3 acres of intermediate RAFSS habitat at the southeast corner of the Project site that are suitable for SBKR, for a combined total of 65.9 within the Project site. Presence/Absence trapping surveys were conducted by a permitted biologist within both areas. No SBKR were captured over the course of the 5-night trapping session within the 58.6 acres of RAFSS habitat along the western boundary of the Project site. A single adult scrotal male SBKR was trapped on the final trap night during the 2011 trapping effort in the 7.3 acres of RAFSS habitat at the southeast corner of the Project site. However, no SBKR were caught during the 2012 trapping effort. Based on these trapping results, the 7.3 acres of intermediate RAFSS habitat at the southeast corner of

the subject property along the northern side of the Mill Creek floodplain is considered occupied at trace levels by SBKR. (RBF(a), p. 31)

A total of 31.8 acres of the 65.9 acres of intermediate RAFSS habitats found on the Project site will not be developed. These 31.8 acres are found in the southwest corner of the Project site on both sides of Greenspot Road and include the area supporting SARWS. No SBKR were trapped in this area of intermediate RAFSS habitat in 2011 and 2012 and the area is considered unoccupied by SBKR. Approximately 90-acres of intermediate RAFSS habitat are found between Mill Creek and south of the proposed development associated with the Harmony Specific Plan. Eighty-three acres (82.7 acres) occurs outside of the Project boundaries and will not be developed. Development will occur on 7.3 acres (8 percent) of the approximately 90 acres of intermediate RAFSS habitat at the southeast corner of the Project site (see **Figure 5.4-1 – Vegetation Map**). These 7.3 acres were determined to be occupied by SBKR at trace levels. (RBF(a), pp. 31, 32)

One storm drain facility that is presently planned to be placed about 2,500 feet west of the 7.3-acre area found to be occupied by SBKR may extend off the Project site into the 90 acres of intermediate RAFSS located between the site's southern boundary and Mill Creek. Although the exact location and design of the storm water facility is not known at this time, significant direct impacts could occur from the loss of RAFSS habitat, as well as significant indirect impacts to SBKR from the release of storm water into the RAFSS habitat which will be limited to less than one acre of off-site impacts to intermediate RAFSS habitat. Once a location is defined, and the storm drain is designed the total impacts to RAFSS habitat can be determined. Other potentially significant indirect impacts could occur if access to the area is open and recreational and other unauthorized uses occur. (RBF(a), 32) Implementation of mitigation measure **MM BIO 1** is required to reduce potentially significant indirect impacts from recreational and other unauthorized uses in intermediate RAFSS habitat. Implementation of mitigation measure **MM BIO 2** is required to reduce potentially significant direct and indirect impacts to SBKR from Project site development and construction of the off-site storm drain to less than significant levels.

Implementation of the Project requires some additional off-site roadway improvements including: 1) Garnet Street, starting at the intersection of Garnett Street and Highway 38 north to the intersection of Garnet Street and Newport Avenue, 2) widening of Newport Avenue, from Garnet Street to the Project boundary, and 3) widening of Greenspot Road, from the S-curve to the new Greenspot Road Bridge. The habitat north of Greenspot Road consists of existing residential developments, citrus orchards, and disturbed areas. No sensitive biological resources occur along the north of Greenport Road. The habitat within 75 feet south of Greenspot Road is disturbed, but supports an intermediate RAFSS plant community with an understory dominated by non-native grasses and forbs with native plant species scalebroom, yerba santa, and California buckwheat. Chamise is also scattered within this plant community south of Greenspot Road. There are openings within the intermediate RAFSS plant community with minimal non-native grasses that have the potential to provide suitable burrowing areas for SBKR. No sign of SBKR (burrows, tail drags, or scat) was identified within the surveyed area. Although SBKR have been trapped in the general vicinity of the "S" curve, trapping results were further south, well within the Santa Ana River Wash floodplain and outside of the immediate vicinity of Greenspot Road. SBKR has a low potential to occur within the right-of-way for widening Greenspot Road in the vicinity of

the “S” curve. It should be noted that the RAFSS habitat south of Greenspot Road is within designated Critical Habitat for SBKR. (RBF(a), 42)

The segment of Garnet Street from Highway 38 to Newport Avenue is bordered on both sides by intermediate RAFSS habitat and crosses over Mill Creek before its confluence with the Santa Ana River. This reach of Mill Creek has been designated as Critical Habitat for SBKR and Santa Ana Sucker. The areas on either side of Garnet Street out to 75 feet no longer support intermediate RAFSS habitat suitable for SBKR. Routine use and maintenance of Garnet Street and the two intersections at Highway 38 and Newport Road has eliminated most of the native vegetation and has caused the compaction of soils needed for burrowing by SBKR. No sign of SBKR (burrows, tail drags, or scat) was noted within the surveyed area and none of these three species are expected to occur within the right-of-way for Garnet Street or its intersections. (RBF(a), 42, 43)

The widening of Newport Avenue from Garnet Street to the Project site will not result in impacts to riparian areas or sensitive natural communities, particularly intermediate RAFSS habitat. Both sides of Newport Avenue between Garnet Street and the Project site have active orchards and no longer support any native habitat. The maintenance and active watering of orchards prevents SBKR from entering the orchards and establishing burrows. No sign or the potential presence of these three species was noted within the vicinity of Newport Road. No impacts to riparian areas or sensitive natural communities, in particular, intermediate RAFSS habitat and associated plant and wildlife species, would occur from Project construction within 75 feet of the existing pavement. (RBF(a), 43) It is not anticipated that these improvements would extend beyond the 75 feet from existing pavement evaluated in the Habitat Assessment

The proposed Project may result in direct impacts to SBKR from the loss of RAFSS habitat and in indirect impacts from release of storm water into the RAFSS habitat or from recreational and unauthorized uses within conserved RAFSS areas. With **implementation of mitigation measures MM BIO 1 and MM BIO 2 potential direct and indirect impacts to SBKR are reduced to less than significant levels.**

The **Coastal California Gnatcatcher** (CAGN), federally listed as threatened, is a species with restricted habitat requirements, being an obligate resident of sage scrub habitats that are dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It ranges from the Ventura County south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. It prefers habitat with more low-growing vegetation. CAGN breed between mid-February and the end of August, with the peak of activity from mid-March to mid-May. Population estimates indicate that there are approximately 1,600 to 2,290 pairs of CAGN remaining. Declines are attributed to loss of sage scrub habitat due to development, as well as cowbird nest parasitism. (RBF(a), p. 22)

Breeding surveys for CAGN in 2011 identified a single gnatcatcher species on site. The surveyor identified the species as a black-tailed gnatcatcher. No CAGN were identified as occurring onsite in 2011. Breeding surveys for CAGN in 2012 did not identify any gnatcatcher species onsite. **No direct or indirect impacts to CAGN are anticipated** to result from development associated with the proposed Project. (RBF(a), pp. 32, 33)

The Project site was previously designated as Critical Habitat for CAGN, but in 2007 the Critical Habitat for CAGN was revised and the Project site fell out of the designated area. According to the “Final Critical Habitat mapping Unit #12” for San Bernardino County, this site has been excluded from critical habitat designation. (RBF(a), p. 23)

The **southwestern willow flycatcher** (SWWF), federally and State listed as endangered, is a small passerine bird that has a grayish-green back and wings, whitish throat, a light gray-olive breast, and pale yellowish belly. It has two visible white wing bars and a faint or absent eye ring. The southwestern willow flycatcher is currently one of the four recognized subspecies of the willow flycatcher. This flycatcher is a neotropical migrant that breeds in the southwestern United States from mid-April to early-September. In the fall, it migrates south to its wintering grounds in portions of South America, Central America and Mexico (60 FR 10694). (RBF(a), p. 23)

A rapid decline in the numbers of southwestern willow flycatchers in California and other southwestern states prompted the USFWS to designate it as a Category 1 candidate species in 1991. One year later in 1992, the California Fish and Game Commission listed the species as endangered, under the California Endangered Species Act (CESA) of 1970. On July 23, 1993 the southwestern willow flycatcher was proposed for listing as endangered by the USFWS and was then listed as Federally endangered on February 27, 1995, under the Endangered Species Act (ESA) of 1973 (60 FR 10694). The USFWS designated critical habitat for the species on July 22, 1997. On May 11, 2001, the critical habitat designation from 1997 was struck down by the U.S. 10th Circuit Court of Appeals who required further economic analysis. A recovery plan was finalized by USFWS in March of 2003. Critical habitat designations for this species were re-proposed and finalized in June 2004 (USFWS 2003c). (RBF(a), p. 23)

The SWWF breeds in dense riparian habitats along rivers, streams, and other wetlands. They have been documented to establish territories in elevations ranging from sea level to 8,500 feet (Sogge 1997). Plant species closely associated with the flycatcher include willows (*Salix* spp.), boxelder (*Acer negundo*), seepwillow (*Baccharis* spp.), with an overstory of cottonwood (*Populus fremontii*) (62 FR 39129). Occupied habitat is generally dominated by shrubs and trees 13 to 23 feet or more in height, which provide dense lower and mid-story vegetation approximately 13 feet aboveground. This dense vegetation is often interspersed with open water, small openings, or sparse vegetation, creating a mosaic that is not uniformly dense (62 FR 39129). (RBF(a), p. 23)

The southern cottonwood willow riparian forest habitat associated with Morton Creek on the northern most portion of the Project site provides suitable habitat for SWWF. A SWWF, confirmed by sight and song, was detected in the survey area during three of the five SWWF surveys in both 2011 and 2012. This SWWF was considered to be a territorial breeding SWWF. The Project site is not within designated Critical Habitat for this species. (RBF(a), p. 23)

There would be **no direct impacts to SWWF** as a result of the proposed Project. Indirect impacts could occur if access to the area is open and recreational and other unauthorized uses were to occur.

Implementation of mitigation measure MM BIO 1 will reduce potential indirect impacts to SWWF to less than significant levels.

The **least Bell's vireo** (LBVI), federally and state listed as endangered, is a small, olive-gray migratory songbird that nests and forages almost exclusively in riparian woodland habitats. Bell's vireos as a group are highly territorial and are almost exclusively insectivorous. LBVI nesting habitat typically consists of well-developed overstory, understory, and low densities of aquatic and herbaceous cover. The understory frequently contains dense sub-shrub or shrub thickets. These thickets are often dominated by plants such as narrow-leaf willow, mulefat, young individuals of other willow species such as arroyo willow or black willow, and one or more herbaceous species. LBVI generally begin to arrive from their wintering range in southern Baja California and establish breeding territories by mid-March to late-March. A large majority of breeding vireos apparently depart their breeding grounds by the third week of September and only a very few have been found wintering in the United States. (RBF(a), p. 24)

This small passerine species constructs open cup nests low in the riparian canopy, which may cause them be more vulnerable to brood parasitism compared to larger passerines that nest higher in the canopy. The loss of and degradation of riparian habitats have both occurred due to urban and agricultural development, fire, water diversion and impoundment, channelization, livestock grazing, off-road vehicle use and recreation, replacement of native habitats by introduced plant species, and hydrological changes resulting from these and other land uses. LBVI was first proposed for listing as endangered by the USFWS on May 3, 1985, (50 FR 18968) and was subsequently listed as federally endangered on May 2, 1986 (60 FR 10694). Critical habitat units were designated by the USFWS on February 2, 1994 (59 FR 4845) and included reaches of ten streams in six counties in southern California and the surrounding approximately 38,000 acres. The critical habitat units exist in the Santa Ynez River, Santa Clara River, Santa Ana River, Santa Margarita River, San Luis Rey River, Sweetwater River, San Diego River, Tijuana River, Coyote Creek, and Jumul-Dulzura Creek. (RBF(a), p. 24)

The southern cottonwood willow riparian forest habitat associated with Morton Creek on the northern most portion of the Project site provides suitable habitat for LBVI. LBVI were present onsite during the survey period on all four survey dates in both 2011 and 2012. One (1) breeding LBVI pair was confirmed within the focused survey area in 2011. Additionally, one LBVI individual was sighted incidentally, outside of the survey area, on three occasions in 2011. It is assumed that this bird was not a migrant passing through because it was spotted after June 15, 2011. The mulefat plant community in which it was observed is considered an expansion of the previously identified suitable LBVI habitat. The Project site is not within designated Critical Habitat for this species. (RBF(a), p. 24)

The proposed Project has been designed to avoid and/or minimize impacts to sensitive wildlife species. The areas around Morton Creek and Deep Creek shall be maintained as natural open space. Although LBVI was only observed breeding in Morton Canyon, at least one individual was observed foraging further south of Morton Canyon in an area with mulefat riparian vegetation in 2011. LBVI were observed foraging but not breeding in Morton Canyon in 2012. LBVI were not observed outside of Morton Canyon in 2012. There would be no direct impacts to LBVI as a result of the proposed Project. Indirect impacts could occur if access to the Morton Canyon area is open and if unauthorized uses occur. (RBF(a), p. 34)

Implementation of mitigation measure MM BIO 1 is required to reduce potential indirect impacts to LBVI to less than significant levels.

The **Santa Ana sucker** (*Catostomus santaanae*), federally listed as endangered, is a small, short-lived member of the sucker family (Catostomidae), named so primarily because of the downward orientation and anatomy of their mouth-parts, which allow them to suck up small invertebrates, algae, and other organic matter with fleshy, protrusible lips (Moyle 2002, p. 179). Santa Ana sucker is generally less than 6.3 inches (in) (16 centimeters (cm)) in length, is silvery-white ventrally and darker along the dorsal side, with irregular dorsal blotches on the sides and faint patterns of pigmentation arranged in lateral stripes, and the membranes connecting the rays of the caudal (tail) fin are pigmented (Moyle 2002, p. 182). (RBF(a), p. 24)

The Santa Ana sucker was federally-listed as threatened under the Endangered Species Act in 2000. CDFW has listed it as a species of special concern. Santa Ana Suckers occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Their historical distribution extended from upper watershed areas to the Pacific Ocean. They are capable of occupying habitats as diverse as mountain stream and rivers in alluvial floodplains. Sediment loads are high in the alluvial floodplains in the San Gabriel and San Bernardino Mountains. The streams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift. Decades of groundwater extraction have lowered subsurface groundwater levels within the historical range of the Santa Ana Sucker. Santa Ana sucker no longer occurs in the upper reaches of the Santa Ana River. However, these upper reaches may supply downstream habitats with substrate or cobble needed for reproduction. As such, the upper Santa Ana River has been designated Critical Habitat for the species. (RBF(a), p. 25)

The 2010 revised Critical Habitat for the Santa Ana Sucker includes portions on the Santa Ana River and Mill Creek adjacent to the western and southern boundaries of the Project site (**Figure 5.4-2 – Critical Habitat**). Although the Project site does not intersect or cross into designated Critical Habitat for the Santa Ana Sucker, storm water facilities associated with site development could affect this habitat. (RBF(a), p. 25)

Although there may be storm drains that release water into the Santa Ana River as part of the proposed development, the required wetlands and endangered species permits (Section 404 Wetland Permit, Section 401 Water Quality Certification, Section 1602 Streambed Alteration Agreement and a Section 7 Consultation with USFWS for potential adverse modification of SBKR and Santa Ana Sucker Critical Habitat) would include avoidance and minimization requirements, as well as permit conditions that would ensure that water quality and flow of Mill Creek and the Santa Ana River will not be adversely effected. The Project will also discharge wet weather flows from the onsite wastewater treatment plant into the Santa Ana River. Currently, there are nearly 20 wastewater treatment plants discharging into the Santa Ana River. Wastewater treatment for the Project will be subjected to the same permit requirements and treatment standards. The existing wetlands and endangered species permits (Section 404 Wetland Permits, 401 Water Quality Certification, Section 1602 Streambed Alteration Agreement and a Section 7 Consultation with USFWS for potential adverse modification of SBKR and Santa Ana Sucker Critical Habitat) have proven to provide adequate avoidance and minimization measures for each of the built wastewater treatment plants to ensure that water quality and flow to Mill Creek and the Santa Ana River have not adversely effected these in-stream and riparian habitats. Additionally, larger

flows from the Project site, during wet weather conditions, would be expected to join wet weather flows from the surrounding areas that would flood and scour the immediate and downstream reaches of Mill Creek and the Santa Ana River. Such storm events are natural occurring events and are considered an integral part of the ecosystems found within each of these two drainages systems. No additional impacts would be expected to result from wet weather discharges. **The proposed Project as currently planned would not result in impacts to Santa Ana Sucker or the loss of, or adverse modification to, Santa Ana sucker Critical Habitat.** Therefore, no mitigation is required. (RBF(a), p. 34, 35)

The **Santa Ana speckled dace** (*Rhinichthys osculus* ssp.), a State species of concern, is found in the Santa Ana and San Gabriel river drainages. The dace requires permanent flowing streams with summer water temperatures of 17-20 °C. Typically, these streams are maintained by outflows of cool springs. The dace inhabits shallow cobble and gravel riffles. Overhanging riparian plants, mainly alders and sedges, provide cover for fish. (RBF(a), p. 25)

The Santa Ana speckled dace was once distributed throughout the upland portions of the Santa Ana, San Gabriel, and Los Angeles river systems of Southern California, but was rare in the lowlands. In all three drainages, the species occurred in the mountains and was scattered in the foothills. Today the dace has a very limited distribution in the headwaters of the Santa Ana and San Gabriel rivers. It seems to have been recently extirpated from the Los Angeles River drainage. The Santa Ana speckled dace occupies only remnants of its native range because of water diversions, urbanization of watersheds, introduction of nonnative species, and a myriad of other factors associated with expanding human populations in the Los Angeles region. (RBF(a), p. 25)

The Santa Ana speckled dace is not known to occur in the upper reaches of the Santa Ana River. Further, the proposed Project is not expected to result in any significant impacts to Mill Creek or and Santa Ana River. Although there may be storm drains that release water into the Santa Ana River as part of the proposed development, the required wetlands and endangered species permits (Section 404 Wetland Permit, Section 401 Water Quality Certification, Section 1602 Streambed Alteration Agreement and a Section 7 Consultation with USFWS for potential adverse modification of SBKR Critical Habitat) will ensure that water quality and flow of Mill Creek and the Santa Ana River will not be adversely effected. (RBF(a), p. 25) **No direct or indirect impacts would occur to Santa Ana Speckled Dace** as a result of Project implementation. (RBF(a), p. 37)

The **burrowing owl**, a State species of concern, is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of burrowing mammals (such as ground squirrels [*Spermophilus beecheyi*]) whose burrows are used for roosting and nesting (Haug and Didiuk 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads.

Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators. (RBF(a), p. 26)

The burrowing owl was once abundant and widely distributed within coastal southern California, but it has declined precipitously in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. A petition was filed to list the California population of the western burrowing owl as an Endangered or Threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either Endangered or Threatened. The CDFW currently lists the burrowing owl as a California Species of Special Concern. (RBF(a), p. 26)

Suitable nesting habitat is scattered throughout the Project site, but no burrowing owl or sign of burrowing owl was observed during the habitat assessment or during the course of the numerous focused surveys. Focused surveys for burrowing owl were conducted according to CDFW protocol and concluded that burrowing owl are not present on the property. No evidence was found to suggest recent use of the property by burrowing owl. (RBF(a), p. 26) **No direct or indirect impacts would occur to burrowing owl as a result of Project implementation.** (RBF(a), p. 37)

Ten special status wildlife species were observed onsite during the habitat assessments and focused species surveys. Species observed onsite include: **Cooper's hawk, orangethroat whiptail, yellow warbler, white-tailed kite, yellow-breasted chat, loggerhead shrike, San Diego black-tailed jackrabbit, San Diego desert woodrat, Los Angeles pocket mouse, and Lawrence's goldfinch.** Eleven species, although not observed onsite, were determined to have a moderate or higher potential to occur (**Table 5.4-B**). One of the eleven potentially occurring species is fully protected by CDFW, the **golden eagle.** This species has been observed foraging over the Project site in recent years, including 2010, 2011 and 2012, and can be presumed to use the Project site for foraging. Eight of the eleven potentially occurring species are California Species of Concern (**silver legless lizard, burrowing owl, northern red-diamond rattlesnake, California mountain kingsnake, coast horned lizard, San Diego horned lizard, western spadefoot, and two-striped garter snake**) and two are California watch list species (**southern California rufous-crowned sparrow and California horned lark**). (RBF(a), p. 35)

Of the 21 special status wildlife species that are either present or have a moderate or higher potential to occur, three species (Cooper's hawk, golden eagle, and white-tailed kite) were observed foraging over the Project site but are not expected to nest on the Project site; seven species (yellow warbler, yellow-breasted chat, California mountain kingsnake, San Diego black-tailed jackrabbit, San Diego woodrat, Los Angeles pocket mouse, and two-striped garter snake) occur in riparian habitats that will not be developed; and two species (burrowing owl and California horned lark) may occur in the non-native grassland habitats found along the northern portion of the property in an area that will not be developed. As noted, these two areas, the riparian and non-native grassland habitats, will be avoided during development and set aside as permanent open space as part of Project implementation. (RBF(a), 35)

Nine of the special status species (**southern California rufous-crowned sparrow, silver legless lizard, orangethroat whiptail, northern red-diamond rattlesnake, loggerhead shrike, coast horned lizard, San**

Diego horned lizard, western spadefoot and Lawrence's goldfinch) are either present or have the potential to occur within the RSS habitat found within the proposed development footprint. However, it should be noted that all of these species are also known to utilize the adjacent RAFSS habitats found along the western and southern boundaries of the Project site. In addition, there are various patches of riparian habitats internal to the development footprint that will be preserved and maintained as natural and manufactured open spaces between the various tracts and development phases. Of the nine special status species identified as subject to potential impacts from Project development, only the loggerhead shrike was observed onsite and could be impacted during site development. The remaining eight species have all been determined to have a moderate or higher potential to occur onsite, however, none were observed during the habitat assessments and focused species surveys. The observation of the loggerhead shrike occurred during foraging behavior. No nesting behavior was observed. Impacts would be expected to be limited to loss of foraging habitat. Similarly, three special status raptor species (**Cooper's hawk, golden eagle and white-tailed kite**), were observed foraging over the Project site. None of these three raptor species are known to nest on the Project site. Suitable nesting habitat for Cooper's hawk does occur within Morton Canyon, an area of the Project site that will not be impacted. Although the Project site provides open space, primarily former and remnant orchards, disturbed Riversidean sage scrub and non-native grasslands, portions of which will be developed, the Project is located in a region that has been subject to rural development and still supports large areas of open space that will continue to provide foraging opportunities for all of the above avian species. The Upper Santa Ana River Wash Habitat Conservation Plan abuts the western boundary of the Harmony Specific Plan and will provide over 5,000 acres of permanently protected open space and managed conservation areas. In addition, the San Bernardino National Forest abuts the northern Project boundary and will also continue to provide foraging opportunities. Indirect impacts to special status species would occur if access to the riparian habitats along the western and southern boundaries and Morton Canyon remain open to recreational and other non-authorized uses. **Mitigation measure MM BIO 1 and MM BIO 3 are required to reduce potential indirect impacts to special status wildlife species to less than significant levels.** (RBF(a), pp. 36)

Threshold: *Would the proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.*

As outlined above the Project site contains 116.6 acres of **Riversidean Alluvial Fan Sage Scrub** (RAFSS) habitat within the Project boundary that is associated with the floodplains along the Santa Ana River and Mill Creek. These two streams flow in a southwesterly direction adjacent to the Project site and the RAFSS habitat associated with them extend inside the western and southern boundaries, refer to **Figure 5.4-1 – Vegetation Map**. (RBF(a), p. 13, 41) A total of 31.8 acres RAFSS habitat occurring along Greenspot Road, including the RAFSS habitat west of Greenspot Road that supports the only population of SARWS found on the Project site, will be permanently preserved. Approximately 88.8 acres of RAFSS habitat (38.1 acres of intermediate RAFSS and 50.7 acres of mature RAFSS) will be lost through the Project development, including the off-site street improvements and storm water management

facilities. (RBF(a), p. 41, 42) **Implementation of mitigation measure MM BIO 5 is required to reduce the impacts to the loss of 88.8 acres of RAFSS habitat to less than significant levels.**

Various areas on the Project site support riparian vegetation found in association with the drainage features, irrigation channels, and excavated borrow pits. The Project site contains 13 acres of **Southern Cottonwood Willow Riparian Forest**. This habitat is found along Morton Creek, in the northwest portion of the Project site abutting the San Bernardino Forest. It is a tall, multi-layered, open, canopy riparian community. This area provides suitable habitat for the southwestern willow flycatcher and the least Bell's vireo, both federally and state listed as endangered. (RBF(a), pp.15, 23, 24) The southern cottonwood willow riparian forest associated with Morton Creek will be avoided. **No impacts to Morton Creek are anticipated as a result of Project implementation.**

The Project site contains 15 acres of **Southern Willow Scrub/Mulefat Scrub** habitat which is located in the central portion of the Project site. This portion of the site has been heavily modified by human disturbances, primarily the borrow site activities associated with the construction of the Seven Oaks Dam. The modified conditions have resulted in the development of a deep erosional feature or pit. This pit concentrates sufficient sheetflow runoff to support an isolated riparian plant community of willow trees and mulefat. (RBF(a), p.15)

The Project site also contains a 5 acre depression or pond located in the central portion of the site north of Newport Avenue that retains water during the wet season. The ponded area is primarily un-vegetated. A limited amount of vegetation occurs along the north side of the pond and consists of an early seral community of mulefat (*Baccharis salicifolia*). (RBF(a), p.15)

As outlined above in Section 5.4.1.7 Jurisdictional Resources, the Project site contains 16 jurisdictional drainage features that were delineated using approaches recommended by the regulatory agencies for this site. The jurisdictional drainages include Morton Creek, the largest and most important drainage on site, Deep Creek, existing agricultural drainages created by historic agricultural use, natural landform drainages (do not exhibit a continuous bed-and-bank), and borrow site drainages (incised erosional features). Elderberry is found throughout the site. Where elderberry is located adjacent to CDFW jurisdiction limits were included in the CDFW jurisdictional mapping. (VCS, p. 16) The 15 acres of Southern Willow Scrub/Mulefat Scrub habitat and mulefat along the north side of the 5 acre depression/pond identified in the vegetation mapping by RBF are included in the CDFW jurisdictional limits as this vegetation is considered riparian vegetation associated with the CDFW stream.

USACE jurisdiction totals of 2.31 acres and CDFW jurisdiction totals 47.81 acres within the Project site. The Project will avoid Deep Creek and Morton Canyon, including Morton Creek. Additional drainage features, or portions thereof, are located within Natural Open Space areas of the Project and will be avoided. Approximately 1.29 acres of non-wetland waters of the US under USACE jurisdiction and approximately 31.48 acres of streambeds and associated riparian vegetation under CDFW jurisdiction will be permanently impacted by implementation of the proposed Project (VCS, p. 18). **Implementation of mitigation measure MM BIO 4 is required to reduce impacts to approximately 1.29 acres of USACE non-wetland waters of the US to less than significant impacts. Implementation of mitigation measure**

MM BIO 5 is required to reduce impacts to approximately 31.48 acres of CDFW streambeds, as well as the 88.9 acres of RAFSS habitat, to less than significant impacts.

***Threshold:** Would the proposed Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

As outlined in Section 5.4.1.7 Jurisdictional Resources above, a jurisdictional delineation was prepared for the entire Project site to determine the extent and location of jurisdictional drainages, including waters of the US regulated by the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. Waters of the US are defined to include waters, streams, and wetlands that have an above-ground or below-ground connection to navigable waters, and tributaries to these waters. In non-tidal waters, the limits of jurisdiction under this definition are defined by the ordinary high water mark (OHWM) identified through field observation of features such as shelving and debris deposits. USACE jurisdiction over non-tidal waters of the US extends to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present. The USACE defines a wetland by three criteria: hydrology, soils, and vegetation.

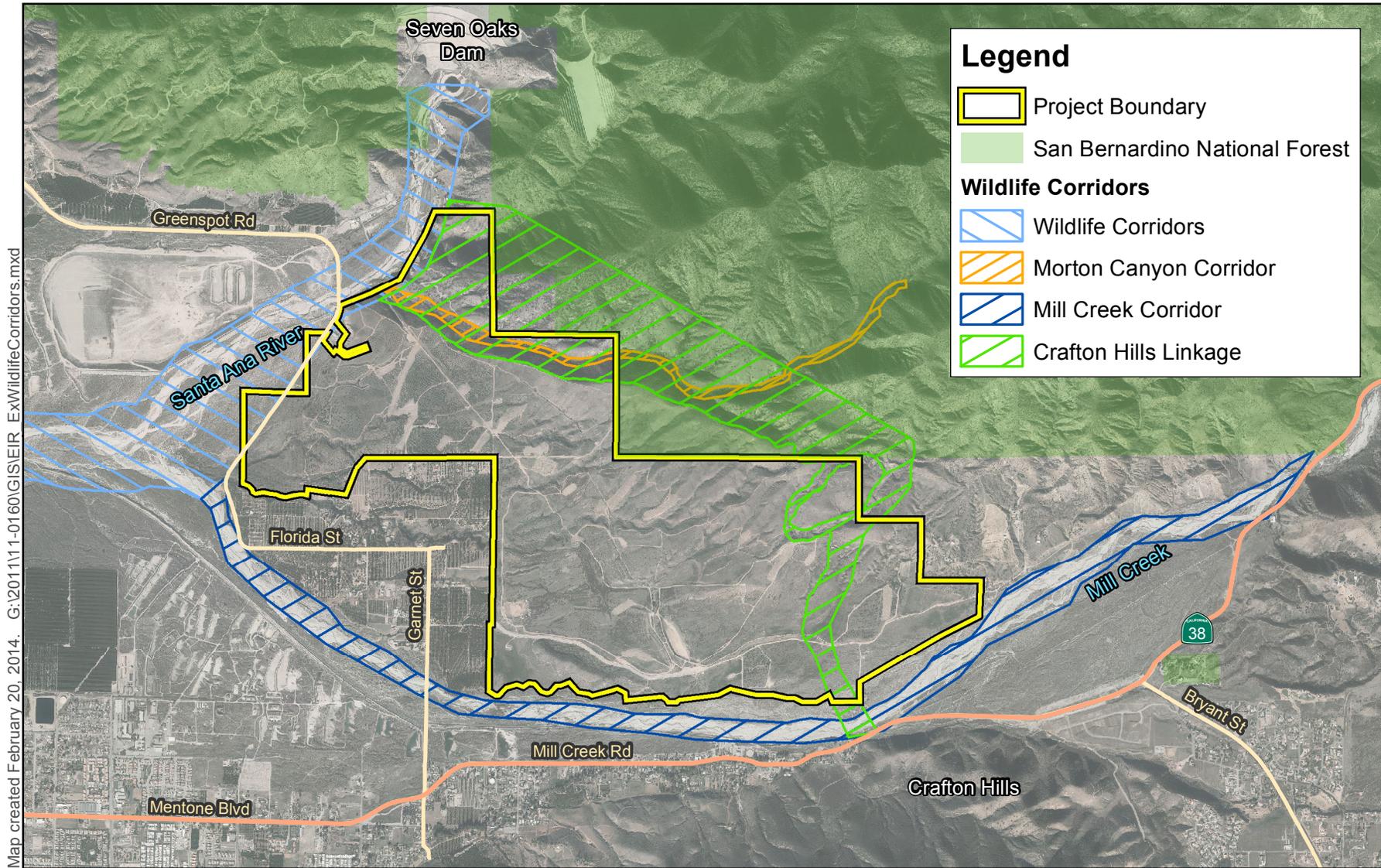
The Project site contains 16 jurisdictional drainage features that were delineated using approaches recommended by the regulatory agencies for this site. The jurisdictional drainages include Morton Creek, the largest and most important drainage on site, Deep Creek, existing agricultural drainages, natural landform drainages (do not exhibit a continuous bed-and-bank), and borrow site drainages (incised erosional features). The Project is preserving the areas of Morton Creek and Deep Creek within the Project site as well as areas upstream of the development footprint along base of the foothills that are located in areas of the Project that will be Natural Open Space. Implementation of the Project will result in permanent impacts to approximately 1.29 acres of non-wetland waters of the US. These drainage features regulated by USACE as defined in section 404 of the Clean Water Act do not contain the three criteria for wetlands. (VCS, pp. 12- 18)

The Project site does not contain wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) and **Project implementation will not result in impacts to wetlands as defined by Section 404 of the Clean Water Act.**

***Threshold:** Would the proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Wildlife movement corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation by human disturbance, or by the encroachment of urban development. Movement corridors are important as the combination of topography and other natural factors, in addition to urbanization, has fragmented or separated large open space areas. The fragmentation of natural habitat creates isolated 'islands' of vegetation that may not provide sufficient area to accommodate sustainable populations and can adversely impact genetic and species diversity.

Two regional wildlife corridors have been identified by South Coast Wildlands within the vicinity of the Project site: 1) an east to west corridor along Mill Creek, south of the Project site; and 2) a wildlife corridor that follows the Santa Ana River into the San Bernardino Mountains. San Bernardino County's General Plan includes a map called "A Plan for Open Space and Trails for San Bernardino County," that included the above mentioned regional corridors, as well as 60 other wildlife corridors in San Bernardino County. The proposed Project site is adjacent to but outside of these two regional corridors—Mill Creek and the Santa Ana River. However, mule deer, mountain lion, bobcat, and possibly badger do move from the San Bernardino National Forest, located along the northern boundary of the Project site, across the Project site, Mill Creek and Highway 38 and then up into the Crafton Hills. Mule deer have been observed on the eastern portion of the property. The presence of mule deer indicates that large mammals are migrating through the eastern portion of the property in order to gain access to Crafton Hills. Highway 38, outside of the site's southern boundary and bordering Mill Creek, does constrain but is not a blockage to wildlife movement. Based on field observations and area topography, wildlife movement occurs primarily in the eastern portions of the Project site where the slopes of the San Bernardino Mountains are less severe, allowing better movement opportunities for larger mammals to travel out of the San Bernardino Mountains, across the eastern portion of the Project site, into Crafton Hills. (RBF(a), p. 26, 27) **Figure 5.4-5 – Existing Wildlife Corridors**, shows the location of existing wildlife movement/corridors through the Project site.



Map created February 20, 2014. G:\201111\1-0160\GIS\EIR_ExWildlifeCorridors.mxd

Sources: San Bernardino County ISD, 2014; RBF, 2014

Figure 5.4-5 – Existing Wildlife Corridors
Harmony Specific Plan Draft EIR

0 1,500 3,000 4,500 6,000 Feet



The proposed Project site does not encroach into Mill Creek or the Santa Ana River and, therefore, would not result in any impacts to wildlife movement along these regional corridors. Alternative movement corridors have been identified in coordination with wildlife biologists familiar with wildlife movement corridors between the National Forest and Crafton Hills that would accommodate the movement of wildlife between the National Forest and Crafton Hills. (RBF(a), p. 38) **Figure 5.4-6 – Proposed Alternative Wildlife Corridors**, shows the two potential locations for wildlife movement corridors across the eastern portion of the Project site.

Implementation of the proposed Project would result in direct impacts to the existing Crafton Hills Linkage by placing residential development and associated infrastructure, including roadways, within the existing corridor footprint or path. As the proposed Project development would interfere substantially with the movement of any native wildlife species, including mule deer, mountain lion, bobcat, and possibly badger between the San Bernardino National Forest and Crafton Hills, implementation of **mitigation measure MM BIO 6 is required to reduce potential impacts from direct interference with movement along the Crafton Hills Linkage wildlife corridor to less than significant levels.**

Natural Open Space would be preserved along the northern, southern and western Project boundaries. The existing vegetation in the proposed Natural Open Space along the boundary between proposed residential development and the Natural Open Space in the northern portion of the Project site is disturbed Riversidean Sage Scrub, which is highly inflammatory. The proposed Project would allow the development of a residential community in an area that supports sage scrub throughout most of the undeveloped Natural Open Space areas. Manufactured open space would be created and maintained in accordance with the Fire Protection Plan between the various phases of development, as well as between the different development units within each phase. A Manufactured Open Space area is proposed between the proposed development and the Natural Open Space to the north within the Alternative Wildlife Corridor Alternative 1 and 2 alignments. Indirect impacts to wildlife movement along the alternative alignments could occur at the Manufactured Open Space area if the plant palette selected does not provide appropriate habitat/cover for continued movement of the target wildlife species (mule deer, mountain lion, bobcat, and possibly badger). The manufactured open space would be designed to avoid fire hazards through the use of a Master Plant Palette that provides a list of plants suitable to the area and that promotes habitat restoration, as well as provides fire protection. All aspects of the Fire Protection Plan will be carefully researched against the requirements for maintaining an adequate wildlife habitat and movement corridor within the Project boundaries. In addition, these manufactured open space corridors between development units would provide movement corridors for wildlife movement both north and south, as well as east and west, through the Project site. (RBF(a), p. 37, 38) Indirect impacts to existing regional corridors outside the development footprint, including the Santa Ana River corridor, Mill Creek corridor and Morton Canyon Corridor could also occur if access to these areas are open to recreational and other unauthorized uses. **With implementation of mitigation measure MM BIO 1, indirect impacts to existing regional wildlife corridors from unauthorized use would be reduced to less than significant impacts.**

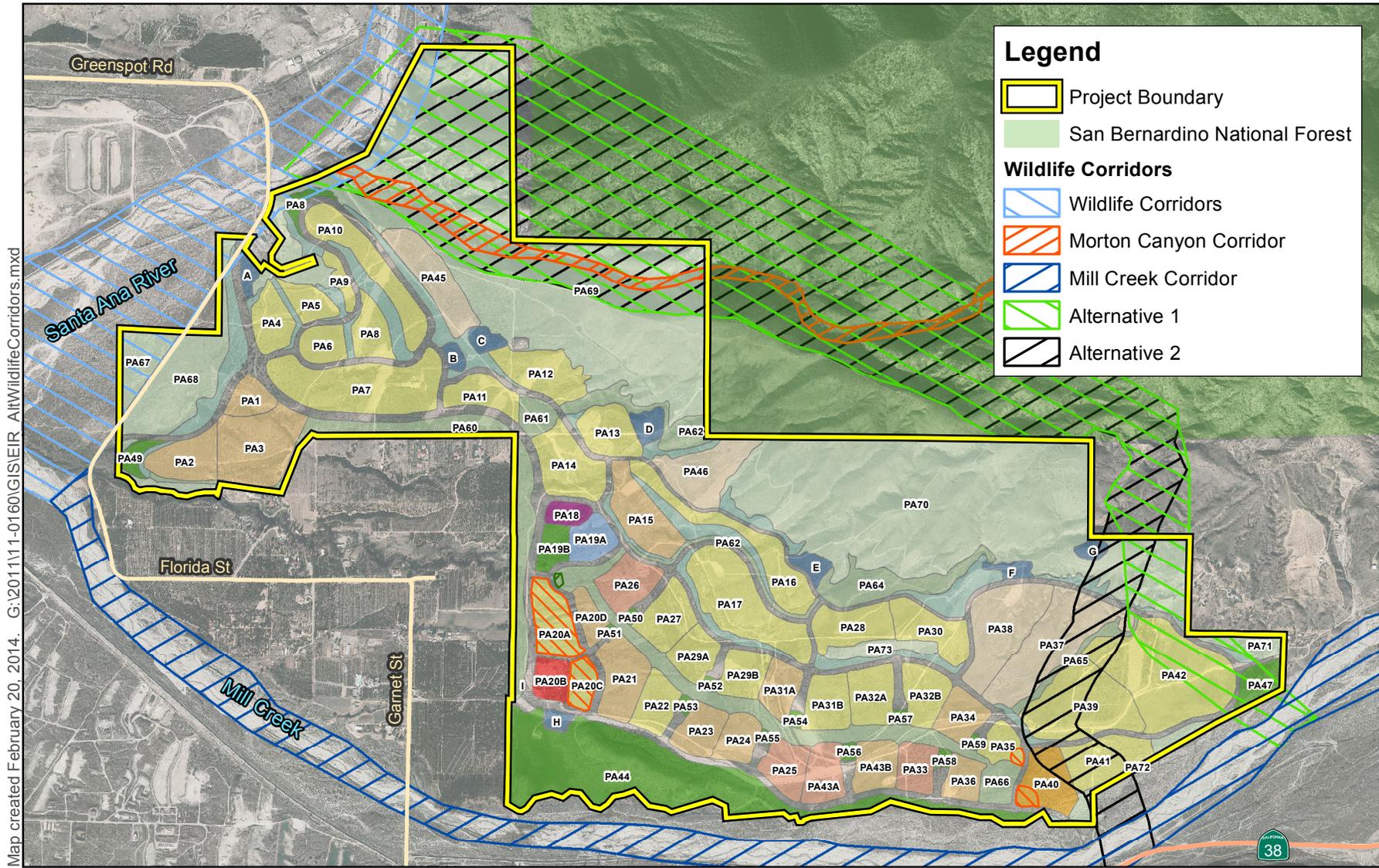


Figure 5.4-6 – Proposed Alternative Wildlife Corridors
Harmony Specific Plan Draft EIR

0 1,500 3,000 4,500 Feet



The Project site does not contain corridors for native or migratory fish and therefore, implementation of the Project would not interfere with fish movement. The Project site does not contain a native wildlife nursery site therefore; Project implementation would not impede the use of a native wildlife nursery.

Threshold: *Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

City of Highland Municipal Code Chapter 8.36 regulates the removal of heritage trees and Chapter 16.64, Section 50 regulates riparian habitats.

Chapter 8.36– Heritage Trees: Heritage trees are defined as any live woody plant more than 15 feet in height and with a single-trunk circumference of 24 inches or greater; or a multi-trunk tree with total circumference of 30 inches or greater; or a stand of trees in which each is dependent on the others for survival; or any other tree as may be deemed historically or culturally significant by the Community Development Director or designee because of size, condition, location, or aesthetic qualities. Relocation, removal, or destruction of heritage trees is prohibited without first obtaining a tree removal permit from the Community Development Director. Exceptions to this policy are specified in said Section.

Chapter 16.64, Section 050 – Riparian Plant Conservation: The removal of any vegetation within 25 feet of the drip line of riparian vegetation along a USGS blue line stream or indicated as a protected riparian area on a community or specific plan, shall be subject to a tree removal permit in accordance with the procedures detailed by this section and shall be subject to environmental review.

The development footprint of the Project site is dominated by disturbed Riversidean Sage Scrub, non-native grasses and former and remnant orchards. Areas within the Project site that are largely avoided and set aside in Open Space are dominated by Riversidean Alluvial Fan Sage Scrub, Chaparral and Southern Cottonwood Willow Riparian Forest. Historically most of the Project site consisted of citrus groves. Several groves remain in the northwest portion of the Project, but are no longer harvested and the rest have been long abandoned. Elderberry trees, an invasive and ubiquitous species also are located within the Project site. Any tree not located on natural open space will need to be removed as part of Project implementation and the applicant will obtain a tree removal permit as necessary.

The proposed Project will implement this policy through the planting through the implementation of tree lined streets. The Harmony Landscape Plan identifies a fruiting tree, a native tree, and street trees for each of the Project's three landscape districts.

As outlined above, impacts to riparian vegetation were minimized to the extent feasible through avoidance and inclusion in Open Space areas. Impacts to riparian vegetation that cannot be avoided are mitigated to less than significant impacts with implementation of mitigation measure **MM BIO 5**.

Therefore, the proposed Project is in compliance with City of Highland Municipal Code Chapter 8.36 that regulates the removal of heritage trees and Chapter 16.64, Section 50 that regulates riparian habitats.

Future development of all land within the City is guided by the City of Highland General Plan which was adopted on March 14, 2006. The General Plan outlines comprehensive, long-term land use policies to guide development within the City. The land use policies implement the General Plan's land use goals; therefore, if a project is consistent with the policies associated with a goal, such a project is deemed to

be consistent with said General Plan goal. The policies that are contained in the General Plan that are applicable to the proposed Project are analyzed in Section 5.10, *Land Use and Planning* of this DEIR. The following policies applicable to biological resources are outlined below followed by an analysis of the Project's consistency with these policies. Policies deemed not relevant to the Project, based on proposed land uses, are not outlined below.

Goal 2.15, Policy 6: Provide appropriate habitat corridor linkages in collaboration with applicable habitat conservation planning.

The proposed project is not within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. Therefore, the Project is consistent with this policy.

Goal 5.1, Policy 9: Preserve mature trees, natural hydrology, native plant materials and areas of visual interest.

Approximately 535 acres of the site (or 32%) will remain as natural open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved. All trees and vegetation in the natural open space areas will be preserved. The majority of the natural open space provides a transition to the San Bernardino National Forest and as such offers some protection of the view shed. The portions of the Project site to be developed will have the majority of the existing vegetation removed, including the former orchards because the trees are aging and no longer productive. The Landscape Design Guidelines for the Harmony Specific Plan identified three landscape districts, each of which possesses a distinctive character that will contribute to the overall agricultural theming of the community. Each district includes a fruiting tree and a native tree. The districts and their trees are: (HSP, pp. 9-3 9-6)

Citrus District – Agricultural Tree: Orange Tree, Native Tree: California Bay

Walnut District – Agricultural Tree: English Walnut, Native Tree: Coast Live Oak

Apple District – Agricultural Tree: Apple, Native Tree: California Sycamore

Although the Project will entail the removal of mature trees and some native plant materials, because areas of visual interest, i.e., the view of the mountains, are being preserved and the landscape plan includes native plant species and trees that will mature over time, the Project is considered consistent with this policy.

Goal 5.7, Policy 2: Ensure that all development, including roads proposed adjacent to riparian and other biologically sensitive habitat; avoid significant impacts to such areas.

The Project site does contain some areas with riparian habitat that supports listed species, including Morton Creek. However, this area is being avoided and preserved as Open Space. The developable areas were generally sited to avoid sensitive habitat areas. However, some sensitive habitat is planned to be developed. Through compliance with the mitigation measures listed in Section 5.4. 6, impacts will be less than significant. Therefore, the proposed Project is consistent with this policy.

Goal 5.7, Policy 3: Require that new development proposed in such locations be designed to:

- **Minimize or eliminate the potential for unauthorized entry into the sensitive area;**
- **Create buffer areas adjacent to the sensitive area, incorporating the most passive uses of the adjacent property;**
- **Protect the visual seclusion of forage areas from road intrusion by providing vegetative buffering;**
- **Provide wildlife movement linkages to water sources and other habitat areas;**
- **Provide native vegetation that can be used by wildlife for cover along roadsides; and**
- **Protect wildlife crossings and corridors.**

The Harmony Specific Plan includes approximately 834 acres of recreation and open space, including 535 acres which will remain in natural open space, creating a buffer from development and the adjacent natural open space areas, including the San Bernardino National Forest. The 535 acres of natural open space includes approximately 47 acres of Riversidean Alluvial Fan Sage Scrub that supports the Santa Ana River woolly star which will remain preserved. Within the natural open space areas to the north, a network of multipurpose trails are planned, largely based on the existing trails that have been forged over the years. (HSP, p. 4-8) In concert with the passive recreational trails, educational and interpretive stations and signs, including the woolly star set aside area, are sited to capture the interest of users and promote an understanding and stewardship of the land, to further help protect this sensitive area and prevent unauthorized entrance (HSP, p 1-4). Therefore, the proposed Project is consistent with this policy.

Goal 5.7, Policy 4: Design lighting systems so as to avoid intrusion of night lighting into the sensitive area.

The proposed Project will be required to comply with all applicable codes and ordinances which require that lighting systems avoid intrusion of night lighting into sensitive areas. Therefore, the proposed Project is consistent with this policy.

Goal 5.7, Policy 5: As part of the environmental review process, require that projects determined to be located within a biologically sensitive area prepare documentation on the impacts of such development along with mitigation and mitigation monitoring programs.

Section 5.4.6 includes required mitigation measures to reduce impacts to less than significant levels based on a Project site Habitat Assessment and various supporting focused protocol surveys for sensitive species (Appendix D of this DEIR). As required by CEQA, a mitigation monitoring and reporting program will be included as part of the Final EIR. For these reasons the proposed Project is consistent with policy.

Goal 5.7, Policy 6: Ensure that required biological assessments are conducted in cooperation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

Biological resources monitoring of the Specific Plan area was conducted in 2011 and 2012. A copy of the Habitat Assessment is included as Appendix D of this DEIR. The biological monitoring was conducted in

accordance with the protocols established by the resource agencies for the species being monitored. The biologists conducting the monitoring and the focused surveys possess the requisite permits from the California Fish and Wildlife and the U.S. Fish and Wildlife Service. Additionally, staff from the USACE, RWQCB, and CDFW attended a site visit and provided guidance on the approach to be used in assessing jurisdictional drainages. (VCS, p. 9) Therefore, the proposed Project is consistent with this policy.

Goal 5.7, Policy 7: Within existing natural and naturalized areas, preserve existing mature trees and vegetation.

Approximately 535 acres of the site (or 32%) will be devoted to natural open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved. The majority of the natural open space provides a transition to the San Bernardino National Forest. Therefore, the Project is consistent with this policy.

Goal 5.7, Policy 8: Within rural and hillside residential areas, permit only such natural vegetation to be removed as is necessary to locate home sites, construct access roads and ensure fire safety.

See response to Goal 5.7 Policy 7 above. The Project is consistent with this policy.

Goal 5.7, Policy 9: Enforce requirements that healthy, mature individual specimen trees be preserved in place, as per the City Municipal Code.

This is a municipal measure intended to retain, to the extent feasible, significant heritage trees within the City. Historically most of the Project site consisted of citrus groves. Several groves remain in the northwest portion of the Project, but are no longer harvested and the rest have been long abandoned. Elderberry trees, an invasive and ubiquitous species also are located within the Project site. Any tree not located on natural open space will need to be removed as part of Project implementation and the applicant will obtain a tree removal permit if necessary.

The proposed Project will implement this policy through the planting through the implementation of tree lined streets. The Harmony Landscape Plan identifies a fruiting tree, a native tree, and street trees for each of the Project's three landscape districts.

Goal 5.7, Policy 12: Require replacement at a 2:1 ratio of all mature trees (those with 24-inch diameters or greater measured 4½ feet above the ground) that are removed.

The proposed Project contains landscape and design guidelines which require tree lined streets as part of the streetscape program, trees planted as part of monumentation, and trees planted throughout the Project to define separate landscape districts, will meet the requirement of replacing all trees 24-inch diameters or greater that are removed. Therefore, the Project is consistent with this policy.

Therefore, the proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and **potential impacts are less than significant.**

***Threshold:** Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. The Management Plan for the Santa Ana River Woolly Star (1993) is applicable to the Santa Ana River Woolly Star Preserve Area (WSPA), which was established in 1988 by the U.S. Army Corps of Engineers to provide mitigation to offset the impacts from the development of the Seven Oaks Dam at the top of the Santa Ana River. The proposed Project would not conflict with any of the recommendations or provisions contained within the Management Plan for the Santa Ana River Woolly Star, because the Preserve Area is west of the proposed Project area and would not be adversely affected by the implementation of the proposed Project. The proposed Project would also not conflict with the proposed Upper Santa Ana River Wash Land Management Plan (Wash Plan) and Habitat Conservation Plan (HCP) (January 2010). The Wash Plan/HCP Area is located west of the proposed Project area and would not be adversely affected by Project implementation. (RBF(a), p.44)

There currently is no regional Habitat Conservation Plan for the area in which the proposed Project is located. San Bernardino County has been hosting a series of preliminary planning meetings with local cities, key individuals and organizations, and the general public over the last two years to receive input on development of the proposed San Bernardino Valley-wide Multiple Species Habitat Conservation Plan (MSHCP). Although the proposed Project area would be expected to be within the County's MSHCP planning area, the Plan is still in the preliminary planning stage and it is not anticipated that USFWS will issue an individual take permit for this MSHCP any time in the foreseeable future. (RBF(a), p.44)

Therefore, the proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan, and **no impacts would occur** in this regard. No mitigation is required. (RBF(a), pp.44, 45)

5.4.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce the potential significant adverse impacts. The following measures shall be implemented to eliminate or reduce potentially significant impacts to sensitive biological resources to below the level of significance.

MM BIO 1: Several areas with sensitive habitats on the Project site will not be developed: 31.8 acres of the RAFSS habitat supporting Santa Ana River Woollystar along the site's western boundary as well as the riparian habitats in Morton Canyon. Access to these areas will be restricted. An appropriate barrier/fence shall be installed to prevent unauthorized use. Educational signage shall also be posted to educate residents of the sensitivity of biological resources in each area, as well as the presence of a federal and state mandated conservation area to the west of the Project site, including the woolly star preserve area and the pending Upper Santa Ana River Wash and HCP.

MM BIO 2: In order to reduce potential direct impacts to SBKR from the loss of RAFSS habitat and indirect impacts from the release of storm water into the RAFSS habitat, the loss of RAFSS habitat shall be mitigated by one or a combination of the following subject to USFWS and CDFW approval:

- purchase of RAFSS habitat at a 2:1 ratio from the Cajon Creek Conservation Bank;
- payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for RAFSS habitat at a 2:1 ratio;
- restoration and long-term management of onsite of mature RAFSS habitat to intermediate habitat at a 2:1 ratio;
- and/or restoration and long-term management of off-site low quality RAFSS immediate south of the proposed storm drain facility to high quality RAFSS habitat at a 2:1 ratio.

MM BIO 3: Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Wildlife Code. If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extend from February 1 - August 31, but can vary from year to year based upon seasonal weather conditions), a pre-construction clearance survey for nesting birds, should be conducted within 7 days prior to any ground disturbing activities. This will ensure that no nesting birds will be disturbed during construction.

MM BIO 4: In order to reduce impacts from the loss of approximately 1.29 acres of waters of the US to less than significant levels this loss shall be mitigated by one or a combination of the following subject to USACE approval:

- purchase of mitigation credits at a 2:1 ratio, or the USACE agreed upon ratio, from an USACE approved Mitigation Bank;
- payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for the loss of waters of the US at the agreed upon ratio;
- and/or the enhancement, conservation, and long-term management of onsite waters of the US at the agreed upon ratio. If restoration and enhancement of onsite ephemeral stream habitat is a selected option, implementation shall be detailed in a Habitat Mitigation and Monitoring Plan (HMMP) that shall be prepared, reviewed and approved by USACE as part of the 404 permitting process.

MM BIO 5: In order to reduce impacts from the loss of approximately 31.48 acres of streambeds as well as the 88.8 acres of RAFSS habitat (38.1 acres of intermediate RAFSS habitat and 50.7 acres of mature RAFSS habitat) under CDFW jurisdiction to less than significant levels this loss shall be mitigated by one or a combination of the following subject to CDFW approval:

- purchase of streambed and associated riparian habitat at a 2:1 ratio from the Cajon Creek Conservation Bank;
- payment into the Riverside-Corona Resource Conservation District in-lieu fee program established for the loss of streambed and associated riparian vegetation at a 2:1 ratio;

- restoration and long-term management of onsite streambeds and associated riparian vegetation at a 2:1 ratio;
- and/or restoration and long-term management of off-site low quality streambed and associated riparian vegetation to high quality habitat at a 2:1 ratio. If restoration and enhancement of riparian habitat is a selected option, implementation shall be detailed in an HMMP that shall be prepared, reviewed, and approved by CDFW as part of the Streambed Alteration Agreement process.

MM BIO 6: In order to reduce impacts from the Project on existing Crafton Hills Linkage wildlife corridor a wildlife movement corridor shall be developed in the eastern portion of the Project site that shall meet the following requirements:

- Provide connectivity between the San Bernardino Mountains and Crafton Hills, two areas of naturally occurring habitats that were once contiguous wildlife habitat prior to human development in the region, including Highway 38;
- Provide a needed avenue for genetic interchange, both for wildlife, as well as plant species;
- Identify a conduit or wildlife movement corridor in response to environmental changes and natural disasters; and
- Allow individuals of a species to re-colonize an area from which they may become extirpated.

The following performance standards shall be used to identify the wildlife corridor alignment and shall continue to be used to determine its ongoing suitability for providing movement opportunities and connectivity for wildlife between the San Bernardino Mountains and the Crafton Hills:

1. A wildlife corridor at least 300 feet wide shall be established and vegetated with plant species similar to those areas in the San Bernardino Mountains and in the Crafton Hills being connected by the corridor;
2. Target species shall be identified that require movement opportunities between the San Bernardino Mountains and Crafton Hills;
3. The movement and dispersal patterns, including seasonal migration patterns, for each target species or species of interest can be shown to be routinely migrating between the San Bernardino Mountains and Crafton Hills;
4. The corridor shall be designed to accommodate movement by large mammals, in particular, mule deer, mountain lion, bobcat and American badgers;
 - Large mammals can expected to be able to encounter and use the corridor;
 - The habitat within the corridor shall be conducive to attracting the identified large mammals and to encourage movement through the corridor;
 - The corridor shall be created to provide sufficient shelter, food and water for wildlife to move through it; and

- The corridor shall be designed to avoid, where feasible, impediments to the use of the corridor such as human activity, road crossings, fencing, and stream channelization. Two existing road crossing will be maintained to provide access from the Project site to residential developments to the east.
5. Specific management guidelines shall be specified that include:
- Restrictions on land uses within and adjacent to the corridor;
 - Domestic pets, off-road vehicles, lighting, and recreational activities will be not permitted within the wildlife corridor; and
 - Two future road crossings will be allowed at grade to provide access to residences to the east of the Project site, however, the location and design shall incorporate measures to minimize impacts to wildlife use of the corridor.
6. A monitoring program shall be included to ensure the selected/implemented corridor is functioning and providing wildlife movement opportunities. The monitoring program shall assess animal use of the corridor both before and post construction of the Project for a period not to exceed five years after Project completion and will be managed by the City of Highland.

5.4.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The proposed mitigation measures will ensure that the proposed Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered, threatened, candidate, sensitive or special status species, or on riparian habitats or other sensitive natural communities, or interfere substantially with a wildlife corridor. With the above mitigation measures implemented, impacts to sensitive biological resources will be reduced to a **less than significant level**.

5.4.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Section 7.1.7 of the DEIR contains further information regarding cumulative effects.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that substantially diminish or result in the loss of an important biological resource, or those that would conflict with local, State, and/or Federal resource conservation plans, goals, or regulations. Impacts can be locally adverse but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis. (RBF(a), p.45)

The cumulative impacts associated with the proposed Project and surrounding areas, where similar types of development are occurring or proposed, would be considered less than significant due to the minimal amount of permanent loss of intact biological habitat or sensitive species that depend on these

resources, permanent preservation of 535 acres of open space throughout the Project site, as well as the mitigation measures that would mitigate impacts to biological features. (RBF(a), p.45)

Section 7 of this DEIR contains a list of approved or planned future projects within the City of Highland (**Table 7-A – Cumulative Development Projects**). These projects in combination with the proposed Project may contribute to cumulative biological impacts in the City. However, according to the CEQA Guidelines, determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. The cumulative analysis should also define the geographic scope of the area affected by the cumulative effect. Considering the biological resources affected by the proposed Project, in particular, to wildlife corridors and movement, related projects should focus on those developments located along the Santa Ana River corridor. (RBF(a), p.45)

As noted, the area with **Santa Ana River Woollystar (SARWS)** is immediately adjacent to an area that is being set aside for conservation by San Bernardino Valley Water Conservation District and other agencies and municipalities as part of the Upper Santa Ana River Wash Plan and Habitat Conservation Plan. The Plan provides permanent protection and long-term management for the area. **No cumulative impacts** have been identified for this area that could adversely affect this existing population of SARWS. (RBF(a), p. 45)

The proposed Project site does not contain slender-horned spineflower and **would not result in cumulative impacts to slender-horned spineflower.** (RBF(a), p. 45)

The RAFSS habitat south of the Project site occurs as a narrow band of bench habitat bordering Mill Creek and is located immediately adjacent to the Project's southern boundary. Those portions of RAFSS habitat within the Project boundaries would not be developed and would be maintained as permanent open space. Approximately 7.3 acres of this intermediate RAFSS habitat extends into the southeast corner of the Project site and would be developed. However, no cumulative impacts beyond this direct impact have been identified for this area that could adversely affect RAFSS habitat and/or SBKR. There are no known plans to develop on the banks or within Mill Creek. **No cumulative impacts have been identified for this area that could adversely affect RAFSS habitat and/or SBKR.** (RBF(a), pp. 45, 46)

Although the Project site has been subjected to extensive agriculture use and used as a borrow area, there are various stages of coastal sage scrub (CSS) on the Project site, which could support CAGN. CAGN historically occurred on the Project site, however, its population has been significantly reduced or eliminated from the long-standing agricultural use of the area, as well as the use of the site for borrow material for construction of the Seven Oaks Dam. **No cumulative impacts have been identified for this area that could adversely affect CAGN.** (RBF(a), p. 46)

The Project site abuts with the National Forest boundary along its northern boundary. As noted, the northern portion of the Project site, the area immediately adjacent to the National Forest Service boundary, would not be developed. There are no known plans to develop land between the northern boundary of the Project footprint and the National Forest boundary. **No cumulative impacts have been identified for this area that could adversely affect SWWF or LBVI.** (RBF(a), p. 46)

The proposed Project site does not support burrowing owls and **would not result in cumulative impacts to burrowing owl.** (RBF(a), p. 46)

There are no known plans to develop within the riparian habitats adjacent to the western and southern boundaries of the Project site. Implementation of mitigation measure **MM BIO 6** reduces Project impacts to riparian habitats to less than significant levels. **No cumulative impacts have been identified for this area that could adversely affect riparian habitat.** (RBF(a), p. 46)

As outlined above, implementation of the Project will not adversely affect regional wildlife corridors in or adjacent to the site including Santa Ana River Corridor, Mill Creek Corridor, and the Morton Canyon Corridor. The Project will adversely affect the existing Crafton Hills Linkage corridor; however, implementation of mitigation measure **MM BIO 7** will reduce impacts to this corridor to less than significant levels. Cumulative development within the Crafton Hills Area could result in potential impacts to the movement of wildlife along the Mill Creek corridor. **The proposed Project would not significantly contribute to cumulative impacts to wildlife corridors because Project impacts would be offset by the mitigation measures described above.** (RBF(a), p. 46)

5.4.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

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|--------|--|
| RBF(a) | RBF Consulting, <i>Habitat Assessment Greenspot Property</i> , March 2014. (Appendix D.1) |
| Code | City of Highland, Highland Municipal Code, (Available at http://www.codepublishing.com/ca/highland/ , accessed on January 29, 2014.) |
| GP | City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/PDFs/05-Conservation & OS.pdf , accessed August 11, 2011.) |
| HSP | City of Highland, <i>Harmony Draft Specific Plan</i> , March 2014. (Available at the City of Highland.) |
| VCS | VCS Environmental, <i>Greenspot Jurisdictional Delineation Report</i> , October 2012. (Appendix D.2) |

5.5 Cultural Resources

This section evaluates the Project's potential impacts to historic resources, archaeological resources and paleontological resources. The following discussion is a summary of the *Phase I Cultural Resources Investigation and Preliminary Assessment of Impacts on Cultural Resources Identified within the Orange County Flood Control Property in Highland/Mentone Area of San Bernardino County, California* prepared for the proposed Project by McKenna et al. on October 31, 2011. This report is contained in its entirety as Appendix E of this document.

5.5.1 Setting

The Project site is located at the foothills of the San Bernardino National Forest east of the Santa Ana River and north of Mill Creek. The Project site can be characterized as mostly gently sloping and rolling terrain in the south and west, with moderately to steeply sloping terrain in the north and northeast. The elevation of the site varies from approximately 1,800 feet above sea level along the western boundary to approximately 2,700 feet above sea level at the foothills on the northeast side of the property as reflected in **Figure 5.5-1 – USGS Map**.

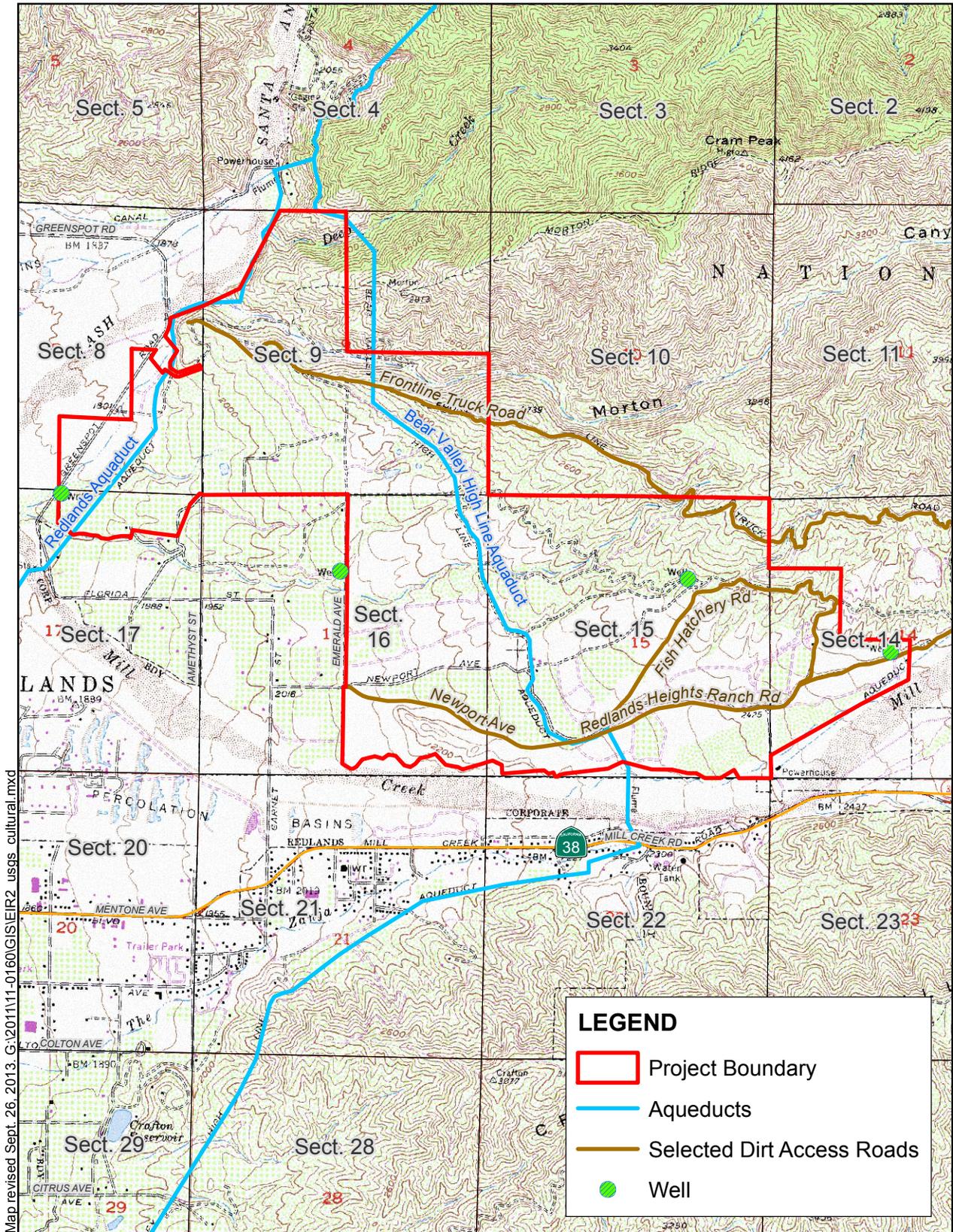
As shown in **Figure 5.5-1**, the entire Project site is located on the USGS Yucaipa Quadrangle (scale 1:24000) and involves lands within Township 1 South; Range 2 West; and all or portions of Sections 8,9,14,15,16, and 17. Major features identified on the current USGS quadrangle include: the Redlands Aqueduct; the Bear Valley High Line Aqueduct and flume; the Front line Truck Road; at least three well sites; three historic residential complexes; and various dirt access roads. The USGS Yucaipa quadrangle also illustrates the presence of orchards. (McKenna et al., p. 2).

From the 1880s to at least the 1960s the Project site was considered agricultural and associated with at least three relatively large "ranches" devoted to citrus and fruit growing—Featherstone Ranch, Brown Ranch, and Roberts Ranch (the three ranches are described below).

Today, the Project site is vacant and consists of remnant citrus trees from the past use as an orchard, which have not been cultivated or tilled for over 20 years and an area which was used as a borrow site to build the Seven Oaks Dam. There are no standing structures located on the Project site. However, remnants of the Project site's agricultural past still remain. For instance, portions of prior building foundations, roads, irrigation systems, and water wells are still present. However, these prior improvements have been destroyed, or are only partially intact. **Figure 3-4** provides photographs of the Project site.

5.5.1.1 Paleontological Setting

The *Phase I Cultural Resources Investigation* (Appendix E) concluded that the Project site consists of deposits that are known to have yielded fossil specimens in similar contexts and, therefore, found the Project site to have a relatively high potential to yield evidence of fossils (McKenna et al., p. vii). The *Phase I Cultural Resources Investigation* also concluded that "if fossils are present within the project area, they will be identified in a buried context and may include both large and small mammals, and possibly, invertebrates." (McKenna et al., p. 65)



Map revised Sept. 26, 2013. G:\201111-0160\GIS\IEIR2_usgs_cultural.mxd

Source: USGS, Yucaipa Quadrangle (T1S, R2W)

Figure 5.5-1 – USGS Map
Harmony Specific Plan Draft EIR

0 1,000 2,000 3,000 4,000 5,000
Feet

5.5.1.2 Prehistoric Setting

The archaeological record of Southern California is a rich and complex continuum traditionally divided into time sensitive units based on changes in artifact types and styles. Archaeological data and correlations with ethnographic data have resulted in the determination of the following chronology for Southern California prehistoric times (McKenna et al., pp. 14-15):

- **Early Man Horizon:** This period, pre-dating 6,000 B.C., is characterized by the presence of large projectile points and scrapers, suggesting reliance on hunting rather than gathering.
- **Milling Stone Horizon:** This period, from 6,000 B.C. to 1,000 B.C., is characterized by the presence of hand stones, milling stones, choppers, and scraper planes; tools associated with seed gathering and shell fish processing with limited hunting activities; and evidence of a major shift in the exploitation of natural resources.
- **Intermediate Horizon:** This period, from 1,000 B.C. to A.D. 750, reflects the transitional period between the Milling Stone and Late Prehistoric Horizons. Little is known of this time period but evidence suggests interactions with outside groups and a shift in material culture reflecting this contact.
- **Late Prehistoric Period:** This period, from A.D. 750 to European contact, is characterized by the presence of small projectile points; use of the bow and arrow; steatite (soapstone) containers and trade items; asphaltum; cremations; grave goods; mortars and pestles; and bedrock mortars.

Native Americans have lived in the southern part of California, including the Highland area, since approximately 10,000 B.C. (GP EIR p 5.5-4). With respect to prehistoric background for the Project area, the *Phase I Cultural Resources Investigation* (Appendix E) states that the region is located in an ethnographic area associated with the Gabrieliño (Tongva) of the Los Angeles Basin, San Gabriel Valley, and San Bernardino Valley and the Serrano, identified as a small ethnic group of Native Americans occupying the area now known as the San Gabriel/San Bernardino Mountains and foothills. On occasion, the area may also have been occupied by the Serrano of the nearby San Gabriel and San Bernardino Mountains and/or Cahuilla from the Desert areas.

Gabrieliño

The Gabrieliño are known as a society identified by Late Prehistoric/Proto-historic ethnographic records and archaeological data identifying Late Prehistoric occupation of Southern California. The term "Gabrieliño" is a reference to the direct association between the Native American population of the San Gabriel Valley and the Mission San Gabriel de Archangel. The Mission was originally located in the Whittier Narrows area but relocated shortly after its founding because of unstable ground along the Rio Hondo/San Gabriel River channels. The Mission San Gabriel serviced the entire San Gabriel Valley; ranging from the coast to the San Gabriel/San Bernardino Mountains and from northern Los Angeles County to just north of San Juan Capistrano. The northern and eastern extent of their territory included the San Gabriel and San Bernardino Mountains and areas generally associated with the Serrano of the mountain and desert regions.

The Gabrieliño utilized numerous plants and animals for food, shelter, and medicines. They used seeds most often, followed by foliage, shoots, fruits, and berries. Mountain shrubs, ash, elder, and willow were used for shelters and tool materials (e.g. bows). Over twenty plants were used regularly for medicinal purposes. Fauna used as food sources included deer, rabbits, wood rats, squirrels, quail, and ducks. Animals specifically not used were dog, coyote, bear, tree squirrel, pigeon, dove, mud hen, eagle, buzzard, raven, lizards, frogs, and turtles. Along the coast, the Gabrieliño regularly exploited the wetlands and ocean resources. They also developed and utilized numerous styles of bows, bedrock mortars, portable mortars, pipes, chisels, metates, manos, and various forms of chipped stone tools.

Prior to the establishment of the Mission system, populations tended to live in larger villages with a series of "daughter" or "satellite" sites (limited activity areas) with lesser populations. Seasonal migration was practiced for the exploitation of resources and protection from seasonal weather conditions. Habitation structures were constructed of branches, grasses, and mud and interior hearths were used for heat. Cooking was generally conducted outdoors with hearths generally used for food preparation (McKenna et al., p. 10).

Serrano

The *Phase I Cultural Resources Investigation* (Appendix E) states that on occasion the area surrounding the Project site may have been occupied by the Serrano of the nearby San Gabriel and San Bernardino Mountains.

The term "Serrano" is derived from the Spanish word for "mountaineer" or "those of the Sierras"; an appellation assigned by the early Spanish explorers. The Serrano are culturally associated with their surrounding neighbors (the Gabrieliño, Luiseño, Cahuilla, and Cupeño), but distinguished by their linguistic associations with Takic speakers of the eastern desert regions - of Shoshonean stock (e.g. the Kitanemuk and Vanyume). Known as hunters and gatherers, there are no definitive boundaries for Serrano territory. (McKenna et al., pp. 10-11)

Although their exact territorial boundaries were (are) undefined, the Serrano are known to have definitive or favored territories for the exploitation of Native resources. The Serrano territory was somewhat restricted to the San Bernardino Mountains, east of the Cajon Pass and between Yucaipa and Victorville. (McKenna et al., p. 11)

The Serrano developed a sophisticated social scheme interpreted as a semi-sedentary lifestyle. Serrano villages were generally small and located in the foothills of the Upper Sonoran life zone - where potable water was available - or in the mountains. Implements identified within such habitation sites include metates and manos, mortars and pestles, knives, scrapers, ceramic bowls and trays, baskets, and bone implements. Technologically, the implements used by the Serrano were quite similar to those of the surrounding populations. Dwellings were constructed of natural resources and are described as circular, domed structures built of willow frames and tule thatching. The structures were substantial enough to facilitate occupation of high altitudes during winter months in the San Gabriel Mountains. They also constructed ceremonial structures. (McKenna et al., p. 11)

European contact with the Serrano dates to 1771, with the founding of the Mission San Gabriel de Arcangel, and 1772 (Pedro Fages' California expedition). Contact was minimal until ca. 1819, when the

Redlands Asistencia were established. Between 1819 and 1824, the majority of Serrano were physically relocated to the Mission properties but, with Secularization (beginning in 1824), the remaining Serrano returned to their traditional territories. The recognized Serrano of today are associated with the San Manuel and Morongo Reservations in San Bernardino and Riverside Counties, respectively. It is estimated that fewer than 3,000 Serrano remain in Southern California (McKenna et al., p. 13).

Cahuilla

The *Phase I Cultural Resources Investigation* (Appendix E) states that on occasion the area surrounding the Project site may have been occupied by the Cahuilla from the Desert areas.

The territory of the Cahuilla ranges from the area near the Salton Sea up to the San Bernardino Mountains and San Geronio Pass. The Cahuilla are generally divided into three groups: Desert Cahuilla, Mountain Cahuilla, and Western (or Pass) Cahuilla. The term Western Cahuilla is preferred over Pass Cahuilla because this group is not confined to the San Geronio Pass area. The distinctions are believed to be primarily geographic, although linguistic and cultural differences may have existed to varying degrees. (McKenna et al., p. 14)

Cahuilla territory lies within the geographic center of Southern California and the Cocopa-Maricopa Trail, a major prehistoric trade route, ran through it. Like other Native American groups in southern California, the Cahuilla were semi-nomadic peoples leaving their villages and utilizing temporary campsites to exploit seasonably available plant and animal resources. (McKenna et al., p. 14)

Cahuilla subsistence was based primarily on acorns, honey mesquite, screw beans, pinon nuts, and cactus fruit, supplemented by a variety of wild fruits and berries, tubers, roots, and greens. Hunting deer, rabbit, antelope, bighorn sheep, reptiles, small rodents, quail, doves, ducks by means of bows, throwing sticks, traps, and communal drives is documented. Artifacts common to the Cahuilla include coiled pottery (often incised and painted), baskets, manos, mutates, mortars, pestles, steatite arrow shaft straighteners, mesquite or willow bows and arrows, wooden throwing sticks, charms stones, bull-roarers, and small bifacially worked stone points. Marine shells, including *Olivella* sp. Beads, were used for money and are often associated with cremations (McKenna et al., p. 14).

5.5.1.3 Historic Period

The earliest known records of European contact with Southern California Native Americans date to the mid-1500s, representing the early explorations of the Spanish. These explorations resulted in the identification of populations from the ships but did not include direct contact. Personal contact was not made until the 1770s, when Father Garces traversed the Mojave Desert and entered coastal Southern California through the Cajon Pass.

In the 1770s, the Spanish padres, under the direction of Junipero Serra, began the process of establishing a series of missions throughout Alta California, as California was then known. The Project area is within the boundaries of lands historically held by the Mission San Gabriel de Archangel. The Mission continued to hold these large tracts until the Mexican government declared its independence from Spain and issued orders for the secularization of the missions (ca. 1824). By 1833-34, the majority of mission lands were taken from the Catholic Church and granted to individuals who had served as either Spanish or Mexican soldiers, settlers, financiers, etc. The Mexican government hoped to initiate a

pattern of settlement in Alta California by relocating populations from Mexican settlements to California settlements

The Mission San Gabriel maintained control of this area until secularization of the missions by the Mexican government in 1834. By ca. 1834-35, the mission lands were confiscated by the government and redistributed in the form of land grants and/or ranchos via gifts and/or private purchases. The Project area, located east of the confluence of the Santa Ana River and Mill Creek, fell outside the boundaries of any Spanish or Mexican Land Grant and, therefore, following the acquisition of California by the U.S. government, the area was surveyed and mapped as land available through the government for sale, trade, or homesteading (McKenna et al., p. 18-19).

As referenced in the *Phase I Cultural Resources Investigation* the Project site can be characterized by three periods of development: 1) early water transportation facilities; 2) early privately owned ranches; and 3) agri-business holdings. These three periods of development are summarized below.

Early Water Transportation Facilities

Early water transportation facilities reported to be within the Project area or actually identified within the Project site include the Santa Ana Highline Canal (Highline Aqueduct, later renamed the Bear Valley Highline), the Sunnyside Ditch, and the Redlands Canal. (McKenna et al., p. 42)

P36:006005 The Bear Valley Highline Aqueduct: The Bear Valley Highline Aqueduct (Santa Ana River Highline Canal; P36-006005; CA-SBR-6005H) was designed to provide Santa Ana River waters to Moreno Valley, Crafton, and the Greenspot area. The original canal was constructed between 1882-1883. After the original alignment was destroyed by flooding in ca. 1910, the Highline was rebuilt in its current location crossing Section 15 as shown on the USGS Yucaipa Quadrangle (please refer to **Figure 5.5-1 – USGS Map**). (McKenna et al., pp. 56-57, 69)

The 1910 canal was rebuilt with enclosed iron pipes and renamed the Bear Valley Highline. The Bear Valley Highline continued to provide water to the area until it was abandoned in 1956. Since 1956, once-visible portions of the canal/aqueduct have been destroyed by orchard developments and/or the removal of the orchards. Although the only identifiable portion of the Bear Valley Highline Aqueduct was located south of Newport Avenue and within the southwestern quarter of Section 15, sub-surface portions of this facility may still be present in the alignment shown on **Figure 5.5-1**. The existing visible elements of the Bear Valley Highline Aqueduct consist of a rock and mortar canal and a bridge crossing on the access road leading from Newport Avenue to Mill Creek. (McKenna et al., pp. 56 and 69)

The *Phase I Cultural Resources Investigation* concluded that the Bear Valley Highline Aqueduct is a significant cultural resource and would qualify for the National Register of Historic Places and the California Register of Historical Resources for its association with the early development of the water transportation systems that provided the necessary water to western San Bernardino and Riverside counties for the development of the highly successful citrus industry. This feature meets the requirements for historical association with the irrigation and citrus development and for the association with the individuals that were responsible for its development. (McKenna et al., pp. 70-71)

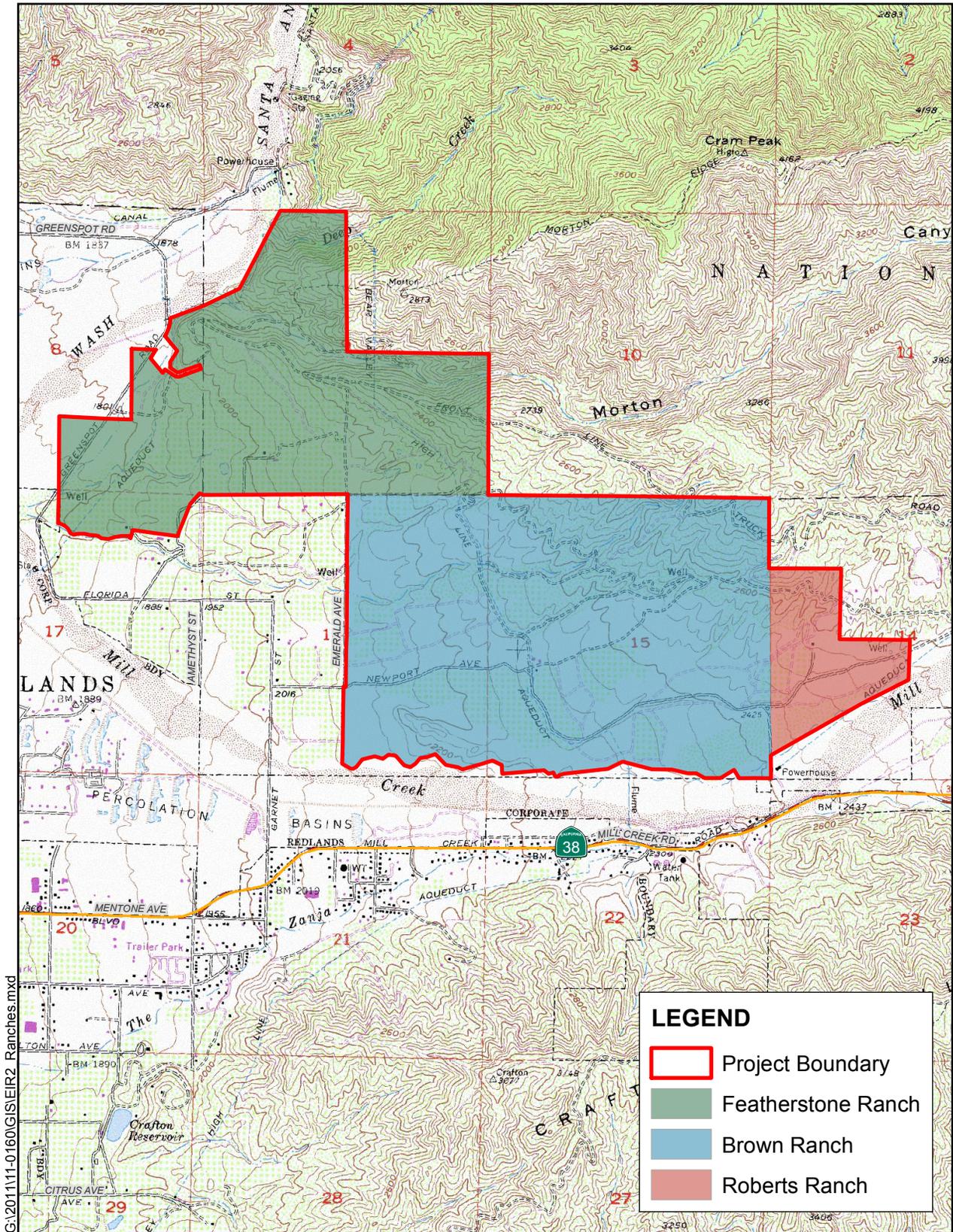
The visible segment(s) of the Bear Valley Highline Aqueduct identified within the Project area represent the last visible components of the system between the Santa Ana River and Mill Creek. Given the significance of the Bear Valley Highline Aqueduct to sustain the irrigation and citrus industry in both San Bernardino and Riverside counties, this resource would qualify as a California Historical Landmark and/or Point of Historical Interest. (McKenna et al., p. 91)

The Sunnyside Ditch: The Sunnyside Ditch is considered the predecessor the Redlands Canal and was designed to carry water from the Santa Ana River to areas on the south side of the River (east of the Redlands Canal). Also referred to as the South Fork Ditch, construction was initiated in 1874 and completed in 1878. When completed, the ditch was 3.5 feet wide at the base, 5 feet wide at the top, and lined with gravel and cobbles. Subsequent to the completion of the Redlands Canal, evidence of the Sunnyside Ditch was obliterated. (McKenna et al., p. 72)

At the time of the *Phase I Cultural Resources Investigation*, no physical evidence of the Sunnyside Ditch was identified within the Project area (McKenna et al., pp. 72). The *Phase 1 Cultural Resource Investigation* concluded that the Sunnyside Ditch would be considered a potentially significant resource, should evidence of its presence be confirmed.

P36-013549 The Redlands Canal: The Redlands Canal (Redlands Aqueduct, P36-013549) was constructed by the Bear Valley Land and Water Company in 1885 as a joint effort of the Bear Valley Land and Water Company and the Sunnyside Ditch/South Fork Ditch owners. This canal replaced the Sunnyside Ditch (also known as the Sunnyside Canal) and was initially known as the Bear Valley Canal. It was designed as an open masonry canal feeding the City of Redlands. The canal was 6.7 miles long and extended from the Santa Ana River powerhouse No. 3 to Redlands. The open canal was buried in 1927-1928. (McKenna et al., pp. 57 and 72)

At the time of the *Phase I Cultural Resources Investigation*, no surface evidence of the Redlands Canal was visible. However, the *Phase I Cultural Resources Investigation* determined that the Canal may be present in a buried context on the western portion of the Project site as shown on **Figure 5.5-1**. Therefore, there is a strong potential to identify elements of this resources in a buried context. Whether physical evidence is identified or not, the Redlands Canal (Redlands Aqueduct) played a major role in transporting water to the City of Redlands and the successful development of the citrus industry in and around Redlands. As in the case of the Highline Aqueduct, this resource can be associated within significant economic developments and successes as well as historical figures and companies that played major roles in the successful development of many of the communities in western San Bernardino and Riverside counties. As such, the *Phase I Cultural Resources Investigation* determined that, the Redlands Canal (Redlands Aqueduct) is a significant resource should evidence of this resource be identified at a later date (McKenna et al., pp. 72 and 92).



G:\201111-0160\GIS\IEIR2 Ranches.mxd

Sources: McKenna et al., 2011; USGS, Yucaipa Quadrangle.

Figure 5.5.2 – Early Ranches in the Project Area
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0 1,000 2,000 3,000 4,000 5,000 Feet



Early Privately Owned Ranches

Although numerous owners have been identified for the various properties within the Project area, three ranches stand out as dominating the area prior to ca. 1930. These ranches are identified as the Featherstone Ranch in Sections 8 and 9, the Roberts Ranch in Section 14, and the Brown Ranch in Sections 15 and 16 on the USGS Yucaipa Quadrangle (please refer to **Figure 5.5-2, above**). All three were consolidated into larger agri-business holdings subsequent to their relative sales. (McKenna et al., p. 74)

P36-005975 and P36-006000 The Featherstone Ranch: The Featherstone Ranch was established by William Featherstone as an approximately 300 acre ranch involving portions of Sections 8, 9, and 17 (see **Figure 5.5-1**). Field surveys that were conducted as part of the *Phase I Cultural Resources Investigation* identified the following resources within the boundaries of the Featherstone Ranch: two structural complexes (one in ruins and one with standing structures), numerous roadways, series of earthen and rock lined agricultural terraces, at least two well sites, three earthen reservoirs, various phases of irrigation system developments (pipelines and standpipe systems), and existing orchards. The orchards are primarily limited to the western half of Section 9. (McKenna et al., p. 75)

Research conducted as part of the *Phase I Cultural Resources Investigation* confirmed William Featherstone (and possibly his brother) were involved in citrus growing, but were known for growing cherries and peaches. Today, some of the previously planted orchards remain (to the west of Emerald Avenue), but all trees east of Emerald Avenue have been removed. In the areas devoid of trees, the terracing of the landscape was evident. While some elements within the ranch property may pre-date Featherstone (pre-1915), such as the residential complex in Section 8 (CA-SBR-5975H), and certainly many post-date Featherstone (e.g. the standpipe irrigation system), features that can be reasonably associated with William Featherstone include portions of the structural complex within the western half of Section 9, the rock and mortar terrace system in Section 9, and the early irrigation system (reservoirs, piping, wells, etc.), and roads. Surveying along the extension of Emerald Avenue (north of Villiers Road) yielded identification of two well sites – one east of the road and one west of the road. (McKenna et al., p. 75)

The *Phase I Cultural Resources Investigation* determined that the Featherstone ranch is not associated with any events or persons meeting the minimum requirements for recognition under federal or state requirements. The Featherstone ranch does not reflect any elements of architectural significance and the potential for archaeological deposits of any significance is relatively low. Likewise, it does not qualify for recognition as California Historical Landmark or Point of Historical Interest (McKenna et al., pp. 90-91).

P36-006003 and P36-006004 The Roberts Ranch: The Roberts Ranch was established prior to 1895, when William Roberts acquired lands in Section 14. With his neighbor to the east, J.B. Dennis, Roberts invested in infrastructure (e.g. irrigation) and is credited with the residential complex located within the central portion of his holding. Roberts maintained ownership of the property until 1907 (over 20 years), when the property was sold to the Mentone Heights Orange Company. This property was eventually consolidated with property to the west and known as the “Sunrise Ranch” owned by the Redlands Heights Orange Company and/or the East Highlands Orange Company.

The *Phase I Cultural Resources Investigation* noted that the property is associated with an early 20th century citrus ranch that became a part of a larger holding (Sunrise Ranch), but has since been destroyed by fire, and the orchards have since been removed. With the exception of foundations and irrigation features, no substantial features remain within the property (McKenna et al., p. 79).

In addition to the core area of the Roberts Ranch, P36-006003 (CA-SBR-6003H) was also recorded within the property boundaries. In this case, the site is identified as a well head with support facilities. However, since originally recorded, this site has been damaged by exposure to the elements, fire, and subsequent overgrowth. The *Phase I Cultural Resources Investigation* concluded that, short of the identification of previously unidentified and potentially significant elements within the property, this resource fails to meet the minimum criteria for consideration as a historical resource, as defined in CEQA/NEPA/ NHPA (McKenna et al., p. 82).

P36-006002 - The Brown Ranch: The Brown Ranch was established by Mary A. Brown in the 1880s, including acreage in Sections 8, 15, and 16. Mary A. Brown eventually owned all of Section 15 (640 acres), almost all of the eastern half of Section 16 (280 acres), and a portion of Section 8 (100 +/- acres; sold relatively early). Brown held onto the other properties (Sections 15 and 16) until ca. 1902. The historic Brown Ranch consisted of approximately 940 acres. (McKenna et al., pp. 55, 82-83)

The surveys conducted as a part of the *Phase I Cultural Resources Investigation* yielded scant evidence of the Brown Ranch. The *Phase I Cultural Resources Investigation* notes that the realignment of Newport Avenue significantly disturbed the core area of P36-006002. Virtually nothing remains today, with the exception of a loading chute. No evidence of residential foundations were identified and no evidence of construction debris. The *Phase I Cultural Resources Investigation* notes that the area was highly overgrown and appears to have been subjected to sheet wash and other modern disturbances over many years. However, evidence of buried foundations or other features related to the Brown Ranch may be present in this general area in a buried context. (McKenna et al., pp. 84-85)

Agri-Business Holdings

Following the sales of the Featherstone, Roberts, and Brown properties (along with some smaller holdings) to larger agricultural businesses, the majority of the Project area was modified by improvements that included the removal of non-citrus trees, expansion of the citrus groves, the replacement and/or expansion of the irrigation systems, the alteration and re-use of earlier ranch facilities, and the development of additional support facilities to manage the orchards. As noted, the majority of the Project site was a consolidation of acreage drawn from the Featherstone, Roberts, and Brown ranches. In general, the area was known in the post-1930s period as the "Sunrise Ranch" (P36-006001) (McKenna et al., p. 87).

P36-006001 – Sunrise Ranch: Sunrise Ranch involved acreage primarily within Sections 15 and 16 (Brown Ranch), but also included portions of Section 14 (Roberts Ranch) and Sections 8 and 9 (the majority of the Featherstone Ranch). During the active period of the Sunrise Ranch operations (ca. late 1920s through 1960s +), the residential complexes associated with both the Featherstone and Roberts ranches were occupied and used as support facilities. There is no evidence to suggest the Brown residential complex was still present (McKenna et al., p.84).

The surveys conducted as a part of the *Phase I Cultural Resources Investigation* found that all standing structures had been removed and no evidence of equipment or temporary features (e.g. stored water tanks) were present. The *Phase I Cultural Resources Investigation* found evidence of structural locations and some wooden debris from less substantial features, such as storage sheds, scattered in the central portion of the recorded site. In addition, some evidence of concrete footings and irrigation features were found. The *Phase I Cultural Resources Investigation* concluded that since the majority of this site has been destroyed, the Sunrise Ranch features are of no historical significance. (McKenna et al., pp. 87-89)

5.5.1.4 Cultural Resources Investigation and Known Historical Resources

A cultural resources survey and evaluation of the Project site was conducted and the results documented in the *Phase I Cultural Resources Investigation* prepared by McKenna et al. (Appendix E). This cultural resources survey included: a search of the Native American Heritage Commissions’ Sacred Land Files; contact with local Native American representatives; an archaeological resources search through the San Bernardino County Museum, Archaeological Information Center; historic background research; an overview of paleontological sensitivity; a systematic pedestrian survey over all accessible areas of the Project site with an emphasis on relocating previously recorded resources and identifying any additional resources; recordation of identified resources on the appropriate DPR-523 site forms; and documentation of fifty-two (52) resources of historic origin within a one mile radius.

Of the fifty-two (52) resources of historic origin eleven (11) resources were mapped as being within the Project site (McKenna et al., p. 49). As shown below in **Table 5.5-A - Identified Historic Resources Occurring on the Project Site**, of the 11 resources occurring within the Project site there are two prehistoric and nine historic period sites (resources). Of these nine historic sites, the location of seven could be determined (or ascertained).

Table 5.5-A – Identified Historic Resources Occurring on the Project Site

Primary No.	Site No.	Citation	Year	Description	Status
P36-005975	CA-SBR-5975H	Hampson et al.	1987	Structural Complex w/Refuse	Location Determined (Relocated)
P36-005984	CA-SBR-5984H	Hampson & Doyle	1987	Pump House and Refuse	Location not Determined-(Not Relocated)
P36-006000	CA-SBR-6000H P1064-22-H	Hampson et al. Elliott	1987 1986	Irrigation System w/Terraces - Featherstone Ranch	Location Determined (Relocated)
P36-006001	CA-SBR-6001H	Hampson et al. Elliott	1987 1986	Brown/Sunrise Ranch	Location Determined (Relocated)
P36-006002	CA-SBR-6002H	Hampson et al. Elliott	1986 1987	Ranch Complex w/Refuse - Brown/Sunrise Ranch	Location Determined (Relocated)

Primary No.	Site No.	Citation	Year	Description	Status
P36-006003	CA-SBR-6603H P1064-24H-26H	Hampson et al. Elliott	1987 1986	Pump Station w/Cisterns - Ranch Complex with 3 Loci	Location Determined (Relocated)
P36-006004	CA-SBR-6004H	Hampson et al.	1987	Residential Site w/Irrigation, etc.	Location Determined (Relocated)
P36-006005	CA-SBR-6005H	Goodman	1989	Highline Canal	Location Determined (Relocated)
P36-013549	PSBR-22H	Offermann & Schmid	2007	1884 Redlands Canal	Location not Determined-(Not Relocated)
P36-060207	IA-1604-4	Lerch	1985	Isolated Mano	Location Determined-(Not Relocated)
P36-060208	IA-1064-5	Lerch	1985	Obsidian Core	Location not Determined-(Not Relocated)

The sites listed in **Table 5.5-A** were evaluated for significance according to the criteria for eligibility for listing in the National Register of Historic Places, the California Register of Historical Resources (CRHR), and for consideration as unique archaeological resources as defined by CEQA (see Section 5.5.3 for eligibility criteria). Only sites identified as eligible for National Register of Historic Places or the California Register of Historical Resources are discussed in the impact analysis in Section 5.5.5 below.

5.5.1.5 Paleontological Setting

The *Phase I Cultural Resources Investigation* (Appendix E) concluded that the Project site consists of deposits that are known to have yielded fossil specimens in similar contexts and, therefore, found the Project site to have a relatively high potential to yield evidence of fossils (McKenna et al., p. vii). The *Phase I Cultural Resources Investigation* also concluded that “if fossils are present within the project area, they will be identified in a buried context and may include both large and small mammals, and possibly, invertebrates.” (McKenna et al., p. 65)

5.5.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to cultural resources may be considered potentially significant if the Project would:

- create a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
- disturb any human remains, including those interred outside of formal cemeteries.

5.5.3 Related Regulations

The treatment of cultural resources is governed by federal, state, and local laws and guidelines. There are specific criteria for determining whether prehistoric sites or objects are significant and thus protected by law. Federal and state significance criteria generally focus on the integrity and uniqueness of the resource, its relationship to similar resources, and its potential to contribute information important to scholarly research. Some resources that do not meet federal significance criteria may be considered significant by state criteria. The laws and regulations seek to mitigate project impacts on significant prehistoric and historical-period resources.

5.5.3.1 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 National Historic Preservation Act of 1966 (NHPA) 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. Determination of NRHP eligibility for cultural resources prior to making a finding of effect is made according to the following criteria of evaluation:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and:

1. that are associated with events that have made a significant contribution to the broad patterns of our history; or
2. that are associated with the lives of persons significant in our past; or
3. that embody the distinctive characteristics of a type, period, method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack distinction; or
4. that have yielded, or may be likely to yield, information important to prehistory or history [36 CFR 60.4].

If cultural resources do not meet the above criteria, they are not historic properties and are not further considered in the Section 106 process.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites which are on Federal lands and Indian lands.

5.5.3.2 State

The California Register of Historical Resources (Public Resource Code Section 5024.10 et seq.)

State law protects cultural resources by requiring evaluations of the significance of historical resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA guidelines. These criteria are similar to those used in federal law. The California Register of Historical Resources (CRHR) is maintained by the state Office of Historic Preservation. Properties listed, or formally designated eligible for listing, on the National Register of Historic Places (NRHP) are automatically listed on the CRHR, as are state historical landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

CRHR Criteria

For purposes of CEQA, a historical resource is any object, building, structure, site, area, place, record, or manuscript listed in or eligible for listing in the CRHR (PRC Section 21084.1). A resource is eligible for listing in the CRHR if it meets any of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- 2) Is associated with the lives of persons important in our past.
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- 4) Has yielded, or may be likely to yield, information important in prehistory or history.

The California Code of Regulations (CCR) further provides that cultural resources of local significance are CRHR-eligible (Title 14 CCR, Section 4852).

California Environmental Quality Act

CEQA requires the lead agency to determine whether the proposed development project will have a significant effect on the environment. According to CEQA Guidelines Section 15064.5(b), only those resources determined to be "historical resources," that is, eligible for listing in the CRHR, are considered subject to potential significant adverse impacts. CEQA recognizes that historical resources are part of the environment, and that a project "that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC Section 21084.1). The CEQA Guidelines state, "A project with an effect that may cause a substantial adverse change in significance of an historical resource is a project that may have a significant effect on the environment" (CEQA Guidelines Section 15064.5(b)). A "substantial adverse change" is defined as

“physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1)). The significance of a historical resource is materially impaired when a project affects “those physical characteristics of an historical resource that convey its historical significance” (CEQA Guidelines Section 15064.5(b)(2)(a)).

Sections 21083.2 and 21084.1 of CEQA deal with the definitions of unique and non-unique archaeological resources. Section 21083.2 directs the lead agency to determine whether the project may have a significant effect on unique archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. Section 21084.1 directs the lead agency to determine whether the project may have a significant effect on historical resources, irrespective of the fact that these historical resources may not be listed or determined to be eligible for listing in the California Register of Historic Resources, a local register of historical resources, or they are not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 of the Public Resources Code.

Unique Archaeological Resources Criteria

CEQA requires the lead agency to consider whether the Project will have a significant effect on unique archaeological resources and to avoid unique archaeological resources when feasible or mitigate any effects to less-than-significant levels per California Public Resources Code [PRC] 21083.2. The CEQA statutes (PRC § 21083.2 (g)) define a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- 2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Paleontological Resources

According to Appendix G of the *CEQA Guidelines*, a project could have a significant effect if it would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Human Remains

According to Section 15064.5 of the *CEQA Guidelines*, all human remains are a significant resource. Section 15064.5 of the *CEQA Guidelines* also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are discussed within Public Resources Code Section 5097.

California Public Resources Code 5097.98

California Senate Bill 297 (1982) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission to resolve disputes regarding the disposition of such remains. It has been incorporated into Section 15064.5(e) of the *CEQA Guidelines*.

California Health and Safety Code Section 7052 and 7050.5

Section 7052 of the California Health and Safety Code states that disturbance of Indian cemeteries is a felony. There are no known Indian cemetery sites within the Project area. Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are found to be Native American, the coroner must contact the California Native American Heritage Commission.

Senate Bill 18, California Tribal Consultation Guidelines

The State of California Governor's Office of Planning and Research developed these guidelines in order to provide guidance to cities and counties on the process for consulting with Native American Indian tribes during the adoption or amendment of local general plans or specific plans, such as this document (defined in Government Code §65450 *et seq.*). Senate Bill (SB) 18 requires local agencies to consult with tribes prior to making certain planning decisions and to provide notice to tribes at certain key points in the planning process, thereby providing tribes an opportunity to participate in local land use decisions at an early planning stage.

In accordance with SB 18, the City initiated consultation with six Native American Tribes and Interested parties provided by NAHC. The Soboba Band of Luiseno Indians responded to the City's request indicating they had no specific concerns and deferred to the San Manuel Band of Serrano Mission Indians, but requests notification of any inadvertent discoveries during the course of the Project.

5.5.3.3 Local

City of Highland Municipal Code

The City's Historic and Cultural Preservation Ordinances (Ord.132 and 270) are codified in Title 16, Chapter 16.32, of the Highland Municipal Code. The ordinances established the City's requirements for historic and cultural preservation, and created the Historic and Cultural Preservation Board. The Board maintains a local register of designated cultural resources consistent with the National Register and reviews projects that may result in changes to the character or use of the designated resources. The Board also issues certificates of appropriateness for all permits for alteration, restoration, rehabilitation, remodeling, additions, change of use, demolition or relocation for designated cultural resources and properties located in historic district.

City of Highland General Plan

Goal 5.8 of the City of Highland General Plan is to:

Protect, document and minimize disruption of sites that have archaeological significance.

All development shall be in compliance with the archaeological resources preservation policies of the City of Highland General Plan. The preservation policies for development projects are defined as follows within the Conservation and Open Space Element:

Policy 5.8.1: Avoid significant impacts in all new developments within areas determined to be archaeologically sensitive through the following measures:

- Conduct an archaeological records search with the Archaeological Information Center in order to identify potential on-site sensitivities;
- In cooperation with a qualified archaeologist, develop mitigation measures for projects found to be located in or near sensitive areas or sites; and
- Require that environmental review be conducted for all applications within the area designated as archaeologically sensitive, including but not limited to grading, earth moving and stockpiling, and building and demolition permits.

Policy 5.8.2: Include the following statement as a condition of approval on all development projects:

“If cultural resources are discovered during project construction, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the project sponsor to investigate the find, and to make recommendations on its disposition. If human remains are encountered during construction, all work shall cease and the San Bernardino County Coroner’s Office shall be contacted pursuant to Health and Safety Code provisions.”

Policy 5.8.3: Coordinate with the San Manuel Band of Mission Indians when proposals for development projects are filed within the Areas of Sensitivity for Archaeological Resources through the following actions:

- Notify the San Manuel Band of Mission Indians via notification mailings about proposed projects in archaeologically sensitive areas; and
- Invite comments and suggestions to be forwarded to City staff and appropriate decision makers to aid the preservation and development review processes.

The Project has complied with Policy 5.8.1 through preparation of the *Phase I Cultural Resources Investigation* included as Appendix E to this DEIR. Mitigation measure **MM CR 5** (see Section 5.5.6 below) is consistent with Policy 5.8.2, and Policy 5.8.3 was met through the SB 18 consultation process.

5.5.4 Project Design Features

The Harmony Specific Plan contains a policy to “preserve features of historical and cultural significance.” (HSP, p. 2-5).

In addition, the Harmony Specific Plan includes approximately 50% of the entire community as being planned for parks, recreation, and open spaces (natural and manufactured). Of the total Project area of 1,657 acres, approximately 535 acres will remain in natural open space. Cultural and historical features in the natural open space will not be disturbed.

5.5.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project create a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?*

With regards to Native American resources, only two isolated artifacts (only one collected) were identified in 1987 as being of Native American origin. However, no evidence of prehistoric sites or isolates was uncovered by McKenna, et al during field surveys. Extensive alteration of the Project site during the historic agricultural periods and subsequent disturbances for borrow pits, the removal of orchards, and general use of the area has significantly diminished the likelihood that such resources will be identified. However, there is always a potential for buried resources. (McKenna, et al., p. 66, 92) Potential impacts to Native American resources will be reduced to less than significant with the implementation of mitigation measure **MM CR 1**.

The *Phase I Cultural Resources Investigation* (Appendix E) identifies the Project site as being privately owned since the 1880s and corporately owned since the 1930s. During these years, the properties were considered agricultural and associated with at least three relatively large “ranches” devoted to citrus and fruit growing. The field surveys that were conducted for the *Phase I Cultural Resources Investigation* did not identify any standing structures occurring on the Project site, but did identify foundations, roads, and irrigation systems.

With respect to known historical resources, the *Phase I Cultural Resources Investigation* documented the presence of fifty-two (52) resources of historic origin occurring within a one mile radius of the Project site. The majority of resources, identified as historic, consist of ranch complexes and/or resources associated with the many water projects along the Santa Ana River and/or Mill Creek. Of the fifty-two (52) resources of historic origin eleven (11) resources were mapped as being within the Project site as summarized in **Table 5.5-A** above.

Table 5.5-B – Summary of Resource Evaluations below presents a summary of the resource evaluations by site, as the sites are defined by McKenna et al. Based on the findings in the *Phase I Cultural Resources Investigation*, the Featherstone, Roberts, Brown ranches are not associated with any events or persons meeting the minimum requirements for recognition under federal or state requirements. The ranches do not reflect any elements of architectural significance and the potential for archaeological deposits of any significance is relatively low. Likewise, these resources do not qualify for recognition as California Historical Landmarks or Points of Historical Interest. (McKenna, et al., p. 90)

Table 5.5-B Summary of Resource Evaluations

Site No. (Description)	Federal				State											Conclusion
	National Recognition				CA. Register				CA. Landmark			Point of Interest				
	A	B	C	D	1	2	3	4	a	b	c	a	b	c		
P36-005975 (Structural Complex and Refuse Scatter)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Insignificant
P36-005984 (Pump House and Refuse Scatter)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not relocated ^a
P36-006000 (Featherstone Ranch and Irrigation System)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Insignificant
P36-006001 (portion of Brown/Sunrise Ranch)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Insignificant
P36-006002 (portion of Brown/Sunrise Ranch)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Insignificant
P36-006004 (Residential Site with Irrigation System)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Insignificant
P36-006005 (Santa Ana River Highline Canal/Aqueduct)	X	X	-	X	X	X	-	X	X	X	-	X	X	-	-	Significant
P36-013549 (1884 Redlands Canal)	X	X	-	X	X	X	-	X	X	X	-	X	X	-	-	Significant

Source: Table 5- Summary of Resource Evaluations, McKenna et al., p. 91

- a) The resource is considered “not relocated” because no evidence of this resource was found during the site investigation.

National Recognition / CA Register Criteria for Designation

- A / 1 Associated with significant historical events
- B / 2 Associated with the lives of significant historical persons
- C / 3 Reflects distinctive architectural design, methods of construction, or work of an architect of merit
- D / 4 Has yielded or may yield, information important to prehistory or history (that can be obtained through archaeological research)

CA Landmark and CA Point of Interest Criteria for Designation

- a. The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California)
- b. Associated with an individual or group having a profound influence on the history of California
- c. A prototype of, or an outstanding example of a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder

The *Phase I Cultural Resources Investigation* concluded the Bear Valley Highline Aqueduct is a significant cultural resource and would qualify for the National Register of Historic Places and the California Register of Historical Resources for its association with the early development of the water transportation systems that provided the necessary water to western San Bernardino and Riverside counties for the development of the highly successful citrus industry. This feature meets the requirements for historical association with the irrigation and citrus development and for the association with the individuals that were responsible for its development, such as Judson and Brown and the various companies founded to support the system. (McKenna et al., p. 91)

The segment(s) of the Bear Valley Highline Aqueduct identified within the Project area represent the last visible components of the system between the Santa Ana River and Mill Creek. Given the significance of this feature to sustain the irrigation and citrus industry in both San Bernardino and Riverside counties, this resource would also qualify as a California Historical Landmark and/or Point of Historical Interest. (McKenna, et al., p. 91)

Physical evidence of the Redlands Canal has not been identified, mainly because it is reported to have been buried. Therefore, there is a strong potential to identify elements of this resource in a buried context. Whether physical evidence is identified or not, the Redlands Canal played a major role in transporting water to the City of Redlands and the successful development of the citrus industry in and around Redlands. Further, this resource can be associated within significant economic developments and successes as well as historical figures and companies that played major roles in the successful development of many of the communities in western San Bernardino and Riverside counties. Therefore, McKenna et al., has determined that the Redlands Canal is a significant resource and, should evidence of this resource be identified at a later date, it should be treated as a significant resource and adequately addressed through recordation, additional evaluation, and photo-documentation. (McKenna et al., p. 92)

The *Phase I Cultural Resources Investigation* concluded the Sunnyside Ditch no longer exists because no evidence of it was found during the surveys for the Project and as early as 1951 it has been reported that no evidence of this ditch remained. Nonetheless, the Sunnyside Ditch would be considered a potentially significant resource, should evidence of its presence be confirmed due to its association with significant economic developments, historical figures, and companies that played a role in the development of western San Bernardino and Riverside counties. If found, these resource should also be recorded, evaluated, and photo-documented in accordance with standard guidelines and practices. Additional recommendations or mitigation measures would be developed as a result of the evaluation and assessment of impacts based on any proposed future project. (McKenna et al., p. 92)

Additionally, infrastructure or other public works improvements could result in damage to or demolition of other cultural resources. Although the City has programs and policies to protect and minimize adverse impacts to historical structures and features, the potential remains for significant impacts to these resources to occur as a result of development.

For the reasons stated above implementation of the Project will result in potentially significant impacts to historic resources.

In order to reduce potential impacts to any unknown historical resources that may be found during development to a less than significant level, mitigation measures **MM CR 1**, which requires archaeological monitoring and includes provisions to stop construction, if necessary, to document and evaluate any discovered resource will be implemented. Potential impacts to the Bear Valley Highline Aqueduct and the Redlands Canal (Redlands Aqueduct) will be reduced to less than significant through the documentation of these resources as required by mitigation measures **MM CR 2** and **MM CR-3**.

With adherence to these mitigation measures, the Project's potential to cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5 of the State *CEQA Guidelines*, is considered **less than significant with mitigation incorporated**.

Threshold: *Would the proposed Project cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?*

The *Phase I Cultural Resources Investigation* (Appendix E) concluded that areas within the overall Project area are considered sensitive for the presence of historic archaeological resources. These areas include the mapped alignments for both the Redlands Canal and the Sunnyside Ditch in Section 8 (east of Greenspot Road); the residential complexes identified in Sections 8 (Featherstone) and 14 (Roberts); and the area south of Newport Avenue in the southwestern quarter of Section 15, where the Brown Ranch residential complex may be present (McKenna et al p. 92-93)

Project implementation will entail the demolition and replacement of portions of the Redlands Aqueduct and Bear Valley Highline Aqueduct and may also affect other unknown subsurface cultural resources. However, with adherence to mitigation measures **MM CR 1**, **MM CR 2**, and **MM CR 3**, the Project's potential to cause a substantial adverse change in the significance of an archaeological resource, as defined in Section 15064.5 of the State *CEQA Guidelines*, will be **less than significant with mitigation incorporated**.

Threshold: *Would the proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

The *Phase I Cultural Resources Investigation* (Appendix E) concluded that the Project site consists of deposits that are known to have yielded fossil specimens in similar contexts and, therefore, found the Project site to have a relatively high potential to yield evidence of fossils (McKenna et al., p. vii).

Given the relative sensitivity for the Project site to yield significant fossil specimens, impacts relating to the destruction of a unique Paleontological resource would be potentially significant without the incorporation of mitigation measures. However, in the event that construction/development activities inadvertently uncover buried paleontological resources, mitigation measure **MM CR 4**, which requires preparation and implementation of a Paleontological Resources Impact Mitigation Plan (PRIMP), will reduce the Project's potential to directly or indirectly destroy a unique paleontological resource or site to **less than significant with mitigation incorporated**.

Threshold: *Would the proposed Project disturb any human remains, including those interred outside of formal cemeteries?*

Surveys, investigations, and studies conducted on the Project site and the Project area have not identified prehistoric (or historic) human remains. The Project site is in a region with a vast Native American history. However, the overall Project area has been subjected to significant human activity including borrow pits, grading, terracing, disking, tree planting and removal, etc. To date no human remains have been discovered. The results of a search of the Native American Heritage Commission's Sacred Land Files failed to identify any sacred or religious Native American resources within the project area. (McKenna et al., Appendix D) In addition, the Project site is not located on a known formal or informal cemetery.

However, in the event that unknown human remains are uncovered during construction activities, Sections 7052 and 7050.5 of the California Health and Safety Code require the San Bernardino County Coroner's Office to be contacted within 24 hours and all work to be halted until a clearance is given by that office and any other involved agencies. If human remains are discovered, the County shall comply with the requirements of Public Resources Code Section 5097.98, as amended. With adherence to existing laws and codes and implementation of mitigation measure **MM CR 5**, potential impacts with respect to disturbing human remains will **be less than significant with mitigation incorporated**.

5.5.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts upon cultural resources or to reduce impacts to below the level of significance.

MM CR 1: To reduce impacts to historic and archaeological resources (as defined by State *CEQA Guidelines*, Section 15064.5), prior to any ground disturbing activities within the Project site, a pre-grade meeting with a qualified historic archaeologist shall be held. The historic archaeologist will explain the likelihood for encountering historic and/or unique archaeological resources, what resources may be discovered, and the methods that will be employed if anything is discovered. A qualified historic archaeological monitor shall be present full-time during all initial ground disturbing activities within the sensitive areas identified in the *Phase I Cultural Resources Investigation*. The remainder of the Project area shall be monitored on a part-time basis as determined by the archaeological monitor and scheduled once a proposed Project is defined. The archaeological monitor shall be empowered to halt any activities impacting potentially significant resources in the vicinity of the resource and work with the Project proponent and the City of Highland in addressing these resources as follows:

1. Historic resources shall be documented. Documentation shall consist of: photographs of the resource; preparation of a DPR-523 form (or forms); and filing of the DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist.

2. Unique archaeological resources, as defined by Public Resources Code, Section 21083.2(g), shall be mitigated as set forth in Public Resources Code, Section 21083.2(b). Mitigation may take the form of, in no order of preference: avoidance of the resource, capping or covering the site with a layer of soil prior to any building on the site, testing, or excavation. Excavation shall be limited to those portions of the unique archaeological resource that would be damaged by the Project. A report documenting the results of the testing or excavation shall be prepared and filed with the City of Highland and the San Bernardino County Museum.
3. Nonunique archaeological resources shall be recorded and filed with the City of Highland. No further consideration of nonunique archaeological resources is required per Public Resources Code, Section 21083.2(h).

The monitoring program shall be supplemented with daily field notes and a photographic record. The extent, duration, and number of monitors would be dependent upon the proposed Project development schedule(s).

In the event evidence of prehistoric and/or historic period Native American cultural resources is identified at any time during Project construction, a Native American monitor of Serrano or Gabrieliño descent shall be incorporated into the Project's monitoring program.

MM CR 2: To mitigate impacts to the Bear Valley Highline Aqueduct:

1. A qualified historic archaeological monitor (Monitor) shall be present full-time during all initial ground disturbing activities or soils testing that entails excavation or boring in proximity to the alignment of the Bear Valley Highline Aqueduct as shown on **Figure 5.5-1 – USGS Map** of the DEIR. If evidence of any portion of the Bear Valley Highline Aqueduct is found, the Monitor shall halt all ground-disturbing activities the area of this resource and the resource shall be documented. Documentation shall consist of: photographs of the resource; preparation of updated DPR-523 form(s); and filing of DPR-523 form (or forms) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist.
2. Prior to any earthmoving, excavation, or boring, along the identified portion of the Bear Valley Highline Aqueduct in Section 15 this resource shall be documented. Documentation shall consist of: photographs of the resource; preparation of scaled drawings of the bridge crossing on the access road leading from Newport Avenue to Mill Creek, the undercrossing at the bridge, and at periodic locations along the exposed aqueduct; preparation of updated DPR-523 form(s); and filing of the updated DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center.

MM CR 3: To mitigate impacts to the Redlands Canal (Redlands Aqueduct), a qualified historic archaeological monitor (Monitor) shall be present full-time during all initial ground disturbing activities or soils testing that entails excavation or boring in proximity to the Redlands Canal (Redlands Aqueduct) as shown on **Figure 5.5-1 – USGS Map** of the DEIR. If evidence of any portion of this resource is found, the Monitor shall halt all ground-disturbing activities in the area of this resource and the resource shall

be documented. Documentation shall consist of: photographs of the resource; preparation of a DPR-523 form (or forms); and filing of the DPR-523 form(s) with the City of Highland and the San Bernardino County Museum, Archaeological Information Center unless another form of documentation is deemed to be sufficient by a qualified historic archaeologist.

MM CR 4: To reduce impacts to potential paleontological resources, prior to any earthmoving activities within the Project area, a Paleontological Resources Impact Mitigation Plan (PRIMP) shall be prepared by a qualified paleontologist and approved by the City of Highland. Once the PRIMP is approved by the City of Highland, earthmoving and construction activities may commence under the provision of the PRIMP. The PRIMP shall include the following:

1. Pre-grade meeting with a qualified paleontologist. The paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods that will be employed if anything is discovered.
2. A qualified vertebrate paleontological monitor shall be present during earthmoving activities identified in the PRIMP. The monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor shall be empowered to temporarily divert construction equipment away from the immediate area of the discovery.
3. If the qualified paleontologist is not present when fossil remains are uncovered by earthmoving activities, these activities shall be stopped and a qualified paleontologist shall be called to the site immediately to evaluate the significance of the fossil remains.
4. It is recommended that native sediments occasionally be spot-screened through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present.
5. If microfossils are encountered, additional sediment samples as determined by the paleontological monitor shall be collected and processed to recover additional fossils.
6. If the qualified paleontologist determines that insufficient fossil remains have been found after fifty percent of earth moving activities have been completed, monitoring can be reduced or discontinued.
7. Any recovered specimens shall be prepared to the point of identification and permanent preservation, which may include the picking of any washed mass samples to recover small invertebrate and vertebrate fossils, if present, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and the hardeners/stabilizers to fragile specimens.
8. Specimens shall be identified to the lowest taxonomic level possible and curated at an institutional repository approved by the City of Highland and the County of San Bernardino.
9. Fill dirt shall be free of cultural resources. Fill dirt from off-site resources shall be certified by the provider as being free of cultural or paleontological resources.
10. A report shall be prepared that details the methods and results of the monitoring program, even if the results are negative. If applicable, this shall include an appended itemized inventory of

identified specimens. This report shall be submitted by the project paleontologist to the City of Highland, prior to the issuance of the final grading inspection for all grading permits in areas where grading activities reached a depth of 4-feet or greater.

MM CR 5: To mitigate impacts to unknown human remains, if human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to Public Resource Code Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the San Bernardino County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within the period specified by law. Subsequently, the Native American Heritage Commission shall identify the "Most Likely Descendant." The Most Likely Descendant shall then make recommendations and engage in consultation with the County and the property owner concerning the treatment of the remains as provided in Public Resources Code Section 5097.98. Human remains from other ethnic/cultural groups with recognized historical associations to the Project area shall also be subject to consultation between appropriate representatives from that group and City Planning Director.

5.5.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The proposed mitigation measures will ensure that any unknown buried historical, cultural, archaeological or paleontological resources or human remains that are discovered during development of the proposed Project are protected, evaluated and recovered as determined by the appropriate qualified expert. With the above mitigation measures implemented, impacts to unknown potentially significant cultural resources will be reduced to a **less than significant** level.

5.5.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Section 7.1.7 of the DEIR contains further information regarding cumulative effects.

Cultural resources impacts are site-specific with respect to any given resource. Cumulatively, then, impacts that may be considered cumulative simply relate to the loss of cultural resources in general over time throughout the region. As discussed previously, with implementation of mitigation measures **MM CR 1**, **MM CR 2**, and **MM CR-3**, potential direct adverse impacts to historic and archaeological resources will be mitigated to below a level of significance. Direct impacts to the Bear Valley Highline Aqueduct and the Redlands Canal (Redlands Aqueduct) will be less than significant through documentation of these resources as required by **MM CR 2** and **MM CR 3**.

As with archaeological and historic resources, paleontological resources may be considered cumulative simply as they relate to the loss of resources in general over time throughout the region. No fossils have been found or recorded from the project site. However, the Project area consists of deposits that are known to have yielded fossil specimens. Therefore, the potential to find fossils within portions of the Project site is high. Impacts related to destroying unique paleontological resources or sites are

significant. By implementing **MM CR 4** potential impacts to paleontological resources will be reduced to a less than significant level.

With adherence to and implementation of the above-listed General Plan policies, mitigation measures **MM CR 1** through **MM CR 5**, as well as adherence to standard federal, state, and City regulations, the impacts to historical resources, archaeological resources, and paleontological resources will be **less than significant**.

5.5.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

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|----------------|--|
| GP | City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed September 8, 2012 and May 2013.) |
| GP EIR | City of Highland, <i>General Plan Update Draft EIR</i> , September 2005. (Available at the City of Highland.) |
| HSP | City of Highland, <i>Harmony Draft Specific Plan</i> , March 2014. (Available at the City of Highland.) |
| McKenna et al. | McKENNA et al, <i>A Phase 1 Cultural Resources Investigation and Preliminary Assessment of Impacts on Cultural Resources Identified Within the Orange County Flood Control Property in the Highland Mentone Area of San Bernardino County California</i> , October 31, 2011. (Appendix E). |

5.6 Geology and Soils

The following discussion is related to the potential for geological and seismic hazards to occur in or around the Harmony Specific Plan area. Issues of concern include rupture of a known earthquake fault; strong seismic ground shaking; seismic related ground failure, including liquefaction; landslides; soil erosion; and, suitability of soils for development. Potential impacts related to expansive soils and unstable soils for septic tanks are also analyzed.

The following discussion of potential impacts related to geology and soils is based on the *Revised Preliminary Geotechnical Investigation Report* prepared by Converse Consultants (Converse (a)) on November 21, 2011 and the *Revised Fault Investigation Report* prepared by Converse Consultants (Converse (b)) on November 21, 2011. Each report is presented in its entirety in Appendix F.1 and Appendix F.2 of this DEIR.

5.6.1 Setting

The Project site is located at the foothills of the San Bernardino National Forest east of the Santa Ana River and north of Mill Creek. The Project site can be characterized as mostly gently sloping and rolling terrain in the south and west, with moderately to steeply sloping terrain in the north and northeast. The elevation of the Project site varies from approximately 1,800 feet above sea level along the western boundary to approximately 2,700 feet above sea level at the foothills on the northeast side of the property, as reflected in **Figure 3-3 - Topography Map**. The northwestern extent of the Project site extends into the south flank of the San Bernardino Mountains. At the toe of the mountains is a steep, west-trending drainage known as Morton Canyon. The canyon is bounded to the south by a prominent west trending, steep-sided ridge known as Morton Ridge.

The site slopes more gently to the south from the base of the ridge to the bank of Mill Creek to the southern limits of the site. The potential development area and the limits of this investigation are within this portion of the site. Approximately half of the site is located within the State of California-designated San Andreas Earthquake Fault Zone (an Alquist-Priolo Zone), as shown in **Figure 5.6-1 – Geologic Hazards**.

A large area in the central and southeastern portion of the site was used as an impervious material borrow site for construction of the nearby Seven Oaks Dam during the 1990s (see **Figure 3-1 – Existing Setting**). Earth materials were excavated from the borrow area and removed from the site. Following completion of the dam in 1999, portions of the Project site were extensively recontoured. The *Revised Preliminary Geotechnical Investigation Report* notes that, the surficial disturbance during site restoration may have extended well beyond the planned borrow area (Converse (a), p. 2).

Currently, the Project site is vacant and consists of former and remnant orchards and disturbed areas previously used as a borrow site to build the Seven Oaks Dam.

5.6.1.1 Site Soils

Based on the *Revised Preliminary Geotechnical Investigation Report*, the primary geologic unit encountered and mapped on the Project site is older alluvial soils to the maximum explored depth of

50.9 feet below ground surface (bgs). The older alluvial deposits predominantly consisted of medium dense to very dense sand and silty sand with occasional layers of clayey sand. Gravel ranging from 0.5 to 2.5 inches in size was observed in several borings. Cobbles and boulders were also suspected at shallow depths in some borings. Cobbles and boulders are present located in the older alluvium throughout the Project site. (Converse (a), p. 4)

Several major drainage channels and numerous smaller tributaries are present within the Project site. At the time of geotechnical investigation, drilling or excavation within the channels was not conducted due to the potential for disturbance of sensitive habitats or possible jurisdictional streams. Channels are anticipated to contain deposits of young, unconsolidated alluvium, consisting of clay, silt, sand, and gravel. The thickness of the young alluvial deposits may range from several feet in small channels up to 10 feet or more in major channels (Converse (a), p. 4).

5.6.1.2 Groundwater

Overall, the Project site's southern perimeter is adjacent to Mill Creek and the northwestern boundary is adjacent to the Santa Ana River; both of these watercourses contain perennial flows that fluctuate with the seasonal weather and moisture patterns. Hence, the groundwater levels in the portions adjacent to the watercourses also fluctuate dependent on the infiltration from the watercourses. (Converse (a), p. 4)

Groundwater was not encountered during any of the exploratory borings drilled to a maximum depth of 50.9 feet. However, during a fault study conducted by Converse Consulting (Appendix F.2 of the DEIR), groundwater seepage and water saturated soils were observed in fault trenches excavated near the eastern and upstream end of the drainage channel. This seepage occurred at depths of 5 and 15 feet below ground surface which appeared to be undocumented fill used to level the upper portion of the stream channel during historical orchard planting. Active irrigation pipes were present in the in-filled channel area and at least one was leaking. Therefore, it is likely that the saturated subsurface condition may be related to leaking irrigation water, rather than a natural spring or standing groundwater. (Converse (a), p. 5)

No flowing springs were observed on the Project site. However, several wells are located on the Project site. Well No. 001S002W14L001S is located near Mill Creek with depth to groundwater measured at 101.7 feet bgs in 1995 to 922 feet bgs in 2004. Well No. 001S002W09P001S is located in a central portion of the Project site with depth to groundwater measured at 82.7 feet bgs in 1987 to 160.1 feet bgs in 1991. (Converse (a), p. 5)

Based on field observations and historical record, depth to groundwater is anticipated to be significantly deeper than 50 feet bgs. Localized perched groundwater and seepage may occur seasonally, particularly in areas where historical streams have been filled in (Converse (a), p. 5).

5.6.1.3 Faulting and Seismicity

The Project site is situated in a seismically active region. As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with nearby and more distant faults may occur at the Project site. During the life of the Project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the Project site. (Converse (a), p. 10)

The northern portion of the Project site is located within the State of California-designated San Andreas Earthquake Fault Zone (an Alquist-Priolo Zone) and is crossed by several strands of the active San Andreas fault (Converse (a), pp. iv, 14) as shown on **Figure 5.6-1 - Geologic Hazards**.

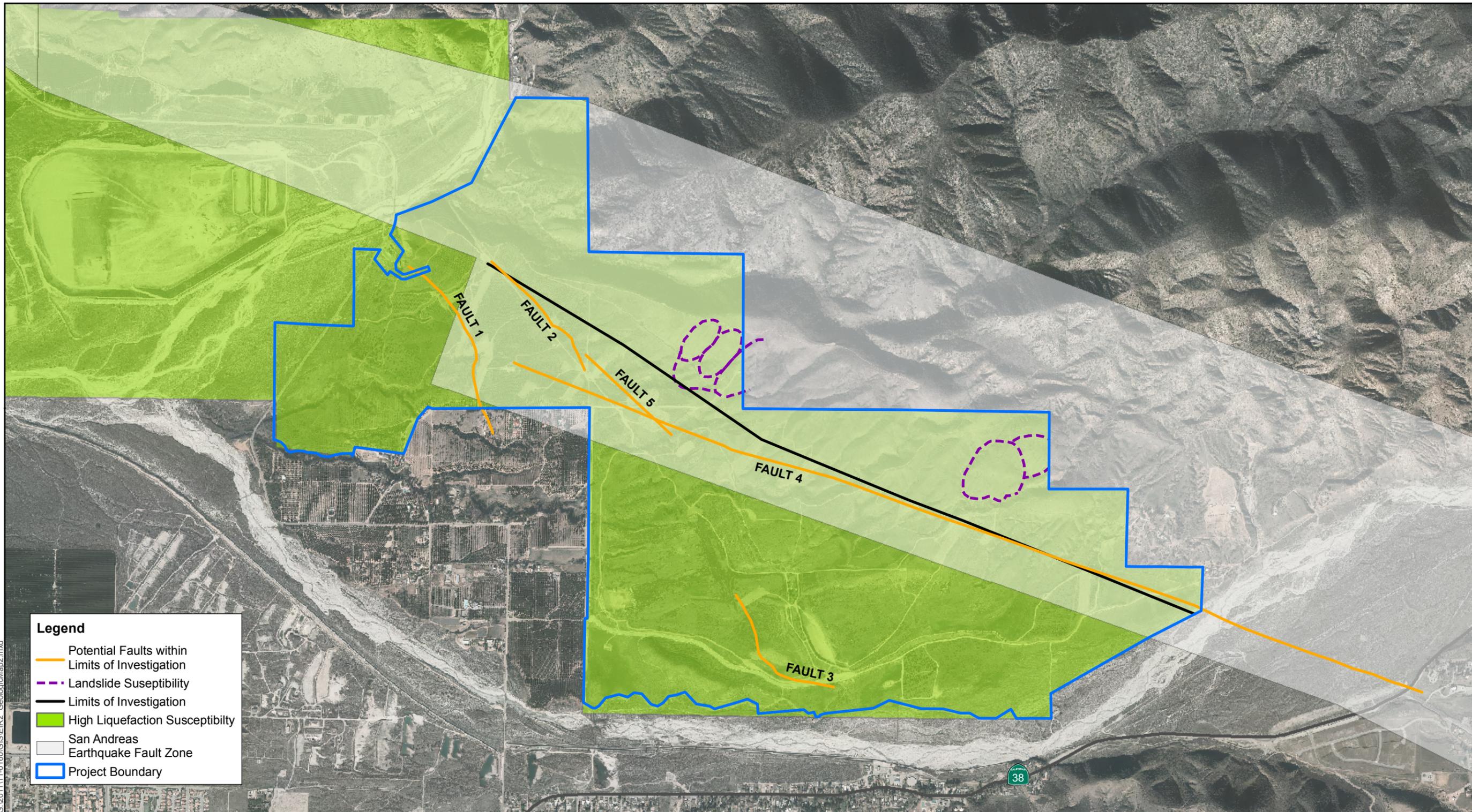
There are 34 active¹ and potentially active faults within 100 kilometers (approximately 31 miles) of the Project site. The closest fault is the San Andreas-Southern Fault located approximately 1.4 kilometers (0.9 miles) from the Project site. This fault is capable of generating an earthquake maximum moment magnitude of 7.4. The next closest fault is the San Jacinto-San Jacinto Valley Fault which is approximately 15.1 kilometers (9.8 miles) from the Project site. (Converse(a), p. 11)-**Table 5.6-A – Seismic Characteristics of Nearby Active Faults** (which is located on the page following the Figures 5.6-1 and 5.6-2) identifies the 34 active and potentially active faults within 100 kilometers of the Project site.

As shown on **Figure 5.6-2 - Fault Location Map**, there are four previously mapped potential faults occurring on the Project site and a fifth fault was subsequently identified during the field investigation (Converse (b), p. 19). These known and inferred faults are designated as Faults 1 through 5 on **Figure 5.6-1** and **Figure 5.6-2**.

To evaluate Faults 1 through 5, 20 fault trenches, identified as FT-1 through FT-20, were excavated up to 15-foot deep. Several trenches were divided into several segments due to surface or underground utilities, resulting in a total of 26 separate excavations totaling approximately 9,949 lineal feet (Converse (b), p. A-1), hereinafter referred to as the “area of investigation”. The area of investigation and the locations of the fault trenches are shown on **Figure 5.6-2**.

The findings of the *Revised Fault Investigation Report* are discussed in detail in Section 5.6.3. However, the *Revised Fault Investigation Report* found that all known or inferred faults within the potential development area of the Project site (Faults 1 through 5) are pre Holocene in age and therefore “not active” according to the present State of California criteria. (Converse (b), p. 20)

¹ The State of California Department of Conservation defines an active fault as one which has experienced movement during Holocene time.



G:\2011\11-0160\GIS\SEIR2_GeologicMap2.mxd

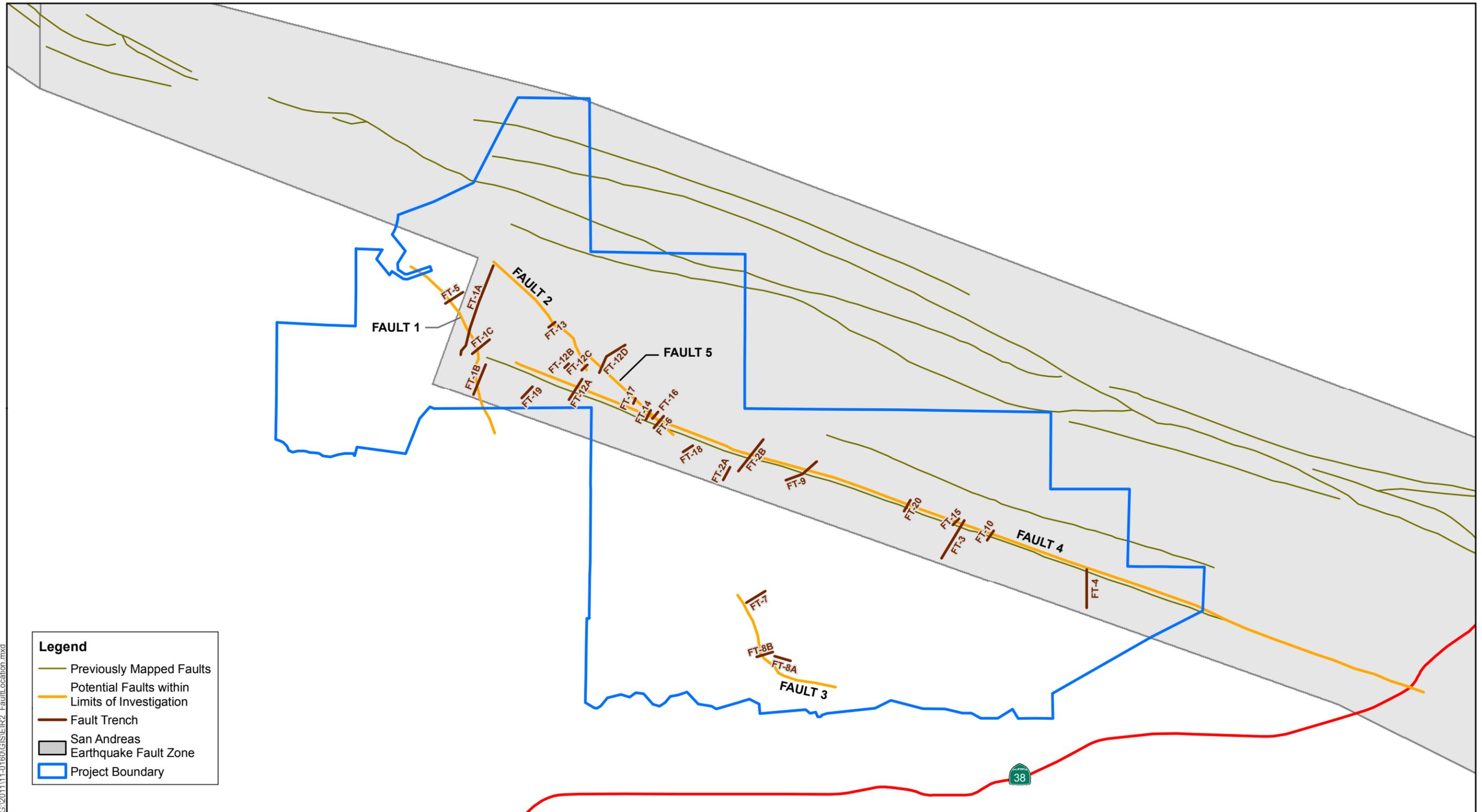
- Legend**
- Potential Faults within Limits of Investigation
 - - - Landslide Suseptibility
 - Limits of Investigation
 - High Liquefaction Susceptibility
 - San Andreas Earthquake Fault Zone
 - Project Boundary

Sources: FEMA DFIRM 2012;
 San Bernardino County ISD, 2012;
 Converse Consultants, Revised Preliminary Geotechnical Investigation Report, Geologic Map, November 2011.



0 1,000 2,000 3,000 Feet

Figure 5.6-1 – Geologic Hazards
 Harmony Specific Plan Draft EIR



Legend

- Previously Mapped Faults
- Potential Faults within Limits of Investigation
- Fault Trench
- San Andreas Earthquake Fault Zone
- Project Boundary

Source: Converse Consultants, Revised Fault Investigation Report, Fault Trench Map, November 2011.



0 1,000 2,000 3,000 Feet

Figure 5.6-2 – Fault Location Map
Harmony Specific Plan Draft EIR

Table 5.6-A - Seismic Characteristics of Nearby Active Faults

Fault Name and Section	Approximate Distance to the Project site (kilometers)	Max. Moment Magnitude (Mw)	Slip Rate (mm/yr)
San Andreas - Southern	1.4	7.4	24.0
San Jacinto-San Jacinto Valley	15.1	6.9	12.0
San Jacinto-San Bernardino	15.4	6.7	12.0
North Frontal Fault Zone (West)	18.9	7.0	1.0
Cleghorn	22.4	6.5	3.0
North Frontal Fault Zone (East)	31.7	6.7	0.5
Cucamonga	31.9	7.0	5.0
Pinto Mountain	35.3	7.0	2.5
Helendale - S. Lockhardt	37.0	7.1	0.6
San Jacinto-Anza	43.5	7.2	12.0
San Andreas - 1857 Rupture	45.7	7.8	34.0
Lenwood-Lockhart-Old Woman Springs	51.5	7.3	0.6
Chino-Central Ave. (Elsinore)	52.5	6.7	1.0
Elsinore-Glen Ivy	53.0	6.8	5.0
San Jose	54.1	6.5	0.5
Elsinore-Temecula	55.6	6.8	5.0
Elsinore-Whittier	56.3	6.8	2.5
Sierra Madre(Central)	56.6	7.0	3.0
Johnson Valley (Northern)	60.5	6.7	0.6
Landers	63.2	7.3	0.6
Burnt Mountain	64.3	6.5	0.6
Eureka Peak	65.3	6.5	0.6
Clamshell-Sawpit	70.1	6.5	0.5
Emerson So. – Copper Mountain	70.9	6.9	0.6
Calico – Hidalgo	80.6	7.1	0.6
Elsinore – Julian	80.8	7.1	5.0
Raymond	83.4	6.5	0.5
Pisgah-Bullion Mountain.-Mesquite Lake	87.5	7.1	0.6
Gravel Hills-Harper Lake	87.6	6.9	0.6
San Jacinto-Coyote Creek	90.1	6.8	4.0
Verdugo	91.9	6.7	0.5
Newport-Inglewood (Offshore)	91.9	6.9	1.5
Newport-Inglewood (L.A. Basin)	93.3	6.9	1.0
Blackwater	103.1	6.9	0.6

Source: *Revised Preliminary Geotechnical Investigation Report*, Converse Consultants , November 21, 2011, Table No. 1, Seismic Characteristics of Nearby Active Faults, p. 11

5.6.1.4 Liquefaction

Liquefaction is a phenomenon in which loose, water saturated, granular soils temporarily behave similarly to a fluid when subjected to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: 1) shallow groundwater, 2) low-density silty or fine sandy soils, and 3) high intensity ground motion.

According to the General Plan the entire Project site is located within a high liquefaction susceptibility area (GP, Figure 6-3). However, in order for liquefaction to take place the following conditions must be present (Converse (a), p. 15):

- Soils must be submerged
- Soils must be primarily granular
- Soils must be contractive, that is, loose to medium-dense
- Ground motion must be intense
- Duration of shaking must be sufficient for the soils to lose shear resistance
- Ground water must be shallow

The depth to standing groundwater at the Project site is estimated to be deeper than 50 feet from the existing ground surface. Saturated soils at such depths are not susceptible to liquefaction due to high effective confining stress. In addition, the soils encountered in the borings (conducted as part the Project's geotechnical investigation) typically exhibited relatively high densities. For these reasons, the Project site is not considered to be generally susceptible to liquefaction. However, limited areas of loose sediments may be susceptible to liquefaction if saturated by perched water from irrigation or precipitation. (Converse (a), p. 15) **Figure 5.6-1** shows the portions of the Project site that are susceptible to liquefaction.

5.6.1.5 Lateral Spreading

Seismically-induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. Lateral spreading is not the same as slope failure in that complete ground failure with ground movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near vertical cracks with predominantly horizontal movement of the soil mass involved. (Converse (a), p. 15)

The potential for lateral spreading at the Project site is considered very low, because the topography at the Project site is relatively flat and the site is underlain by mainly gravels and cobbles with fine-to coarse grained soils (Converse (a), p. 15).

5.6.1.6 Landslides

The term "landslide" describes a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. Landslides are fast, downward movement of earth and rock materials. Some landslides are caused by the infiltration of water into unstable material. Other landslides are earthquake-induced landslides consisting of rock falls and debris flow. Areas with the potential for earthquake induced landslides

generally occur in areas of previous landslide movement, or where topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacement (GP, p. 6-14)

The steeply sloping northern portion of the Project site is in a landslide hazard zone. The portion of the site north of Morton Canyon is within an area that is designated as moderate to highly susceptible to landsliding. In addition, several existing landslides have been mapped within the Project site boundaries. (Converse (a), p.9- 10) **Figure 5.6-1** shows the portions of the Project site that are susceptible to landsliding.

5.6.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to geology and soils may be considered potentially significant if the Project would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) strong seismic ground shaking; iii) seismic-related ground failure, including liquefaction; iv) landslides;
- result in substantial soils erosion or loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- 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.

5.6.3 Related Regulations

5.6.3.1 Federal

There are no federal regulations applicable to geology and soils with respect to this Project.

5.6.3.2 State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972. Its primary purpose is 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. Therefore, if a project site is located in an Earthquake Fault Zone, the City of Highland must withhold development permits for sites within the fault zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

The *Revised Fault Investigation Report* satisfies the requirement for a geologic investigation for that portion of the Project Site within the area of investigation as shown on **Figure 5.6-2**.

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 zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures.

The City of Highland is located outside of a mapped area for Seismic Hazard Zones, which establishes regulatory zones that encompass areas prone to liquefaction and earthquake-induced landslides. (GP EIR, p. 5.6-8)

California Building Code (CBC)

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 after 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 2010 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 seismic zoning for Seismic Zone 4. Seismic ratings are derived from CBC specifications which divide the U.S. into five geographical zones (0 through 4), of which Seismic Zone 4—comprising most of central, coastal and southern California—is the most prone to earthquake activity.

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a “Natural Hazard Disclosure Statement” when the property being sold lies within one or more state-mapped hazard areas. If a property is 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.” This publication was written and adopted by the California Seismic Safety Commission.

California Civil Code Section 1103-1103.4

California Civil Code Section 1103-1103.4 applies to the transfers of real property between private parties, as defined therein, and requires notification upon transfer if the property is affected by one or more natural hazards. The following potential hazards must be disclosed, if known: FEMA flood hazard areas, dam failure inundation areas, very high fire hazard severity zone, wildland area with forest fire risks, earthquake fault zone, and seismic hazard zones including landslide and liquefaction on a standardized "Natural Hazard Disclosure Statement" (Section 1103.2). The proposed Project site includes some of these potential hazards including dam failure inundation areas and an earthquake fault zone.

National Pollutant Discharge Elimination System (NPDES) Permit Program

In order to reduce the impact that construction of the Project could have on increased water and soil erosion, siltation, and in general water quality, the Project proponent must prepare:

- A project-specific **Storm Water Pollution Prevention Plan (SWPPP)** pursuant to the State Water Resources Control Board, NPDES, Water Quality Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ, General Permit No. CAS000002 Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity (General Permit). Under this order, a SWPPP is to be developed and implemented for each construction site covered by the NPDES General Construction Permit. The SWPPP is developed to meet the following objectives: Identify all pollutant sources that may affect the quality of discharges of storm water associated with construction activity (storm water discharges) from the construction site; identify non-storm water discharges; Identify, construct, implement, and maintain best management practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction; develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs); identify a sampling and analysis strategy and sampling schedule for discharges from construction activity which discharge directly to a water body listed for impairment due to sedimentation, in accordance with Section 303(d) of the Clean Water Act; and identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff. The Project will be required by the City of Highland to prepare a SWPPP prior to grading permits, and by implementing BMPs identified in the SWPPP, impacts to soil erosion and siltation on- and off- site will be reduced to less than significant levels.
- A project-specific **Water Quality Management Plan (WQMP)** will also be required by the City of Highland for the Project. The WQMP provides guidance for the use of post-construction BMPs which are intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. This can be achieved through reducing the impervious surface area of the Project site, providing for run-off storage, and implementing on-lot hydrologically functional landscape design. Through development and implementation of a WQMP for the Project, impacts relating to on- or off-site water erosion will be reduced to less than significant

levels. Please see Section 5.9, Hydrology/Water Quality of this DEIR for a more thorough discussion of the Project's WQMP.

5.6.3.3 Local

City of Highland Municipal Code

The City of Highland regulates geologic and seismic hazards through the City's Municipal Code. The following are existing regulations and standard conditions for development projects within the City.

- **Chapter 15.04 and Chapter 15.08:** The City of Highland has formally adopted the 2013 California Building Code (CBC) for regulating the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, equipment, use, height, area, and maintenance of all buildings or structures in the City providing for issuance of permits and collection of fees therefore; and each and all of the regulations, provisions, conditions and terms of such CBC, Volume I and Volume II, published by the International Conference of Building Officials.
- **Section 16.64.070:** City of Highland Municipal Code places additional requirements on new development and redevelopment within the City to reduce, eliminate, and prevent conditions of accelerated erosion. These include areas within or adjacent to hillsides and additional requirements if construction is to occur during the rainy season, design considerations, runoff control, and restrictions on land clearing. The City of Highland also conducts inspections by the City building official to ensure compliance with provisions contained within the Municipal Code.
- **Section 16.40.300:** The City of Highland recognizes that many active and potentially active faults may be located outside the Alquist-Priolo Special Studies Zone. Under Section 16.40.300 of the City of Highland Municipal Code, geologic investigations shall be required in all instances for the following critical and high occupancy uses: those uses which manufacture, handle, or store hazardous or explosive materials; hospitals and other emergency medical facilities; police, fire and communications systems; emergency operations centers (EOCs); ambulance services; schools and other public assembly uses such as theaters, shopping malls, arenas, etc.; power plants; utility substations; dams; sewage treatment plants; and water works.

Section 16.40.300 also requires that geologic investigations submitted to the City for review shall be prepared by a geologist registered in the State of California and shall be reviewed for acceptance by a geologist registered in the State of California who is an employee or is under contract to the City. Copies of all geologic investigations shall be kept on file in the office of the city engineer. Further, all investigations involving proposals within the Alquist-Priolo Special Studies Zone shall be filed with the state geologist within 30 days following acceptance by the city engineer or designee. Geologic investigations submitted to the city for review shall consider ground shaking as the greatest potential risk and shall include a thorough evaluation of potential hazards based upon soil types, slope stability, proximity to fault lines, and expected magnitude.

- **Section 16.40.320:** A preliminary soils report, prepared by a civil engineer registered in the state of California and based upon adequate test borings, shall be required for every subdivision for which a final tract or final parcel map is required, and may be required by the city engineer for

other development applications. In the event the preliminary soils report indicates the presence of critically expansive soils or other soils problems which, if not corrected, could lead to structural defects, a soils investigation of each lot, parcel, or building site in the subdivision or development may be required. Such soils reports must be performed by a civil engineer registered in the state of California, who shall recommend the corrective action which is likely to prevent structural damage to each structure proposed to be constructed in the area where an identified soils problem exists. The subdivision, or other recommended development or any portion thereof, where such soil problems exist may be approved if it is determined by the city engineer that the action is likely to prevent structural damage to each structure to be constructed and that the issuance of any building permit shall be subject to the inclusion of such recommended actions within the construction of each structure involved.

- **Section 16.40.420:** Places additional hillside development regulations on any lot or parcel of land with an average slope of 10 percent or greater.

City of Highland General Plan

Goal 6.1 Minimize the risk to public health and safety and disruption to social, economic, and environmental welfare resulting from seismic and geologic activities.

- **Policy 6.1-1:** Ensure that all new development, including facilities required for the provision of emergency services following a seismic or geologic event, adhere to proper construction design criteria (GP, p. 6-13).
- **Policy 6.1-2:** Enforce the requirements of the Alquist-Priolo Earthquake Fault Zoning Act and require the preparation of reports pursuant to the Act as part of the development review process for all new projects (GP, p. 6-13).
- **Policy 6.1-4:** Continue to evaluate all new development within the Alquist-Priolo Earthquake Fault Zone (GP, p. 6-13).
- **Policy 6.1-5:** Continue to evaluate the compatibility of critical, essential, high occupancy, and normal to low risk uses in areas of potential liquefaction during the review of all discretionary and ministerial actions (GP, p. 6-13).
- **Policy 6.1-6:** Continue to review building and zoning codes to determine the need for specific standards for siting and seismic design criteria, especially for critical, essential, high occupancy, and normal to low risk structures (GP, p. 6-13).
- **Policy 6.1-7:** Review existing critical and emergency structures for any significant siting, design, or construction problems that would make them vulnerable in an earthquake, and incorporate findings of the review into emergency operations plans and long-term programs for upgrading or relocating vulnerable facilities (GP, p. 6-13).
- **Policy 6.1-8:** Continue to monitor new building materials used for earthquake stability and fire resistance and incorporate such materials into plan checks when applicable (GP, p. 6-13).

- **Policy 6.1-9:** Continue to enforce as part of the development review process site-specific analysis of soils and other conditions related to the onsite impact of maximum credible seismic and geologic events (GP, p. 6-13).

Goal 6.2- Protect people and property from hazards related to slope instability.

- **Policy 6.2-1:** Continue to enforce hillside development guidelines for proposed development within or nearby slope instability areas of the City (GP, p. 6-15).
- **Policy 6.2-2:** Require appropriate structural design measures for proposed development within hillside or steep slope areas (GP, p. 6-15).

5.6.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts to geologic hazards through the design of the Project. The Harmony Specific Plan contains the following development standards related to grading. (HSP, p. 5-5).

- A grading permit shall be obtained from the City of Highland.
- All public streets shall have a minimum gradient of 1.0 percent.
- Swales surrounding structures shall be in accordance with the California Building Code.
- Prior to initial grading activities, a detailed geotechnical study shall be prepared to analyze on-site soil conditions and slope stability.
- Slopes steeper than 2:1 and exceeding ten feet (10') in vertical height may be allowed provided they are recommended to be safe in a Slope Stability Report prepared by a soils engineer or an engineering geologist and approved by the City of Highland.
- In order to achieve flexibility and creative design solutions, plans for landscaping and irrigation plans will be provided as determined by the City Engineer.
- Once landscaping and irrigation is needed, maintenance will be determined by the applicant or applicant's agent.
- Drainage structures such as brow ditches, terrace drains, swales, and miscellaneous drainage devices will be determined as needed by the project engineer for compliance with the California Building Code and City of Highland requirements.
- In order to achieve an earthwork balance within any development phase, grading may encroach into an area of future development. Encroachment into these areas may involve the borrowing or temporary stockpiling of dirt to balance areas in the order of the project phasing. If such is the case, grading plans shall be prepared for this purpose and grading will be performed as directed by the soils engineer. The overall Conceptual Grading Plan for the project will be used as a guide for the overall project as well as any conceptual grading plans for an individual planning area. Any off-site grading will be as directed by the soils engineer and these Grading Plan development standards.

- Graded land that is undeveloped shall be maintained weed free, and planted with material selected by the soils engineer, treated with soil binder, or other approved methods of soil stabilization, to prevent dust and dirt erosion. Planting with interim landscaping shall comply with NPDES Best Management Practices for wind and water erosion control

5.6.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) strong seismic ground shaking; iii) seismic-related ground failure, including liquefaction; iv) landslides?*

i) Fault Rupture

Fault rupture is the result of the fault movement during a seismic event (earthquake). Any above or below ground structures crossing a fault can be damaged or broken as a result of fault rupture. Fault rupture hazards can be characterized by a site's proximity to an active or potentially active fault and the designation of the Site being within an Alquist-Priolo Special Study Zone. (GP EIR, p. 5.6-8)

As described in Section 5.6.3.1 above, approximately half of the Project site is located within the State of California-designated San Andreas Earthquake Fault Zone (an Alquist-Priolo Zone) (see **Figure 5.6-1 – Geologic Hazards**). Additionally, the United States Geological Survey (USGS) geologic map of the region depicts several faults within the Project site. The following faults are shown on the Geologic Map of the Yucaipa 7.5 Quadrangle:

- The “Greenspot fault”, located in the northwestern portion of the Project site, is mapped as a “scarp-like structure of probable tectonic origin”.²
- A scarp-like feature, sub-parallel to and east of the Greenspot fault, is also identified as probably tectonic in origin, and is shown as a queried fault.
- A similar inferred, short, queried fault segment³ is shown north of Newport Road, in line with the above-described scarp east of the Greenspot fault. No discussion of this fault is provided.
- The Mill Creek Thrust is described as a low-angle reverse fault.⁴ This fault is within a small portion of the northeastern development area, but outside the limits of the current investigation.

² A scarp is a landform that places a steep slope next to a relatively flat or gently sloping surface. Scarps are sometimes associated with displacement of the ground surface by a fault. A “scarp-like structure of probable tectonic origin” refers to a scarp that is suggestive of fault activity, but which has not been proven to be caused by a fault.

³ A queried fault segment (i.e., a section of a mapped fault that is marked with question marks) indicates that the existence of that portion of the fault is uncertain.

⁴ A reverse fault is a fault in which the hanging wall has moved upward relative to the footwall. A low-angle fault is generally one in which the dip of the fault plane is less than 45 degrees from horizontal. A low-angle reverse fault may also be referred to as a thrust fault.

In addition to the four faults identified on the Geologic Map of the Yucaipa 7.5 Quadrangle, another fault was identified during the field investigation that was conducted for the *Revised Fault Investigation Report* (Appendix F.1). The known and inferred faults that cross the Project site are designated as Faults 1 through 5 and are summarized in **Table 5.6-B – Identified Faults Traversing the Project Site** below and shown on **Figure 5.6-2**.

Table 5.6-B - Identified Faults Traversing the Project Site

Fault	Description
1	Greenspot fault (Matti, 2003)
2	Unnamed fault east of Greenspot fault (Matti, 2003)
3	Unnamed fault north of Newport Road (Matti, 2003)
4	Southernmost fault in the Earthquake Fault Zone (CGS, 1979)
5	Previously unmapped fault (Converse, Fault Investigation Report, 2011)
Source: <i>Revised Fault Investigation Report</i> , Converse Consultants, November 21, 2011, p. 11	

All known or inferred faults (Faults 1 through 5) are pre-Holocene in age (about the last 11,000 years) and as such are considered “not active” according to the present State of California criteria. (Converse (b), 18) The following is a summary of the fault investigation conclusions:

- **Fault 1:** Does not occur within the depths explored (up to 15-feet deep), and if present, does not break Holocene or late Pleistocene sediments.
- **Fault 2:** Does not exist based on observations in FT-12⁵ and FT-13. Instead, the scarp-like feature is erosional in origin with unbroken sediments demonstrating that faulting is not present.
- **Fault 3:** Does not exist based on observations in FT-7 and FT-8. Instead, the scarp-like feature is erosional in origin with unbroken sediments demonstrating that faulting is not present.
- **Fault 4:** Does not break Holocene sediments based on logging and a measured soil profile in FT-20.
- **Fault 5:** Does not break Holocene sediments based on logging and a measured soil profile in FT-6.

Therefore, out of the five potential faults on the Project site, Converse concludes that Faults 1, 2, and 3 were surface expressions of buried erosional features and only Fault 4 and 5 exist and are not active as defined by the State of California. There are no other unidentified faults with Holocene activity within the portion of the Earthquake Fault Zone located inside the limits of the fault investigation area (Converse (b), pp. 18 and 19).

⁵ FT refers to the trenches excavated as part of the fault investigation. The location of these trenches is shown on Figure 5.6-2.

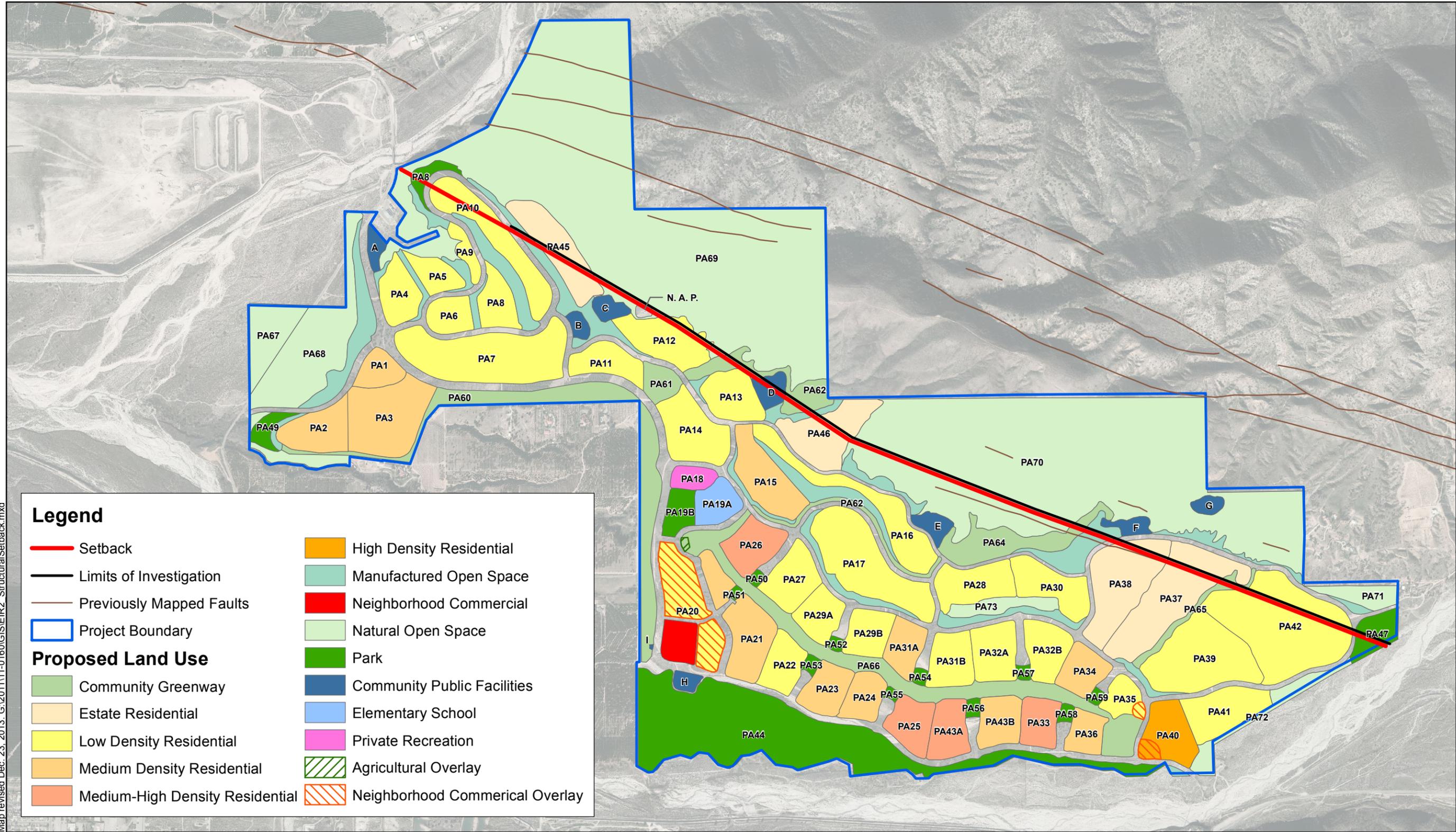
However, because the Earthquake Fault Zone extends beyond the area of investigation, it is still considered possible that an active fault could exist immediately outside the area of investigation. Therefore, a structural setback that extends 50 feet south of the area of investigation, as shown in **Figure 5.6-3 - Structural Setback**, will be implemented. This setback may be revised or eliminated if a future fault investigation of the areas north of the area of investigation limits demonstrate that active faulting is not present (Converse (b), pp. iv, 20).

Therefore, for that portion of the Project site which is within the area of investigation, because there are no known active faults impacts with regards to exposing people or structures to substantial risk regarding the rupture or a known earthquake fault from development within that portion of the Project site are less than significant. For the northern portion of the Project site that is outside the area of investigation, mitigation measure **MM GEO 1** requires a future investigation that demonstrates active faulting is not present prior to any development. Therefore, with implementation of mitigation measure **MM GEO 1**, no development will occur on an active fault. Therefore, with implementation of mitigation measure **MM GEO 1**, the potential adverse impacts related to the rupture of a known earthquake fault within the development will continue to be **less than significant**.

ii) Strong Seismic Ground Shaking

Ground shaking is the movement of the earth in response to a seismic event. The intensity of ground shaking at a given location depends on several factors, but primarily on the earthquake magnitude, the distance from the hypocenter to the site of interest, and the response characteristics of the soil or bedrock units underlying the site.

Differential settlement may occur when relatively low-density, medium- or coarse-grained sands are densified by intense seismic shaking. Due to the uniform distribution of medium dense soil mixed with high percentage of gravels, cobbles and boulders, and low collapse potential where tested, the Project site soils are not anticipated to be susceptible to significant differential settlement due to seismic shaking (Converse (a), pp. 15 and 16).



Map revised Dec. 23, 2013. G:\2011\11-0160\GIS\ER2_StructuralSetback.mxd

Sources: Converse Consultants, Revised Preliminary Geotechnical Investigation Report, Geologic Map, November 2011; Harmony Specific Plan, Dec. 2013.



0 1,000 2,000 3,000 Feet

Figure 5.6-3 – Structural Setback
Harmony Specific Plan Draft EIR

The north and south branches of the San Andreas Fault along with a number of minor and trace faults of the San Andreas Special Studies Zone are present within and nearby Highland (GP EIR, p. 5.6-8). The San Andreas Fault is potentially capable of generating an earthquake magnitude of up to 8.3 on the Richter scale. The 1857 Fort Tejon earthquake was the last major earthquake along the south branch of the San Andreas, estimated at a Richter magnitude of 8.0 plus. The San Jacinto Fault Zone has a maximum credible earthquake Richter magnitude of 8.5 and has the potential for significant ground shaking within the region since it located only 4.5 miles southwest of Highland (GP, p. 6-3).

There is no realistic way in which the hazard of seismic shaking can be totally avoided. However, exposure to future ground shaking at the Project site is no greater than at many other sites in southern California. Furthermore, it should be recognized that while it is not considered feasible to make structures resistant to seismic shaking, they are designed not to collapse.

The effects of seismic shaking on structures can be reduced through conformance with the recommendations of the geotechnical consultant(s) for the future implementing projects, the Structural Engineers Association of California, the CBC, and/or other local governing agencies' codes or requirements. This will promote safety in the event of a large earthquake and minimize damage. Mitigation measure **MM GEO 2** requires that prior to the issuance of a grading permit for any implementing project, an updated geotechnical study reviewing the most current development plan be prepared to analyze on-site soil conditions and include appropriate measures to provide foundation stability, seismic design, and limit damage from erosion in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. Therefore, due to the location of the Project, the proposed Project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic shaking. Those substantial adverse impacts will be **reduced to a level that is less than significant** with implementation of **MM GEO 2**.

iii) Seismic-Related Ground Failure, Including Liquefaction

Based on the General Plan the entire Project site is designated as being located within a high liquefaction susceptibility area (GP, Figure 6-3, High Liquefaction and Landslide Susceptibility Areas). However, as discussed in Section 5.6.1.4 based on the on the findings of the preliminary geotechnical investigation, the Project site is not considered to be generally susceptible to liquefaction. (Converse (a), p. 15)

Springs and seeps have been reported to exist seasonally within the Project. Saturated soils were encountered locally during the geotechnical investigation. Groundwater seepage and saturated soils were observed in fault trenches excavated near the eastern, upstream end of the drainage channel located between borings BH-17 and BH-20 (as shown on Drawing No 1 in Appendix F.1). This area is in the northwestern portion of the site, north of Villars Street. The seepage appeared to be within undocumented fill used during historical orchard planting. Active irrigation pipes, at least one of which was observed to leak, were present. It is considered likely that the saturated subsurface condition may be related to leaking irrigation water, rather than a natural spring or standing groundwater. (Converse (a), p. 5) If seepage is encountered during grading, the geotechnical consultant should provide recommendations for an appropriate subdrain to collect the water and conduct it from the fill to an

appropriate discharge point. Fill slopes constructed over existing slopes should incorporate backdrains to prevent accumulation of water within the slope if seepage occurs beneath the fill. Depending on the configuration of the final site design, it may be appropriate to install canyon subdrains in any existing drainage channels that will be filled (Converse (a), p. 19).

Based on the fact that the entire Project site is designated as being located within a high liquefaction susceptibility area the proposed Project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction. However, with the implementation of **MM GEO 2**, an updated geotechnical study reviewing the most current development plan shall be prepared to analyze on-site soil conditions and include appropriate measures to provide foundation stability and limit damage from erosion and seepage in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. Therefore, liquefaction impacts are considered to be **less than significant with mitigation incorporated**.

iv) Landslides

The term “landslide” describes a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. The materials may move down slopes by falling, toppling, sliding, spreading, or flowing.

Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. The steeply sloping northern portion of the Project site is in a landslide hazard zone. Several existing landslides have been mapped within the Project site boundaries, generally outside of the potential development limits. Limited areas along the northern limit of the potential development area may be susceptible to seismically induced landslides.

The steeply sloping northern portion of the Project site is in a landslide hazard zone. The portion of the site north of Morton Canyon is within an area that is designated as moderate to highly susceptible to landsliding. In addition, several existing landslides have been mapped within the Project site boundaries (Converse (a), pp.9- 10). **Figure 5.6-1**, shows the portions of the Project site that are susceptible to landsliding. Because the landslide hazard zones are within Specific Plan Planning Areas designated as Natural Open Space (PA 69 and PA 70) no impacts to structures are anticipated. Therefore, impacts associated with exposing people or structures to substantial risk regarding landslides are less than significant.

Nonetheless, mitigation measure **MM GEO 2** requires that an updated geotechnical study reviewing the most current development plan shall be prepared to analyze on-site soil conditions and slope stability, including appropriate measures to analyze areas susceptible to landslides in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. Potential impacts associated with landslides will be **less than significant**.

Threshold: *Would the proposed Project result in substantial soil erosion or the loss of topsoil?*

Implementation of the proposed Project will involve grading, excavation, trenching, temporary stockpiling, and construction work in areas of varying terrain, which has the potential to result in soil erosion or the loss of topsoil. Approximately 11,500,000 cubic yards of soil is estimated to be excavated

as part of the proposed Project. The Project site will be graded in phases. Standard construction procedures and BMPs implemented in conjunction with the SWPPP(s) required under the State NPDES construction permit will minimize potential for erosion and siltation during construction. The intent of incorporating BMPs into the site design is to prevent any net detrimental change in run-off quantity or quality resulting from the Project. BMPs can be both structural and nonstructural stormwater management control measures taken to mitigate changes to both quantity and quality of runoff caused through construction activities. BMPs are designed to reduce volume, peak flows, and/or non-point source pollution through evapotranspiration, infiltration, detention, and filtration or biological and chemical actions. The types of erosion control BMPs that may be used during Project construction include: preservation of existing vegetation, silt binders, silt fences, fiber rolls, and gravel bags, hydraulic mulch, hydroseeding, soil binders, straw mulch, wood mulching, and compost blanket or other such measures implemented in accordance with the latest edition of the California Stormwater Quality Association's Stormwater Best Management Practice Handbook.

The *Conceptual Water Quality Management Plan (CWQMP) for Harmony Tentative Tract No. 18871*, (prepared by RBF Consulting (RBF(b)) dated March 17, 2014) was determined to be preliminarily acceptable to the City for use in the Draft EIR analysis. However, the City will require approval of the CWQMP as a condition of approval of Tentative Tract Map No. 18871. The CWQMP identifies structural and non-structural source control BMPs, Preventative LID (low impact development) site design practices, project performance criteria, hydrologic source control BMPs, infiltration BMPs, biotreatment BMPs, and hydromodification BMPs to be implemented by the Project. Refer to Section 5.9 – Hydrology /Water Quality for additional information regarding the CWQMP.

Compliance with NPDES requirements will also necessitate the development of one or more project-specific WQMPs as development takes place per the Harmony Specific Plan. These WQMPs will include: a site and watershed assessment, how the site will ultimately impact the watershed; comprehensive understanding of the hydrologic conditions of concern; evaluation of pollutants of concern; source control and/or treatment control BMP selection and sizing; the development of a long term BMP maintenance agreement and schedule. Post construction development includes an on-street and underground storm drain system. On site erosion will be minimized post-construction through the use of landscaping, stormwater BMPs, and the stormdrain system; which will reduce the chance of on- and off-site erosion. Through the above mentioned planning actions post-construction and post-Project runoff will be reduced and/or eliminated, sources of pollutants will be controlled, and contaminated stormwater run-off will be treated prior to exiting the site and entering any local water body. Implementation of NPDES requirements in the SWPPP and WQMP will reduce potential impacts that would create substantial soil erosion or loss of top soil to **less than significant** levels.

Nonetheless, the mitigation measure **MM GEO 2** also requires that, prior to any grading permits, an updated geotechnical study be prepared and include appropriate measures to limit damage from erosion in accordance with City of Highland Municipal Code Title 15 and the current California Building Code.

Threshold: *Would the proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

The United States Geological Survey Map depicts the Project site as underlain by alluvial fan deposits which increase in age from southeast to northwest (Converse (b), p. 7). The older alluvial deposits predominantly consisted of medium dense to very dense sand and silty sand with occasional layers of clayey sand (Converse (a), p. 4). Alluvial soils can be unstable in that they can be prone to liquefaction, lateral spreading, collapse, subsidence and compressibility. Lateral spreading, liquefaction, and landslides are discussed in the threshold above.

Subsidence is a lowering or collapse of the ground. Shrink–swell occurs as a result of changes in the moisture content of clay-rich soils. The overall amount of shrinkage or bulking will depend on the volume and depth of cuts included in the Project site grading. Bulking pressures can cause heaving, or lifting, of structures. Up to 0.1 feet of subsidence may be anticipated. This is due to the settlement of native materials from the equipment load applied during grading.

Within the upper 10 feet of soil in a specific area, a possible range of 15 percent shrinkage to 10 percent bulkage may occur when the soil is removed and replaced as compacted fill, assuming an average relative compaction of approximately 92 percent. Remedial grading in drainage channels or younger alluvial deposits will likely result in higher shrinkage. For planning purposes, it is anticipated that cuts of less than 5 feet will average 5 percent shrinkage and cuts deeper than 5 feet will produce little or no shrinkage (Converse (a), p. 20).

With the implementation of **MM GEO 2**, an updated geotechnical study reviewing the most current development plan shall be prepared to analyze on-site soil conditions and include appropriate measures to provide foundation stability and limit damage from subsidence in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. Therefore, impacts are considered to be **less than significant with mitigation incorporated**.

Threshold: *Would the proposed Project be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Expansive soils are soils with a significant amount of clay particles that have the ability to give up water (shrink) or take on water (swell). Fine-grained soils, such as silts and clays, may contain variable amounts of expansive clay minerals. When these soils swell, the change in volume exerts significant pressures on loads that are placed on them. This shrink/swell movement can adversely affect building foundations, often causing them to crack or shift, with resulting damage to the buildings they support. All proposed construction would be required to be in accordance with the requirements of the CBC. Based on the expansion index laboratory test results from the Preliminary Geotechnical Report, the expansion potential of the Project site soils ranged from very low to low (Converse(a), p. 22) and therefore a very low potential for expansive soils to be encountered exists in the Project area. However, due to the very low potential, a significant impact could occur. Due to the size of the Project area, site specific geotechnical reports will be required to ensure that the potential for a significant impact does not exist. Mitigation measure **MM GEO 2** requires that an updated geotechnical report be prepared at the design

level prior to construction of any structures and will evaluate site-specific soil conditions in order to properly recommend structural design of building components (e.g., footings, framing, slabs) in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. Thus, although implementation of the proposed Project has the potential to create a substantial risk to life or property with respect to being located on expansive soil, impacts will be **less than significant with the implementation of MM GEO 2**.

Threshold: *Would the proposed Project 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?*

As part of the Project, a sewer system will be installed. Therefore, the use of septic tanks or alternative waste water disposal systems is not necessary. Refer to Section 5.17 Utilities and Service Systems for complete analysis of the Project's design of disposal of waste water. **No impacts** will occur.

5.6.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State CEQA Guidelines, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts upon geology and soils or to reduce impacts to below the level of significance.

Structural Setbacks

MM GEO 1: No structure intended for human occupancy, as defined by the State of California, shall be located within a 50-foot structural setback area beginning 50 feet (measured perpendicularly) southwest of the "area of investigation" line and extending north to the Project boundary as shown on **Figure 5.6-3 – Structural Setback** until and unless a geologic report prepared in accordance with the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code, Division 2, Chapter 7.5, Section 2623) and approved by the City of Highland, defines and delineates any hazard of surface fault rupture sufficiently to prevent the placement of structures for human occupancy across the trace of active faults. The geologic report shall be signed by a Certified Engineering Geologist licensed to practice in the State of California in accordance with the Geologist and Geophysicist Act (California Business and Professions Code, Chapter 12.5).

The State of California defines a structure for human occupancy as any structure that is expected to have a human occupancy rate of more than 2,000 person-hours per year. Structures for human occupancy include, but are not limited to, residences, office buildings, retail stores, parking garages, and clubhouses. Other structures, such as, but not limited to, roadways, parks, parking lots, swimming pools, may generally be constructed within the structural setback area. The final determination of which structures may be located within setback areas shall be made by the City of Highland based on future development plans for implementing projects within the Harmony Specific Plan and subsequent implementing project-specific geotechnical investigations as required by mitigation measure **MM GEO 2**.

MM GEO 2: Prior to issuance of a grading permit on any implementing project, an updated geotechnical report reviewing the most current development plan shall be prepared to analyze on-site

soil conditions and slope stability and include appropriate measures to provide foundation stability, seismic design, and limit damage from erosion in accordance with City of Highland Municipal Code Title 15 and the current California Building Code. The required geotechnical report shall be signed by a Professional Geologist licensed to practice in the State of California in accordance with the Geologist and Geophysicist Act (California Business and Professions Code, Chapter 12.5) and a Professional Engineer licensed to practice in the State of California in accordance with the Professional Engineers Act (California Business and Professions Code, Chapter 7).

The implementing project-specific geotechnical report(s) and any measures recommended therein that provide foundation stability, seismic design, and limit damage from erosion shall be reviewed and approved by the City of Highland. Each implementing project shall incorporate all City-approved measures with regards to foundation stability, seismic design, and limiting damage from erosion.

5.6.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

All potential significant adverse environmental effects are reduced to **below the level of significance** following implementation of regulations, design features, and incorporation of the proposed mitigation measures outlined above.

5.6.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Geologic hazards are localized by nature, as they are related to the soils and geologic character of a particular site. Cumulative impacts could occur related to an earthquake, if the magnitude of the quake and location of the fault(s) traversed the region. Impacts due to seismic activity would be cumulative if state and local building and development codes and regulations (existing regulatory requirements) were not being implemented throughout the region. Pursuant to City and State Building Code requirements, all new development will be required to incorporate appropriate design and construction measures to guard against ground shaking hazards. Further, the Project and all other projects and structures will be constructed in compliance with existing seismic safety regulations of the California Building Code and International Building Code, which requires the use of site-specific engineering and construction standards identified for each class of seismic hazard. In addition, City of Highland requires geological and geotechnical investigations in areas of potential seismic or geologic hazards as part of the environmental and development review process.

City of Highland is subject to a number of potential geologic hazards that have the potential to impact future build-out of the City of Highland General Plan. These hazards, including fault rupture hazards, ground shaking, liquefaction, landslides and rockfalls, seismically-induced settlement, subsidence and collapsible soils, and soil erosion and loss of topsoil were addressed in the DEIR and Section 5.6, herein. Cumulatively, however, build-out of the City of Highland General Plan and the Project will contribute significantly to the increased exposure of people and property to seismic, slope, soil instability, and wind hazards. It was determined that these impacts will be reduced to below the level of significance through

implementation of General Plan policies, Project Design Features, and mitigation measures discussed in Section 5.6, Geology and Soils, and existing regulatory requirements.

Since all local jurisdictions in the region are subject to local, state and federal laws, including CEQA, cumulative impacts related to geologic and soils safety are **less than significant**.

Section 7.1 of the DEIR includes additional information about cumulative impacts.

5.6.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- Converse (a) Converse Consultants, *Revised Preliminary Geotechnical Investigation Report, Greenspot Property, Seven Oaks Dam Area, 1,658-Acre Parcel, City of Highland, San Bernardino County, California, Volume 1 & II*, November 21, 2011. (Appendix F.1)
- Converse (b) Converse Consultants, *Revised Fault Investigation Report, Greenspot Property, Seven Oaks Dam Area, 1,658-Acre Parcel, City of Highland, San Bernardino County, California, Volume 1 & II*, November 21, 2011. (Appendix F.2)
- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- RBF(b) RBF Consulting, *Conceptual Water Quality Management Plan for Harmony Tentative Tract No. 18871*, March 17, 2014. (Available at the City of Highland.)

5.7 Greenhouse Gas Emissions

This section evaluates the Project's impacts related to greenhouse gas (GHG) emissions. The following discussion is based on the *Climate Change Technical Report* prepared by ENVIRON International Corporation, dated December 20, 2013 (cited as ENVIRON) for the proposed Project. This report is contained in Appendix G.1 of this document.

5.7.1 Setting

The earth's natural warming process is known as the "greenhouse effect." Certain atmospheric gases act as an insulating blanket for solar energy to keep the global average temperature in a suitable range. These gases are called "greenhouse gases" because they trap heat like the glass walls of a greenhouse. The greenhouse effect raises the temperature of the earth's surface by about sixty degrees Fahrenheit. With the natural greenhouse effect, the average temperature of the earth is about 45 degrees Fahrenheit; without it, the earth would be about minus 15 degrees. It is normal for the earth's temperature to fluctuate over extended periods of time. Over the past one hundred years, however, the earth's average global temperature has generally increased by one degree Fahrenheit. In some regions of the world, the increase has been as much as four degrees Fahrenheit.

Scientists studying the particularly rapid rise in global temperatures during the late twentieth century believe that natural variability alone does not account for that rise. Rather, human activity spawned by the industrial revolution has resulted in increased emissions of carbon dioxide and other forms of GHGs, primarily from the burning of fossil fuels (during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.) and deforestation, as well as agricultural activity and the decomposition of solid waste. The most common GHG is carbon dioxide (CO₂), which constitutes approximately 84 percent of all GHG emissions in California (CEC 2006b). Worldwide, the State of California ranks as the 12th to 16th largest emitter of CO₂ and is responsible for approximately two percent of the world's CO₂ emissions. Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect (CEC 2006b). While the increase in temperature is known as "global warming," the resulting change in weather patterns is known as "global climate change." Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature. The background on the science of climate change is discussed below in section 5.7.1.1.

The issue of global climate change and the effects of GHG emissions pose difficult questions for lead agencies under the California Environmental Quality Act (CEQA). The California Natural Resources Agency (CNRA) adopted revised CEQA Guidelines (Title 14 of the California Code of Regulations [CCR] Sections 15000 et seq.) on December 30, 2009, including two Appendix G checklist items for GHG emissions, proposed by the Governor's Office of Planning and Research (OPR) (the CEQA Amendments); while these revisions generally address GHG emissions, they do not provide specific direction on particular methodologies for performing a GHG emissions impact analysis, nor do they prescribe thresholds of significance for use in determining either project-level or cumulative impacts. Instead, the revised Section 15064.4(a) instructs lead agencies to "make a good faith effort, based to the extent

possible on scientific and factual data, to describe, calculate or estimate" greenhouse gas emissions (CNRA 2009c). In its Final Statement of Reasons for Regulatory Action accompanying the CEQA Amendments (FSOR), the CNRA explains that quantification of GHG emissions "is reasonably necessary to ensure an adequate analysis of GHG emissions using available data and tools" and that "quantification will, in many cases, assist in the determination of significance" (CNRA 2009a). The CNRA also notes, however, that revised Section 15064.4 reserves for lead agencies the discretion to determine the precise methodology to use for quantifying GHG emissions (CNRA 2009a). This DEIR section discusses various methodologies and provides substantial evidence supporting the City's analysis of the proposed Project's GHG emissions.

Since adoption of the CEQA Amendments in 2009, no agency other than the San Joaquin Valley Air Quality District, discussed below, has adopted a threshold for determining the significance of GHG emissions. As such, it is very difficult for lead agencies to determine what the appropriate threshold should be. Moreover, there are various and competing governmental and non-governmental agency guidance documents on the topic and a variety of trial court cases. Two published cases, *CREED v. City of Chula Vista* (CREED) and *Friends of Oroville v. City of Oroville* (Oroville) defer to a lead agency's discretion to adopt thresholds, including whether the project would meet target GHG reductions under the California Global Warming Solutions Act of 2006 (AB 32), discussed below.

Moreover, global climate change is by definition a global issue and California's efforts to reduce GHG emissions will not alone change the impact of global climate change. Reducing California's GHG emissions (even as the 8th largest economy in the world) cannot meaningfully impact the quantity of GHG in the global atmosphere. To date, other states and nations have not followed suit and have not enacted regulations similar to those adopted in California. California already has nearly the lowest level of GHG per capita of any state. Project-level emissions for activities that occur as a result of population-based variables (people needing housing, jobs and services) that occur in California reduces global GHG emissions by facilitating more growth and development in California relative to other states.

5.7.1.1 Background on Climate Change Science

This section summarizes the scientific issues surrounding climate change and global warming. It also provides a discussion of the actions and phenomena that contribute to climate change.

Global Climate Change

Global warming and global climate change are both terms that describe changes in the earth's climate. Global climate change is a broad term used to describe any worldwide, long-term change in the earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific than global climate change and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all

locations will be warmer. Some specific, unique locations may be cooler even though the world, on average, is warmer. All of these changes fit under the umbrella of global climate change.¹

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet (IPCC 2007a). This man-made, or anthropogenic, warming is primarily caused by increased emissions of GHGs that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role GHGs play in it are described below.

The Greenhouse Effect

Greenhouses allow sunlight to enter and then capture some of the heat generated by the sunlight's impact from leaving the earth's atmosphere. Similarly, the earth's atmosphere acts like a greenhouse by retaining some of the heat that is generated by the sun. When solar radiation from the sun reaches the earth, much of it penetrates the atmosphere to ultimately reach the earth's surface; this solar radiation is absorbed by the earth's surface and then re-emitted as heat in the form of infrared radiation.² GHGs do not absorb solar radiation but do absorb infrared radiation. When the infrared radiation is absorbed by the molecules of GHGs, it is reflected in all directions. A portion of the infrared radiation is emitted back towards the surface of the earth, in effect "trapping" the heat in the atmosphere.³ This phenomenon is referred to as the "greenhouse effect".

The earth's greenhouse effect has existed far longer than humans have and has played a key role in the development of life. Concentrations of major GHGs, such as CO₂, methane (CH₄), nitrous oxide (N₂O), and water vapor have been naturally present for millennia at relatively stable levels in the atmosphere, maintaining hospitable temperatures on the surface of the earth. Without these GHGs, the earth's temperature would be too cold for life to exist.

In the absence of major industrial human activity, natural processes have maintained atmospheric concentrations of GHGs, and, therefore, global temperatures at constant levels over the last several centuries.⁴ As human industrial activity has increased, atmospheric concentrations of certain GHGs have grown dramatically. **Figure 5.7-1 – Carbon Dioxide and Methane Concentrations** shows the increase in concentrations of CO₂ and CH₄ over time. As the concentrations of GHGs increase due to human activity, more infrared radiation is reflected back towards the earth, subsequently heating the surface of the earth to higher temperatures. This is the process that is described as human-induced global warming.

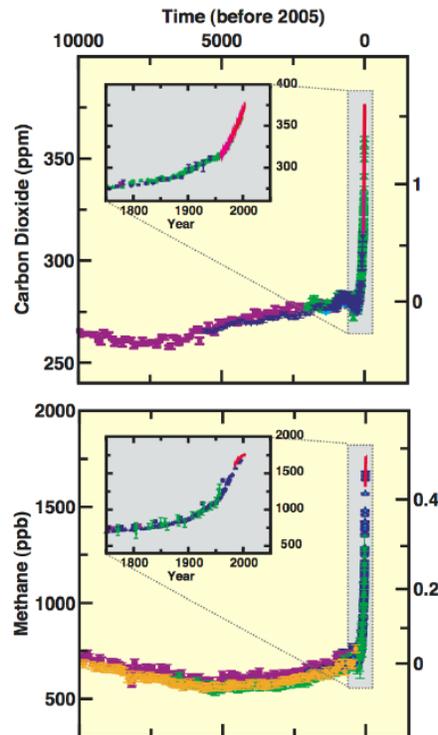
¹ Other definitions of "Greenhouse Effect" and "Global Warming" can be found on Merriam-Webster online, available at <http://www.merriam-webster.com>. A definition for "Climate Change" can be found online at <http://dictionary.reference.com>, which uses Webster's New Millennium Dictionary of English.

² All light, be it visible, ultraviolet, or infrared, carries energy.

³ Infrared radiation is characterized by longer wavelengths than solar radiation. GHGs reflect radiation with longer wavelengths. As a result, instead of escaping back into space, greenhouse gases reflect much infrared radiation (i.e., heat) back to Earth.

⁴ Examples of natural processes include the addition of GHGs to the atmosphere from respiration, fires, and decomposition of organic matter. The removal of GHGs is mainly from plant and algae growth and absorption by the ocean.

Figure 5.7-1 – Carbon Dioxide and Methane Concentrations



*Note: Carbon dioxide and methane concentrations have increased dramatically since the industrial revolution.
Source: IPCC 2007a, Figure SPM-1*

In 2007, the Intergovernmental Panel on Climate Change (IPCC) began releasing components of its Fourth Assessment Report on climate change. In February 2007, the IPCC provided a comprehensive assessment of climate change science in its Working Group I Report (IPCC 2007b). It states that there is a scientific consensus that the global increases in GHGs since 1750 are mainly due to human activities such as fossil fuel use, land use change (e.g., deforestation), and agriculture. In addition, the report states that it is likely that these changes in GHG concentrations have contributed to global warming. Confidence levels of claims in this report have increased since 2001 due to the large number of simulations run and the broad range of available climate models.

Greenhouse Gases and Greenhouse Gas Emission Sources

The term “GHGs” includes gases that contribute to the natural greenhouse effect, such as CO₂, CH₄, N₂O, and water, as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfur hexafluoride (SF₆). These last three families of gases, while not naturally present in the atmosphere, have properties similar to the naturally occurring GHGs, which also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Accords (water is not included).⁵ A seventh gas, nitrogen

⁵ This Kyoto Protocol sets legally binding targets and timetables for cutting the GHG emissions of industrialized countries. The US has not approved the Kyoto treaty.

trifluoride, was recently recognized by ARB as a GHG.⁶ There are other GHGs that are not recognized by the Kyoto Accords or ARB, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords or ARB because there is not an obvious correlation between water concentrations and specific human activities. Water appears to act in a positive feedback manner; higher temperatures lead to higher water concentrations, which in turn cause more global warming (IPCC 2001).

The effect each GHG has on global warming is a combination of the volume of their emissions and their global warming potential (GWP). GWP indicates, on a pound for pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent than CO₂, with GWPs of 21 and 310, respectively. However, these natural GHGs are nowhere near as potent as synthetic chemicals such as SF₆ and fluoromethane, which have GWPs of up to 23,900 and 6,500 respectively (CCAR 2008). GHG emissions are typically measured in terms of mass of CO₂-equivalent (CO₂e). CO₂e is calculated as the product of the mass of a given GHG and its specific GWP.

The most important GHG in human-induced global warming is CO₂. While many gases have much higher GWPs than the naturally occurring GHGs, CO₂ is emitted in such vastly higher quantities that it accounts for 85 percent of the GWP of all GHGs emitted by the United States (EPA 2008). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO₂ emissions and thus substantial increases in atmospheric CO₂ concentrations. In 2005, atmospheric CO₂ concentrations were about 379 parts per million (ppm), over 35 percent higher than the pre-industrial concentrations of about 280 ppm (IPCC 2007a, p. 2). In addition to the sheer increase in the volume of its emissions, CO₂ is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH₄, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2005, atmospheric levels of CH₄ were more than double pre-industrial levels, up to 1,774 parts per billion (ppb) as compared to 715 ppb (IPCC 2007a, p. 4). CH₄ has a relatively short atmospheric lifespan of only 12 years, but has a higher GWP than CO₂.

N₂O concentrations have increased from about 270 ppb in pre-industrial times to about 319 ppb by 2005 (IPCC 2007a, p. 4). Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. An atmospheric lifespan of 120 years increases the role of N₂O emissions in global warming.

Besides CO₂, CH₄, and N₂O, there are several gases and categories of gases that were not present in the atmosphere in pre-industrial times but now exist and contribute to warming. These include CFCs, used often as refrigerants, and their more stratospheric-ozone-friendly replacements, HFCs. Fully fluorinated species, such as SF₆ and tetrafluoromethane (CF₄), are present in the atmosphere in relatively small

⁶ SB 104, which directs the ARB to regulate nitrogen trifluoride (NF₃) and possibly other gases found to be at least as harmful as carbon dioxide was signed into law by Governor Schwarzenegger in October, 2009.

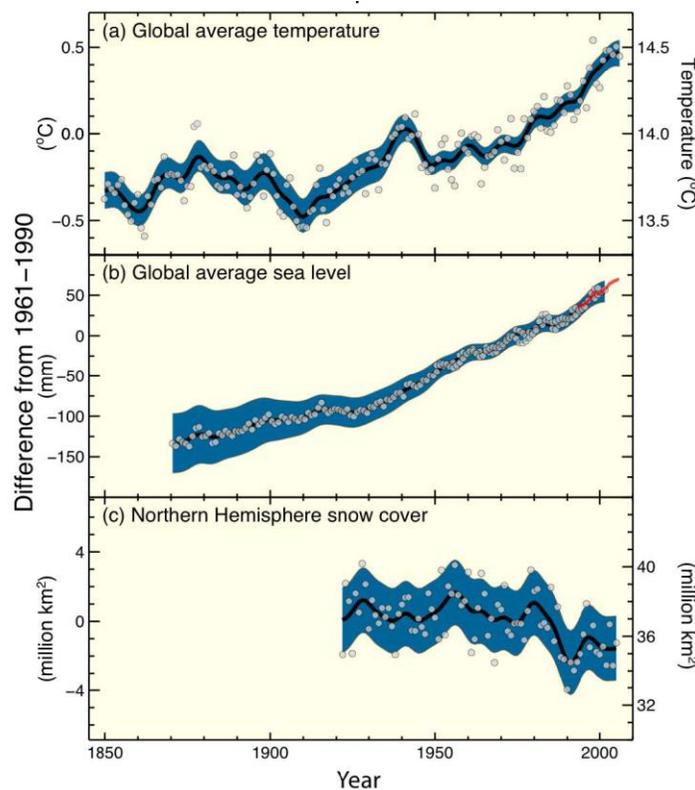
concentrations, but have extremely long life spans of 50,000 and 3,200 years each, making them potent GHGs.

Current and Projected Climatic Impacts of Global Warming

A strong indication that anthropogenic global warming is currently taking place is the fact that the top seven warmest years since the 1890s occurred after 1997. Furthermore, a warming of about 0.2 degrees Celsius per decade is projected by currently accepted models.

There is a scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. The impacts of global warming have already been demonstrated by substantial ice loss in the Arctic (IPCC 2007b). **Figure 5.7-2 – Global Warming Trends and Associated Sea Levels** shows the rise of global temperatures, the global rise of sea level, and the loss of snow cover from 1850 to the present.

Figure 5.7-2 – Global Warming Trends and Associated Sea Levels



Note: Global warming trends and associated sea level rise and snow cover decrease.

Source: IPCC 2007a, Figure SPM-3

5.7.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to GHG emissions may be considered potentially significant if the Project would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The first question requires an agency to determine what is a "significant impact" and the City must establish a threshold of significance against which to make that determination. As noted below, the amendments to the CEQA guidelines specifically allow lead agencies to determine thresholds of significance. This means that each agency is left to determine if a project's GHG emissions will have a "significant" impact on the environment. The Guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 CCR § 15064.4 (a)). In its Final Statement of Reasons for Regulatory Action accompanying the CEQA Amendments (FSOR), the CNRA explains that quantification of GHG emissions "is reasonably necessary to ensure an adequate analysis of GHG emissions using available data and tools" and that "quantification will, in many cases, assist in the determination of significance" (CNRA 2009a). However, as explained in the FSOR, the revised Section 15064.4 assigns lead agencies with the discretion to determine the methodology to quantify GHG emissions. The FSOR also notes that CEQA case law has long stated that "there is no iron-clad definition of 'significance.' Accordingly, lead agencies must use their best efforts to investigate and disclose all that they reasonably can regarding a project's potential adverse impacts" (Berkeley Jets)(see also discussion of CEQA Amendments in Section 5.7.3.4 below).

The CEQA Amendments do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. This discretion has been reviewed in CEQA cases and local agencies have been upheld for determining thresholds of significance (CREED; Oroville).

As with all determinations in preparing an EIR, pursuant to State *CEQA Guidelines* Section 15064.7(b), even without the express discretion to set the threshold as is the case here, the substantial evidence standard applies to an agency's determination of significance thresholds.⁷ Under Section 15384, substantial evidence is defined as "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." Under the substantial evidence standard, even if there is other information that supports another threshold, or a disagreement among experts as to what the significance threshold should be, so long as the agency decision is supported by substantial evidence, it will be supported even

⁷ Pursuant to 14 C.C.R. Section 15064.7(b); *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 375 (lead agency has discretion to formulate significance standards)(Eureka); *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 493 (Mira Mar).

if there is other substantial evidence or expert opinions to the contrary.⁸ As such, an agency selection of a significance threshold is upheld so long as it is based on substantial evidence.

Determining a threshold of significance for a project's climate change impacts poses a special difficulty for lead agencies. Much of the science in this area is new and is evolving constantly. At the same time, neither state nor local agencies specialize in this area, and there are currently no local, regional, or state thresholds for determining whether a development project within the South Coast Air Basin (Basin) has a "significant" impact on climate change. Although the CNRA has adopted the CEQA Amendments developed by OPR pursuant to SB 97, as discussed above, the CEQA Amendments do not prescribe specific significance thresholds, but instead leave considerable discretion to lead agencies to develop appropriate thresholds to apply to projects within their jurisdiction. AB 32 sets statewide reduction mandates but to date, the local air district, South Coast Air Quality Management District (SCAQMD), has not yet adopted GHG significance thresholds applicable to residential and mixed-use development. In light of direction to evaluate a project's impacts on climate change in CEQA documents, various agencies, including several air districts and the California Air Pollution Control Officers Association (CAPCOA), have released various guidance documents on determining the significance of climate change impacts under CEQA, which are discussed below in the impact analysis.

The second question under the CEQA Checklist is whether the project conflicts with an applicable GHG plan, policy or regulation. There are several potentially applicable plans and policies; however, the only adopted plan that is directly applicable to the Project is the Southern California Association of Governments 2012 Regional Transportation Plan/Sustainable Communities Strategy (SCAG's RTP/SCS), which is discussed in the analysis herein. As such, the City of Highland has selected consistency with SCAG's RTP/SCS as the significance threshold for evaluating the Project's GHG impacts. In addition to the Project's consistency with the RTP/SCS, the City also quantified and calculated the Project's GHG emissions to provide full disclosure of the Project's GHG impacts. The City compared these emissions to the reductions called for under AB 32, which is also an applicable plan and policy adopted for the purpose of reducing GHG emissions.

Finally, although it is possible to determine the significance of Project-specific impacts and the Project's specific contribution to climate change is quantitatively analyzed therein, the City recognizes that climate change is predominantly a cumulative impact and any attribution of climate change effects specific to one Project would be speculative. Specifically, AB 32 states, in part, that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." Global warming is the result of GHG emissions from countless sources worldwide, including the Project. As such, global climate change is ultimately a significant cumulative impact. Under CEQA, the City is required to determine whether the Project's contribution to a significant cumulative effect is cumulatively considerable. GHG emissions from the Project would contribute to cumulative GHG emissions and to the potential adverse cumulative environmental impacts of climate change.

⁸ Pursuant to *Laurel Heights Improvement Association v. Regents of University of California* (1988) 47 Cal.3d 376, 407 ("a court's proper role in reviewing a challenged EIR is not to determine whether the EIR's ultimate conclusions are correct but only whether they are supported by substantial evidence and whether the EIR is sufficient as an informational document").

Even though the Project is consistent with SCAG's RTP/SCS and achieves GHG emissions reductions consistent with AB 32 requirements, both plans require several actions by third party agencies to attain the state's goals of reducing GHG emissions. Accordingly, the City evaluated whether the Project's GHG emissions, along with those of other projects, would considerably contribute to a cumulatively significant adverse impact on climate change.

5.7.3 Related Regulations

An evolving body of laws, regulations, and case law, governs climate change and GHG emissions in California. Below are summaries of some of the key regulations; however, in no way is the discussion below exhaustive of this ever-growing body of regulation.

5.7.3.1 International

International Treaties and Other Developments

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. It was adopted in Kyoto, Japan, on December 11, 1997 and entered into force on February 16, 2005. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions. The targets amount to an average of five percent reduction levels against 1990 levels over the five-year period 2008-2012. The major distinction between the Protocol and the Convention is that while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. Recognizing that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities" (UN 1997).

Negotiations after Kyoto have continued in an attempt to address the period after the first "commitment period" of the Kyoto Protocol, concluded at the end of 2012. In Durban, South Africa, in 2011, parties to the protocol agreed in principle to negotiate a new comprehensive and legally binding climate agreement by 2015 and to enter it into force for all parties from 2020. However, significant divisions remain in determining the parameters of any such new protocol, including its enforcement mechanisms and the degree to which developing economies will begin to be subject to binding emissions targets.

5.7.3.2 Federal

Although the U.S. is not a party to the Kyoto Protocol, in 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18 percent by 2012 (NOAA). The goal did not establish any binding reduction mandates. Rather, the United States Environmental Protection Agency (USEPA) began to administer a variety of voluntary programs and partnerships with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs.

Supreme Court Ruling in *Massachusetts et al. v. Environmental Protection Agency*

The Bush Administration's approach to addressing climate change was challenged in *Massachusetts et al. v. Environmental Protection Agency*, 549 US 497 (2007). In this decision, the U.S. Supreme Court held that the USEPA was authorized by the Clean Air Act to regulate CO₂ emissions from new motor vehicles. (MASS). The Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances in which the USEPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On December 7, 2009, the USEPA issued an "endangerment finding" under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to greenhouse gas pollution (EPA ECCF). These findings provide the basis for adopting new national regulations to mandate GHG emission reductions under the federal Clean Air Act. The EPA's endangerment finding paved the way for federal regulation of GHGs.

It was expected that Congress would enact GHG legislation, primarily for a cap-and-trade system. However, proposals circulated in both the House of Representative and Senate were controversial and it may be some time before Congress adopts major climate change legislation. Under the Consolidated Appropriations Act of 2008 (HR 2764), Congress has established mandatory GHG reporting requirements for some emitters of GHGs. In addition, on September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires annual reporting to the EPA of GHG emissions from large sources and suppliers of GHGs, including facilities that emit 25,000 metric tons or more a year of GHGs.

The following four sections summarize USEPA's recent regulatory activities with respect to various types of GHG sources.

Mobile Sources

USEPA and NHTSA Joint Rulemaking for Vehicle Standards

In response to the *Massachusetts v. EPA* ruling discussed above, the Bush Administration issued an Executive Order on May 14, 2007, directing the USEPA, the Department of Transportation (DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008.

On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for passenger cars and light trucks in model years 2011 through 2015. The NHTSA issued a final rule for model year 2011 on March 30, 2009 (NHTSA 2009).

On May 7, 2010, the USEPA and the NHTSA issued a final rule regulating fuel efficiency and GHG pollution from motor vehicles for cars and light-duty trucks for model years 2012–2016 (EPA 2010). On May 21, 2010, President Obama issued a memorandum to the Secretaries of Transportation and Energy, and the Administrators of the USEPA and the NHTSA calling for establishment of additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. (GPO FR

2010), In response to this directive, USEPA and NHTSA issued a Supplemental Notice of Intent announcing plans to propose stringent, coordinated federal greenhouse gas and fuel economy standards for model year 2017-2025 light-duty vehicles (GPO FR 2011). The agencies proposed standards projected to achieve 163 grams/mile of CO₂ in model year 2025, on an average industry fleet wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. California has announced its support of this national program (CARB 2011a). The final rule was adopted in October 2012, and NHTSA intends to set standards for model years 2022-2025 in a future rulemaking (NHTSA 2012a, NHTSA 2012b).

Heavy-duty Engines and Vehicles Fuel Efficiency Standards

In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the USEPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014-2018 (EPA 2011b). USEPA and NHTSA have adopted standards for CO₂ emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to USEPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 percent to 23 percent.

Additional Federal GHG Rules and Policies

In addition to the rules and regulations developed with respect to stationary and mobile sources, discussed above, various other federal developments have occurred that aim to reduce GHGs from other sources, including land use activities.

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law (EISA). Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
3. While superseded by NHTSA and USEPA actions described above, EISA also set miles per gallon targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

CEQ NEPA Guidelines on GHG

On February 18, 2010, the White House Council on Environmental Quality published draft guidance on the consideration of greenhouse gases and climate change for NEPA analyses (CEQ 2010). It recommends that proposed federal actions that are reasonably expected to directly emit 25,000 MMTCO₂e/year should prepare a quantitative and qualitative NEPA analysis of direct and indirect GHG emissions.

The draft guidance provides reporting tools and instructions on how to assess the effects of climate change. The draft guidance does not apply to land and resource management actions, nor does it propose to regulate GHG. Although CEQ has not yet issued final guidance, various NEPA documents are beginning to incorporate the approach recommended in the draft guidance (NHTSA 2012b).

Voluntary programs

The USEPA administers a variety of voluntary programs and partnerships with GHG emitters in which the USEPA partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs.

For example, the USEPA's National Clean Diesel Campaign (NCDC) promotes diesel emission reduction strategies. The NCDC works to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local officials to reduce diesel emissions. NCDC activities include: developing new emissions standards for locomotive and marine diesel engines; and promoting the reduction of emissions for existing diesel engines, including use of cleaner fuels, retrofitting and repairing existing fleets, idling reduction among others. The USEPA also administers the State and Local Climate and Energy Program that provides technical assistance, analytical tools, and outreach support to state, local, and tribal governments⁹ (EPA NCDC).

Other applicable regulations and policies

In addition to the federal regulations and programs described above, there are still more policies and programs to address climate change. A database compiled by the International Energy Agency lists more than 300 policies and measures addressing climate change in the United States (IEA).

5.7.3.3 Multi-State/Regional

The Western Regional Climate Action Initiative (WCI)

The Western Regional Climate Action Initiative (WCI) is a partnership among seven states, including California, and four Canadian provinces to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. The WCI will cap GHG emissions from the region's electricity, industrial, and transportation sectors with the goal to reduce the heat trapping emissions that cause global warming to 15 percent below 2005 levels by 2020. When the WCI adopted this goal in 2007, it estimated that this would require 2007 levels to be reduced worldwide between 50 and 85 percent by 2050. California is working closely with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. The California Air Resources Board (ARB's)

⁹ For example: State and Local Climate and Energy Program: <http://www.epa.gov/statelocalclimate/index.html>.

planned cap and-trade program, discussed below, is also intended to link California and the other member states and provinces.

Pacific Coast Action Plan on Climate and Energy

On October 28, 2013, the Governors of California, Oregon, and Washington and the Premier of British Columbia signed a clean energy pact, known as the Pacific Coast Action Plan on Climate and Energy (Action Plan). Although the Action Plan does not impose legally enforceable obligations and lacks a specific schedule for implementation, the pact sets out a number of goals and aspirational measures. The Action Plan calls upon each of the parties to undertake a number of measures to address the use of carbon-based fuels in the transportation sector, including the adoption or maintenance of low-carbon fuel standards, the development of targets and action plans in order to encourage public and private investment in low-carbon commercial fleets that use alternative fuels, and the expansion of the sale of zero-emissions vehicles to a goal of ten percent of new vehicle purchases by 2016.

5.7.3.4 State

California has adopted various administrative initiatives and also enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents prepared under CEQA. In particular, the amendments to the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or thresholds of significance, and do not specify GHG reduction mitigation measures. Instead, the CEQA amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below (CNRA 2009c). In addition, no state agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents. Thus, lead agencies exercise their discretion determining how to analyze GHGs.

The discussion below provides a brief overview of ARB and OPR documents and of the primary legislation that relates to climate change that may affect the emissions associated with the proposed Project. It begins with an overview of the primary regulatory acts that have driven GHG regulation and analysis in California.

Executive Order S-3-05 (Statewide GHG Targets)

California Executive Order S-3-05 (June 1, 2005) established GHG emissions targets for the State, as well as a process to ensure the targets are met. As a result of this Executive Order, the California Climate Action Team, led by the Secretary of the California Environmental Protection Agency, was formed. The California Climate Action Team reported several recommendations and strategies for reducing greenhouse gas emissions and reaching the targets established in the Executive Order. The greenhouse gas targets are as follows:

- By 2012, reduce to 2000 emission levels;
- By 2020, reduce, to 1990 emission levels; and
- By 2050, reduce to 80 percent below 1990 levels.

Senate Bill 375 and SCAG Regional Transportation Plan/Sustainable Community Plan

SB 375 provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32 (SB 375). SB 375 includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 also requires Metropolitan Planning Organizations (MPOs) relevant to the Project area (including SCAG) to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans (RTPs) that will achieve GHG emission reduction targets by reducing vehicle miles traveled (VMT) from light duty vehicles through development of more compact, complete, and efficient communities. This VMT reduction goal is the reduction goal most targeted at land use decision making at issue in the City's determination of approving the Project.

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transportation, which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by MPOs working in cooperation with Councils of Governments. The Scoping Plan, adopted by ARB in December of 2008, relies on the requirements of SB 375 to implement the carbon emissions reductions anticipated from land use decisions.

On September 23, 2010, ARB adopted Regional Targets for the reduction of GHG applying to the years 2020 and 2035 (CARB 2010c). For the area under SCAG's jurisdiction, including the Project area, ARB adopted Regional Targets for reduction of GHG emissions by 8 percent for 2020 and by 13 percent for 2035. On February 15, 2011, the ARB's Executive Officer approved the final targets (CARB 2011b).

SCAG's SCS is included in the SCAG 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2012a). The document was adopted by SCAG in April 2012. The goals and policies of the RTP/SCS that reduce VMT focus on transportation and land use planning that include building infill projects, locating residents closer to where they work and play and designing communities so there is access to high quality transit service.

The RTP/SCS adopts land use patterns at the jurisdictional level (SCAG 2012b). The modeling analysis underlying the RTP/SCS is based on SCAG's growth forecast data for population and housing by areas divided into "transportation analysis zones" (TAZ). The Project is located in TAZ numbers 53848200, 53848300, and 53872200. SCAG's growth forecasting data assumes that this TAZ area will grow by 3,500 residential units and 1,248 new jobs by the year 2035.

Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature. The law instructs ARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. AB 32 directed ARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner (AB 32).

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. The bill required ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. ARB accomplished the key milestones set forth in AB 32 including the following:

- June 30, 2007. Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, ARB satisfied this requirement by approving three early action measures (CARB 2007b). These were later supplemented by adding six other discrete early action measures (CARB 2007c).
- January 1, 2008. Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, ARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline (CARB 2007a).
- January 1, 2009. Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, ARB adopted Climate Change Scoping Plan: A Framework for Change (Scoping Plan), discussed in more detail below (CARB 2008a).
- January 1, 2010. Adoption and enforcement of regulations to implement the "discrete" actions. Several early action measures have been adopted and became effective on January 1, 2010 (CARB 2007b, CARB 2007c).
- January 1, 2011. Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, ARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions (CARB 2010e). ARB's Board ordered ARB's Executive Director to prepare a final regulatory package for cap-and-trade on December 16, 2010 (CARB 2010f).
- January 1, 2012. GHG emissions limits and reduction measures adopted in 2011 become enforceable.

As noted above, on December 11, 2008, ARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various categories of emissions. ARB determined that achieving the 1990 emission level would require a reduction of GHG emissions of by approximately 28.5 percent to achieve in 2020 emissions levels in the absence of new laws and regulations (referred to as "business as usual" or "No Action Taken" (NAT)). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all ARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan include: (CARB 2008a)

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable 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 and caps sources contributing 85 percent of California's GHG emissions;
- 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 existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted 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 of California's long-term commitment to AB 32 implementation.

In 2009, a coalition of environmental groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document") violated CEQA by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment ordering that ARB take no further action with respect to cap and trade rulemaking until it complies with CEQA (AIR). ARB appealed the decision on May 23, 2011 (CARB 2011d). The portions of the Scoping Plan that do not relate to cap and trade remained valid during the litigation. While the appeal was pending, ARB prepared a supplement to the Functional Equivalent Document that included the analysis that the trial court had determined was inadequate under CEQA. ARB certified the supplement to the Functional Equivalent document and readopted the Scoping Plan on August 24, 2011 (CARB 2011e). On June 19, 2012, the California First District Court of Appeal upheld the Scoping Plan and affirmed ARB's approval of the Scoping Plan as in compliance with AB 32 (AIR 2012).

In connection with preparation of the supplement to the Functional Equivalent Document, ARB released revised estimates of the expected 2020 emission reductions in consideration of the economic recession and the availability of updated information from development of measure-specific regulations. Incorporation of revised estimates in consideration of the economic recession reduced the projected 2020 emissions from 596 MMTCO₂e to 545 MMTCO₂e (CARB 2011c). Under this scenario, achieving the 1990 emissions level would require a reduction of GHG emissions of 118 MMTCO₂e, or 21.7 percent (down from 28.5 percent), to achieve in 2020 emissions levels in the "business as usual" condition. The 2020 AB 32 baseline was also updated to account for measures incorporated into the inventory, including Pavley (vehicle model-years 2009 - 2016) and the renewable portfolio standard (12% - 20%). Inclusion of these measures further reduced the 2020 baseline to 507 MMTCO₂e. As a result, based on both the economic recession and the availability of updated information from development of measure-specific regulations, achieving the 1990 emission level would now require a reduction of GHG emissions of 80 MMTCO₂e or a reduction by approximately 16 percent (down from 28.5 percent) to achieve in 2020 emissions levels in the "business as usual" or NAT condition (CARB 2011c, 2011f).

On October 1, 2013, ARB released a discussion draft first update to the Scoping Plan. The discussion draft recalculates 1990 GHG emissions using IPCC Fourth Assessment Report (AR4) released in 2007. The first draft update to the Scoping Plan states that based on the AR4 global warming potentials, the 427 MMTCO₂e 1990 emissions level and 2020 GHG emissions limit would be slightly higher than identified in the Scoping Plan, at 431 MMTCO₂e (CARB 2013). Based on (1) the revised estimates of expected 2020 emissions identified in the 2011 supplement to the Functional Environmental Document, and (2) updated 1990 emissions levels identified in the draft first update to the Scoping Plan, achieving the 1990 emission level would require a reduction of 76 MMTCO₂e (down from 507 MMTCO₂e) or a reduction by approximately 15 percent (down from 28.5 percent) to achieve in 2020 emissions levels in the "business as usual" or NAT condition (CARB 2011c, 2011f, 2013).

It is important to note that the 28.5 percent goal is utilized in spite of the fact that the Scoping Plan attributes only 8 percent of the 2020 NAT emissions inventory to the commercial and residential sector, and allocates only relatively minimal emission reduction obligation to the land use sector. The only measure particularly aimed at the land use sector—regional transportation-related GHG targets—sets a 5 MMTCO₂e reduction goal, which represents less than 3 percent of the 169 MMTCO₂e necessary reductions under AB 32.

CEQA Guidelines

Senate Bill 97 (CEQA Guidelines)

SB 97 required OPR to prepare amended CEQA Guidelines for submission to the CNRA regarding GHG analysis and feasible mitigation of the effects of GHG emissions as required by CEQA. These amendments became effective as of March 18, 2010. The adoption of SB 97 and subsequent CEQA amendments are widely recognized as confirmation that lead agencies are required to include an analysis of climate change impacts in CEQA documents.

CEQA Amendments

The CEQA Amendments adopted pursuant to SB 97 state in Section 15064.4(a) that lead agencies should "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. Section 15064.4(a) notes that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (CNRA 2009c). Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (CNRA 2009c).

In addition, Section 15064.7(c) of the CEQA Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (CNRA 2009c). Similarly, the revision to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would conflict with a plan, policy or regulation adopted to reduce GHG emissions; or generate GHG emissions that would significantly affect the environment, indicating that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Amendments do not prescribe specific methodologies for performing an assessment of GHG impacts, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009c).

The CEQA Amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. As pertinent to a project, these potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures (CNRA 2009c).

Among other things, the CRNA noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states:

While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CRNA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable. (CNRA 2009d)

Thus, the CEQA Amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

Energy-Related Sources

Renewable Portfolio Standards (SB 1078, SB 107 and SBX1-2)

Established in 2002 under SB 1078, and accelerated in 2006 under SB 107 and again in 2011 under SBX1-2, California's Renewable Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. (SB 1078, SB 1368, AIR). The 33 percent standard is consistent with the RPS goal established in the Scoping

Plan (CARB 2008a). As interim measures, the RPS requires 20 percent of retail sales to be sourced from renewable energy by 2013, and 25 percent by 2016. Initially, the RPS provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to RPS (AIR). The expected growth in RPS to meet the standards in effect in 2008 is not reflected in the "business as usual" (BAU) calculation in the AB 32 Scoping Plan, discussed below. In other words, the Scoping Plan's BAU 2020 does not take credit for implementation of RPS that occurred after its adoption (CARB 2008b).

GHG Emissions Standard for Baseload Generation (SB 1368)

Senate Bill 1368 (SB 1368) (September 29, 2006) prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard applies to electricity generated both within and outside of California, and to publicly owned as well as investor-owned electric utilities.

Mobile Sources

Mobile Source Reductions (AB 1493)

Assembly Bill 1493 ("the Pavley Standard" or AB 1493) required ARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 through 2016. The bill also required the California Climate Action Registry to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by ARB in granting emission reduction credits. The bill authorizes ARB to grant emission reduction credits for reductions of GHG emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, ARB applied to the USEPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the USEPA in December 2007 after California filed suit to prompt federal action. In January 2008, the State Attorney General filed a new lawsuit against the USEPA for denying California's request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Barack Obama issued a directive to the USEPA to reconsider California's request for a waiver. On June 30, 2009, the USEPA granted the waiver to California for its GHG emission standards for motor vehicles. As part of this waiver, USEPA specified the following provision: ARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by a manufacturer for the 2009 model year. ARB has adopted a new approach to passenger vehicles (cars and light trucks), by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. These standards will apply to all passenger and light duty trucks used by residents, employees of and deliveries to the proposed Project.

Low Carbon Fuel Standard

Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009 (ARB 2009). In 2009, ARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified at Title 17, CCR, Sections 95480-95490. The LCFS will reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the district court's rulings preliminarily enjoined the ARB from enforcing the regulation. In January 2012, ARB appealed that decision to the Ninth Circuit Court of Appeals. On September 18, 2013, the Ninth Circuit issued its decision affirming the District Court's conclusion that LCFS ethanol and initial crude-oil provisions are not facially discriminatory, but remanded to the District Court to determine whether the LCFS ethanol provisions are discriminatory in purpose and effect. Additionally, the Ninth Circuit remanded to the District Court with instructions to vacate the preliminary injunction against ARB's enforcement of the regulation (Rocky Mountain).

Clean Cars

In January 2012, ARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Building Standards

Green Building Code (California Code of Regulations, Title 24)

Energy Conservation Standards for new residential and commercial buildings were originally adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24 CCR Part 6 [CCR, 2008]). In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2006 Appliance Efficiency Regulations (Title 20 CCR §1601-1608), dated December 2006, were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally-regulated appliances and non-federally regulated appliances. While these regulations are now often seen as "business as usual" in California, they do exceed the standards imposed by any other state and reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24 CCR). Part 11 establishes voluntary standards on

planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Some of these standards became mandatory in the 2010 edition of the Part 11 Code. (CalGreen 2010).

The California Energy Commission adopted changes to the 2013 Building Energy Efficiency Standards contained in Title 24 CCR Part 6 (also known as the California Energy Code) on May 31, 2013, and associated administrative regulations in Part 1 (collectively referred to here as the Standards). The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction.¹⁰ The standards, which take effect on January 1, 2014, will offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.

Senate Bill 1

Senate Bill 1 of 2006 (SB 1) established the statewide California Solar Initiative, also required the CEC to implement regulations that require sellers of production homes to offer a solar energy system option to all prospective homebuyers. Besides offering solar as an option to prospective homebuyers, sellers of homes constructed on land for which an application for a tentative subdivision map has been deemed complete on or after January 1, 2011, must disclose to the prospective homebuyer the total installed cost of the solar option, the estimated cost savings associated with the solar energy system option, information about California solar energy system incentives, and information about the Go Solar California website. Sellers of production homes affected by this law may opt for the solar offset program rather than offer solar as an option to prospective homebuyers. The solar offset program requires sellers to install a solar system elsewhere which is equivalent to the aggregate capacity of solar that would have been installed in an affected subdivision if 20% of the buyers had opted for the solar option.

Waste Diversion

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code Sections 40000 *et seq.*) requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; and (2) diversion of 50 percent of all solid waste on and after January 1, 2000, through source reduction, recycling, and composting facilities.¹¹ Additionally, jurisdictions are not prohibited from implementing source reduction, recycling, and composting activities designed to exceed these requirements.¹²

Assembly Bill 341 (2011)(AB 341) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually

¹⁰ Available at http://www.energy.ca.gov/releases/2012_releases/2012-05-31_energy_commission_approves_more_efficient_buildings_nr.html, accessed October 2013.

¹¹ Cal. Pub. Res. Code § 41780(a).

¹² Cal. Pub. Res. Code § 41780(b).

thereafter.¹³ In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal.¹⁴ CalRecycle conducted several stakeholder workshops and published a discussion document in May 2012 titled *California's New Goal: 75 Percent Recycling*, which identifies concepts that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.¹⁵

5.7.3.5 Regional

South Coast Air Quality Management District Policies

CEQA Guidelines and Proposed GHG Thresholds

SCAQMD is principally responsible for comprehensive air pollution control in the South Coast Air Basin, which includes Los Angeles, Orange, and the urbanized portions of Riverside and San Bernardino Counties, including the Project site. SCAQMD works directly with SCAG, County transportation commissions, and local governments and cooperates actively with all federal and state government agencies to regulate air quality.

In April 2008, SCAQMD convened a Working Group to develop GHG significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for industrial projects where the SCAQMD is the lead agency (SCAQMD 2008).

For all other projects, SCAQMD staff proposed a multiple tier analysis to determine the appropriate threshold to be used. The draft proposal suggests the following tiers: Tier 1 is any applicable CEQA exemptions, Tier 2 is consistency with a GHG reduction plan, Tier 3 is a screening value or bright line, Tier 4 is a performance based standard, and Tier 5 is GHG mitigation offsets (SCAQMD 2008). According to the presentation given at the September 28, 2010 Working Group meeting, SCAQMD staff proposed a Tier 3 draft threshold of 1,400 to 3,500 MT CO₂e/year depending on if the project was commercial, mixed use or residential. For the Tier 4 draft threshold SCAQMD staff presented a percent emission reduction target option but did not provide any specific recommendation for a percent emission reduction target; instead it referenced the San Joaquin Valley Air Pollution Control District (SJVAPCD) approach. The percent reduction target is based on consistency AB 32 as it was based on the same numeric reductions calculated in the Scoping Plan to reach 1990 levels by 2020. The second Tier 4 option is to utilize an efficiency target for 2020 of 4.8 metric tons per service population per year for project level thresholds (SCAQMD 2010).

The Working Group has not convened since the fall of 2010. As of October 2013, the proposal has not been considered or approved for use by the SCAQMD Board. In the meantime, no GHG significance thresholds are approved for use in the Basin.

Criteria Pollution Regulations

The SCAQMD administers a plethora of air quality regulations that control the emission of criteria pollutants and maintain or seek to achieve air quality standards for criteria pollutant and Toxic Air Contaminants (TAC) set by the federal and state Clean Air Acts. Unlike GHG, criteria pollutants and TACs

¹³ Cal. Pub. Res. Code § 41780.01(a).

¹⁴ Cal. Pub. Res. Code § 41780.02.

¹⁵ Available at <http://www.calrecycle.ca.gov/75percent/Plan.pdf> (last accessed September 2013).

have localized rather than global impacts. The Basin is home to half the population of the State of California and is the second most populated area in the United States and one of the worst in the country for air pollution (SCAQMD About). As such, the SCAQMD undertakes a tremendous effort to control air pollution and improve the air quality for the health of its residents. The goal of reducing criteria and TAC pollutants can sometimes have the co-benefit of reducing GHG emissions, for example through zero emission technologies. However, some methods of reducing criteria and TAC pollutants may in fact increase the amount of GHG emissions because the technologies increase. The SCAQMD is the regional agency who weighs and balances the sometimes competing interests and makes the policy decisions as to prioritizing air quality reductions.

County of San Bernardino Greenhouse Gas Emissions Reduction Plan

The *County of San Bernardino Greenhouse Gas Emissions Reduction Plan* ("County Reduction Plan")(County 2011) was prepared pursuant to a settlement with the California Attorney General's Office, which required the County to prepare a GHG Emissions Reduction Plan and to amend the County's General Plan to add a policy describing the County's goal of reducing GHG emissions reasonably attributable to the County's discretionary land use decisions (i.e., "external" emissions) and the County's government operations (i.e., "internal" emissions). The County Reduction Plan identifies actions designed to reduce the County's internal and external GHG emissions to 15 percent below current levels by 2020, consistent with the AB 32 Scoping Plan. The GHG Reduction Plan includes a GHG emissions inventory for both internal and external emissions for the present (2007) year and future 2020 year under "business as usual" or unmitigated conditions. The County Reduction Plan establishes a goal to "reduce current GHG emissions from activities over which the County has jurisdictional and operational control by at least 15% by 2020." Additionally, the County Reduction Plan identifies goals, objectives, and strategies to enable the County to achieve the GHG reduction goal.

In accordance with the terms of the settlement with the Attorney General, the County of San Bernardino General Plan Conservation Element now includes Policy CO 4.13 (Reduce GHG emissions within County boundaries). Policy CO 4.13 states that the County will prepare GHG emissions inventories and a GHG Emissions Reduction Plan.¹⁶

San Bernardino County Regional Greenhouse Gas Reduction Plan (Draft)

In June 2013, the San Bernardino Associated Governments (SANBAG) released a draft Regional Greenhouse Gas Reduction Plan, which summarizes the actions that each city has selected in order to reduce GHG emissions, state-mandated actions, GHG emissions avoided in 2020 associated with each local and state action, and each city's predicted progress towards their selected GHG reduction goals.

Each city has selected a goal to reduce their community GHG emissions from BAU levels by the year 2020. Each city has selected their goal based on what each city considers feasible given the local conditions within that city.

The City of Highland has selected a goal to reduce its community GHG emissions to a level that is 22% below its projected emissions in 2020. The City will meet and exceed this goal subject to reduction measures that are technologically feasible and cost-effective per AB 32 through a combination of state

¹⁶ Available at <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGPtext20130718.pdf> (accessed September 29, 2013).

and local efforts. The City actually exceeds the goal with only state/county level actions, but has committed to several additional local measures. The Pavley vehicle standards, the state’s low carbon fuel standard, the RPS, and other state measures will reduce GHG emissions in Highland’s on-road, solid waste, and building energy sectors in 2020. An additional reduction of 39,355 MTCO₂e will be achieved primarily through measures related to solar energy, SmartBus technologies and wastewater treatment, as well as a performance standard for new development that seeks to achieve a 29% reduction below projected BAU emissions for new projects. The City of Highland staff who worked on this draft plan have confirmed that the project’s 28.5% reduction is consistent with the 29% reduction listed in the draft SANBAG Plan.

**5.7.3.6 Local
City of Highland General Plan**

The City of Highland General Plan, adopted in March 2006, includes policies regarding the reduction of GHG impacts. The primary goal is to reduce mobile-and stationary-source air pollutant emissions through cooperation and endorsement of the San Bernardino Regional Air Quality Plan and support feasible techniques, incentives, and regulatory measures to achieve significant air quality improvements and any necessary air quality related lifestyle and economic changes while sustaining continued economic growth. The following table identifies policies in the City's General Plan that are relevant to the proposed project, and analyzes the Project's consistency with these policies.

General Plan Goal, Policy	Analysis of Project Consistency
Land Use Element	
<p>Goal 2.10, Policy 3: Provide access to multiple modes of travel, including pedestrian, bicycle, transit and automobile.</p>	<p>Although this is a municipal measure specifically related to the Town Center area of the City that is not within the Project site, the Project is designed as a walkable, integrated community where uses are connected by a network of trails and pathways encouraging walking and biking throughout the community. An integrated system of pedestrian pathways and bikeways allows residents to access public and private recreation, neighborhood commercial services, and public facilities.</p>
Circulation Element	
<p>Goal 3.4, Policy 11: Encourage and improve pedestrian connections from residential neighborhoods to retail activity centers, employment centers, schools, parks, open space areas and community centers.</p>	<p>The Project includes residential uses, a neighborhood commercial center, approximately 834 acres of parks, recreation, and open space, and public facilities. An integrated system of pedestrian pathways and bikeways allows residents to access public and private recreation, neighborhood commercial services, and public facilities.</p>
<p>Goal 3.5: Promote bus service and paratransit improvements.</p>	<p>The Project site is located within the Omnitrans service area. The Project's Specific Plan includes two designated bus locations for Omnitrans bus stops, which are designed to promote transit ridership to and</p>

General Plan Goal, Policy	Analysis of Project Consistency
	from the Project (See Figure 3-10 – Project Trail and Public Transportation System).
Goal 3.7: Protect and encourage bicycle travel.	The Project is designed to encourage biking throughout the community. Bicycle access is provided via a system of on-street and off-street bicycle trails and lanes.
Goal 3.7, Policy 1: Develop a system of continuous and convenient bicycle routes to places of employment, shopping centers, schools, and other high activity areas with potential for increased bicycle use.	The Project includes residential uses, a neighborhood commercial center, approximately 834 acres of parks, recreation, and open space, and public facilities. The Project is designed to encourage biking throughout the community so residents can access public and private recreation, neighborhood commercial services, and public facilities. Bicycle access is provided via a system of on-street and off-street bicycle trails and lanes.
Public Services and Facilities Element	
Goal 4.5, Policy 3: Reduce the volume of solid waste material sent to landfills by continuing source reduction, recycling and composting programs in compliance with State law and encouraging the participation of all residents and businesses in these programs.	Pursuant to Highland Municipal Code Sections 8.12.010 <i>et seq.</i> (Integrated Waste Management), the City provides for or furnishes integrated waste management services relating to collection of refuse, recyclable, and compostables within and throughout the city. Under the Municipal Code, franchisees are required to implement measures to achieve the City's solid waste and recycling goals mandated by the California Integrated Waste Management Act of 1989. All single-family residences in the City are provided with three 95-gallon waste carts for trash, recycling, and green waste. ¹⁷ All residential and commercial uses within the project will participate in the City's recycling program, and franchisees serving the project will be required to implement measures to support the City's waste reduction and recycling goals. For attached units, recycling bins will be located within common areas.
Public Health and Safety Element	
Goal 6.8, Policy 7: Support current incentive programs that recognize and reward developments using new and innovative emission reduction techniques such as innovative efficient window glazing, wall insulation, and ventilation systems; efficient air conditioning, heating, and appliances; use of passive solar design, and solar heating systems; use of energy cogeneration and/or use of waste energy; and landscape techniques	Although this Goal is a municipal measure, the Project's land use plan is designed to reduce GHG emissions by providing an integrated system of pedestrian pathways and bikeways that allows residents to access public and private recreation, neighborhood commercial services, and public facilities. In addition, approximately 834 acres of the Project site, representing more than half of the community, are reserved for parks, recreation, and

¹⁷ See <http://publicservices.cityofhighland.org/Trash/> (accessed September 28, 2013).

General Plan Goal, Policy	Analysis of Project Consistency
<p>that reduce water consumption and provide passive solar benefits.</p>	<p>open space.</p> <p>Additionally, the following Project design features include innovative emission reduction techniques:</p> <ul style="list-style-type: none"> • The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units; • Residential and non-residential buildings will be 35 percent more energy efficient than the 2008 Title 24 part 6 building code; • The Project will reduce potable water use by 20 percent compared to baseline water use levels through the use of water saving fixtures and or flow restrictors; • The Project will use non-potable water to satisfy a portion of its demand for outdoor irrigation-related water; • Where appliances are offered by homebuilders, Energy Star appliances will be installed in the residences; • Public street lighting will use LED technology; • The Project will include solar panels that cover 60 percent of the commercial building roof areas; • The Project will incorporate third party HVAC commissioning for all residential and non-residential land uses; and • The Project will include radiant (white) roofs for residential land uses.
<p>Goal 6.8, Policy 9: Reduce work trips in the City and peak period auto travel by enforcing the City's Transportation Demand Ordinance; supporting current staggered, flexible, and compressed work schedules in public agencies; working with private agencies to encourage work schedule flexibility programs for employers with more than 25 employees in a single location; educating City residents on the advantages of ride sharing and public transit; and encouraging the development of job-intensive uses within designated employment centers for local residents.</p>	<p>Although this is a municipal measure, the Project will provide residents with information about public transit when they move into the Project. Additionally, educational materials about public transit and advantages of ride sharing will be distributed in the Project's community center.</p>

General Plan Goal, Policy	Analysis of Project Consistency
<p>Goal 6.8, Policy 10: Reduce vehicle emissions by supporting the design and implementation of the Citywide system of bikeways and pedestrian trails as a non-polluting circulation alternative by requiring as part of the development review process the installation of planned bicycle routes, paths, and lanes where designated; and the construction of necessary bicycle parking and storage areas within convenient commercial, employment and recreation activity areas.</p>	<p>Sidewalks connecting residential neighborhoods with parks and community facilities are planned within the public rights-of-way of roadways within the Specific Plan area. An off-street multi-use trail connects residential areas to open space areas within the community and to off-site regional trails and recreational amenities. The network of sidewalks and multi-use trails planned for Harmony provides bicycle and pedestrian connectivity to all areas within the community and between Harmony and surrounding parks, recreational trails, open space, and activity centers. Bicycle access is provided via a system of on-street and off-street bicycle trails and lanes.</p>
<p>Conservation and Open Space Element</p>	
<p>Goal 5.17, Policy 1: Encourage energy and environmentally sustainable designs in the design and approval of new projects.</p>	<p>The Project is designed as an environmentally sustainable, mixed-use development pursuant to CALGreen standards. The Project includes residential uses, a neighborhood commercial center, approximately 834 acres of parks, recreation, and open space, and public facilities. An integrated system of pedestrian pathways and bikeways allows residents to access public and private recreation, neighborhood commercial services, and public facilities.</p> <p>Additionally, the Project includes design features, above, listed under Goal 6.8, Policy 7 that reduce and conserve energy use.</p>
<p>Goal 5.17, Policy 5: Encourage landscape design that cools buildings and blocks solar rays, such as the planting of deciduous trees on south and west facing elevations, and give Title 24 credit for landscaping.</p>	<p>The Project includes approximately 834 acres of parks, recreation, and open space, including approximately 112 acres of community greenway. The community greenway incorporates linear open spaces within the Project that contain drainage swales, off-road walking and bicycling trails, areas for environmental mitigation, and other landscaped areas. The site is designed to provide shade that cools buildings and blocks solar rays.</p>
<p>Goal 5.19, Policy 1: Reduce locally generated emissions through traffic flow improvements (including signal synchronization) and construction management practices.</p>	<p>Although this is a municipal measure, the Project design incorporates traffic calming features, such as traffic roundabouts and narrowed streets to reduce vehicle speeds.</p>
<p>Goal 5.19, Policy 2: Encourage the use of public transit within the City through coordination with regional transit providers and publication of routes and</p>	<p>Although this is a municipal measure, the Project site is located within the Omnitrans service area. The Project's specific plan includes two designated bus</p>

General Plan Goal, Policy	Analysis of Project Consistency
timetables on the city website and publications.	<p>locations for Omnitrans bus stops, which are designed to promote transit ridership to and from the Project.</p> <p>The Project will provide residents with information about public transit when they move into the Project, through the Homeowners Association. Additionally, educational materials about public transit and advantages of ride sharing will be distributed in the Project's community center.</p>
<p>Goal 5.19, Policy 3: Encourage land use planning and design that reduces vehicle trips through mixed and multi-use development, consolidation of commercial development along major arterials, provision of pedestrian connections from residential to retail areas, and development of multi-use Town Center.</p>	<p>The Project includes residential uses, a neighborhood commercial center, approximately 834 acres of parks, recreation, and open space, and public facilities. An integrated system of pedestrian pathways and bikeways allows residents to access public and private recreation, neighborhood commercial services, and public facilities.</p>
<p>Goal 5.19, Policy 4: Establish performance standards for clustering residential areas near commercial services where mixed use is not feasible.</p>	<p>Although this is a municipal measure, the Project includes residential uses and a neighborhood commercial center. The neighborhood commercial center provides retail goods and services to residences within the Project site and to nearby residential areas. The neighborhood commercial center is designed to provide basic retail goods and services (e.g., gas station or drug store), other personal services (e.g., dry cleaners, video stores) or other convenience goods and services or pad site uses.</p>
Community Design Element	
<p>Goal 10.5, Policy 8: Link newly developed retail activity centers, where practical, to surrounding residential or office uses through clear and safe pedestrian and bicycle connections.</p>	<p>An integrated system of pedestrian pathways and bikeways allows residents to access the Project's neighborhood commercial center, which is designed to provide basic retail goods and services (e.g., gas station or drug store), other personal services (e.g., dry cleaners, video stores) or other convenience goods and services or pad site uses.</p>
<p>Goal 10.12: Encourage development that is energy efficient and environmentally sustainable.</p>	<p>The Project is designed as an environmentally sustainable, mixed-use development pursuant to CALGreen standards. The Project includes residential uses, a neighborhood commercial center, approximately 834 acres of parks, recreation, and open space, and public facilities. An integrated system of pedestrian pathways and bikeways allows residents to access public and private recreation, neighborhood commercial services, and public facilities.</p>

General Plan Goal, Policy	Analysis of Project Consistency
	Additionally, the Project includes design features, listed under Goal 6.8, Policy 7 that reduce and conserve energy use.
Goal 10.12, Policy 5: Encourage transit-oriented, infill development that makes efficient use of existing land.	The Project site is located within the Omnitrans service area. The Project's Specific Plan includes two designated bus locations for Omnitrans bus stops, which are designed to promote transit ridership to and from the project. The bus stops are strategically located and planned to be incorporated within an extensive network of bike trails and pedestrian walkways connecting core commercial areas with residential, schools, parks, and open space. Reduced auto trips will result from the inclusion of these alternate modes of travel.
Goal 10.12, Policy 6: Encourage site planning and building orientation that maximizes solar and wind resources for cooling and heating.	Commercial buildings within the Project will be designed to accommodate 60 percent coverage for solar panels. Additionally, the Project design will be consistent with the 2010 California Green Building Code, which encourages orienting buildings to allow solar and wind options where feasible.
Goal 10.13, Policy 4: Link newly developed commercial centers, where practical, to adjoining residential uses.	An integrated system of pedestrian pathways and bikeways allows residents in the Project and in nearby areas to access the Project's neighborhood commercial center, which is designed to provide basic retail goods and services (e.g., gas station or drug store), other personal services (e.g., dry cleaners, video stores) or other convenience goods and services or pad site uses.

City of Highland Municipal Code

Title 8, Chapter 12, Section 8.12.010 et. seq.: Integrated Waste Management; Recycling

- Establishes that the city shall provide for or furnish integrated waste management services relating to collection of refuse, recyclable, and compostables within and throughout the city. Authorizes the city council to award franchises, contracts, and/or permits for refuse collection from residential properties and for commercial refuse collection. Requires franchisees to implement measures to achieve the city's solid waste and recycling goals mandated by the California Integrated Waste Management Act of 1989. All single-family residences in the City are provided with three 95-gallon waste carts for trash, recycling, and green waste.¹⁸

¹⁸ See <http://publicservices.cityofhighland.org/Trash/> (accessed September 28, 2013).

Title 8, Chapter 8.40, Section 8.40.010 et. seq.: Mobile Source Emission Reduction Program

- Participate in the SCAQMD's imposition of the vehicle registration fee to bring the City into compliance with the requirements set forth in Section 44243 of the Health and Safety Code in order to receive fee revenues for the purposes of implementing programs to reduce air pollution from motor vehicles. Expend all revenues received from SCAQMD exclusively on mobile source emissions programs, defined in Municipal Code Section 8.40.020 as any program or project implemented by the City to reduce air pollution from motor vehicles consistent with the California Clean Air Act of 1988 or the SCAQMD Air Quality Management Plan (AQMP).

Title 16, Chapter 16.40, Section 16.40.470: Transportation Control Measures

- Implements the control measures of both the 1991 SCAQMD and the 1992 Federal Attainment Plan for Carbon Monoxide. Control measures include installation of bicycle racks for all new nonresidential and multifamily developments, on-site pedestrian walkways and bicycle pathways connected from nonresidential and multifamily buildings to adjacent public streets, shower facilities for developments that exceed specified thresholds, passenger loading facilities, vanpool parking facilities, transit improvements, telecommuting centers, video conferencing facilities, reduced parking requirements, and participation in implementation of the countywide bicycle plan upon its adoption.

5.7.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts to GHG emissions through the design of the Project.

The Project includes the following design features, which are designed to reduce the Project's GHG emissions and are incorporated into the Project's GHG emissions analysis:

- The Project will include a system of bikeways integrated into the design of the community to encourage bicycle travel as an alternative to automobile;
- The Project will include a system of pedestrian access integrated into the design of the community to encourage pedestrian travel as an alternative to automobile;
- The Project will include traffic calming features into the design of the community to further encourage non-automobile travel;
- The Project includes a mix of residential and non-residential land uses;
- The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units;
- Residential and non-residential buildings will be 35 percent more energy efficient than the 2008 Title 24 part 6 building code;
- The Project will reduce potable water use by 20 percent compared to baseline water use levels through the use of water saving fixtures and or flow restrictors;

- The Project will use non-potable water to satisfy a portion of its demand for outdoor irrigation-related water;
- Where appliances are offered by homebuilders, Energy Star appliances will be installed in the residences;
- Public street lighting will use LED technology;
- The Project will include solar panels that cover 60 percent the commercial building roof areas;
- The Project will incorporate third party HVAC commissioning for all residential and non-residential land uses; and
- The Project will include radiant (white) roofs for residential land uses.

5.7.5 Environmental Impacts before Mitigation

As explained above, the CEQA guidelines were amended pursuant to SB 97 to include analysis of GHG. However, the amendments do not specify significance criteria for determining the effect of a project's GHG emissions. Instead, the amendments vest lead agencies with discretion to determine appropriate significance criteria.

As discussed below, the City will use consistency with SCAG's RTP/SCS as the threshold of significance in assessing potential GHG impacts.

Threshold: *Would the proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

The Project's GHG emissions were quantified and calculated to provide full disclosure of the Project's GHG impacts. The City compared these emissions to the reductions called for under AB 32, which is also an applicable plan and policy adopted for the purpose of reducing GHG emissions. As noted earlier, AB 32 is a legal mandate requiring that statewide GHG emissions be reduced to 1990 levels by 2020, or a 28.5 percent reduction from 1990 levels. To date, AB 32 is the only applicable numeric calculus for assessing GHG impacts and is how the City calculated the Project's emissions. Two published cases have upheld adoption of AB 32's reduction targets for GHG emissions as the threshold of significance for determining the significance of a project's GHG emissions. (CREED; Oroville) Additional information and analysis regarding GHG emissions is presented in the *Climate Change Technical Report* (ENVIRON) included as Appendix G.1 of this DEIR.

The method for determining the emission reductions required to achieve AB 32's goals is discussed in Section 5.7.3.4 above and summarized as follows. AB 32's mandated decrease in GHG emissions from 596 tonnes (projected 2020 NAT levels) to 427 tonnes (1990 levels) is equivalent to a 28.5 percent emissions reduction. In other words, if the Project's GHG emissions are reduced to 28.5 percent below 2020 NAT, it would mitigate the Project's cumulative GHG emission impacts as specified by law in AB 32. Consequently, a 28.5 percent reduction in emissions is an appropriate significance criterion and should not be confused with the environmental baseline of existing physical conditions. (CEQA Guidelines § 15125(a).)

The 2011 update to the Scoping Plan calculated new reduction targets to account for the downturn in the economy. Under this scenario, achieving the 1990 emissions level would require a reduction of GHG emissions of 118 MMTCO₂e, or 21.7 percent (down from 28.5 percent), to achieve in 2020 emissions levels in the 2020 NAT condition (CARB 2011c). The 2020 AB 32 baseline was also updated to account for measures incorporated into the inventory, including Pavley (vehicle model-years 2009 - 2016) and the renewable portfolio standard (12% - 20%). Inclusion of these measures further reduced the 2020 baseline to 507 MMTCO₂e. As a result, achieving the 1990 emission level would now require a reduction of GHG emissions of 80 MMTCO₂e or a reduction by approximately 16 percent (down from 28.5 percent) to achieve in 2020 emissions levels in the 2020 NAT condition (CARB 2011c, 2011f). This DEIR is thus conservative for continuing to consider a 28.5 percent reduction when there is substantial evidence that statewide emissions have decreased such that the Project's reduction will exceed the reduction goal necessary to achieve consistency with AB 32. The DEIR's consideration of a 28.5 percent reduction is also conservative compared to the San Bernardino County Greenhouse Gas Emissions Reduction Plan, which establishes a goal to reduce the County's internal and external emissions by at least 15 percent by 2020.

5.7.5.1 Overall Calculation Methodology and Emissions

Categories of Emission Sources

Two GHG inventories were developed to assess the Project's potential GHG impacts: (1) the inventory of emissions resulting from the Project in 2020 (Project 2020); and (2) the inventory of Project emissions under a NAT (No Action Taken) 2020 (i.e., Business As Usual). The emission inventories consider the following categories of GHG emissions:

- Project 2020 and NAT 2020
 - One-Time emissions
 - Construction emissions
 - Land use (vegetation) changes
 - Annual operational emissions
 - Area sources (lawn mowers; natural gas fire places)
 - Energy use - public lighting
 - Energy use
 - Water supply, treatment, and distribution
 - Solid waste
 - Mobile source emissions

A detailed discussion of the methodology employed for each of the sources is discussed below and more detail is provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

Scenario Overview

Project 2020

The Harmony Specific Plan (Project) is a comprehensive plan for the development of approximately 1,657 acres in the City of Highland. The Harmony Specific Plan area is north of Mill Creek, south and west of the San Bernardino National Forest, and east of Greenspot Road. The Harmony Specific Plan provides for development of a new community of traditional residential neighborhoods combined with parks and recreation areas, neighborhood gathering places, neighborhood commercial services, and community facilities within an open space setting. The Project proposes between 3,467 and 3,632 new housing units over a ten-year period, providing housing for approximately 11,822 to 12,385 new residents at full build-out in 2023. The development will also include commercial (i.e., office and retail uses) space, educational institution, recreational facilities and public facilities. In addition, a small portion of the Project has been designated with a Neighborhood Commercial (NC) overlay. Areas designated with an NC overlay may develop as a residential land use, as neighborhood commercial, or as a combination of the two uses. The proposed Project consists of two options that primarily include a mix of residential and commercial uses: 1) "without the neighborhood commercial overlay" and 2) "with the neighborhood commercial overlay." **Table 3-B – Land Use Summary**, in Section of the DEIR summarizes the land uses for the Project.

Analysis of the Project's GHG emissions incorporates the following regulatory measures and Project design features:

Regulatory Measures

- The CO₂e intensity for the Project will include 33% RPS;
- Pavley regulation mandating higher fuel efficiency standards for light-duty vehicles, the LCFS, and the Advanced Clean Cars Program; and
- The Project will meet the goal of statewide goal of 75% solid waste diversion, by reducing, recycling, or composting the generated waste.

Project Design Features

The following Project design features and regulatory measures were incorporated into the analysis of the Project 2020 scenario, which are described in the inventory:

- The Project will include a system of bikeways integrated into the design of the community to encourage bicycle travel as an alternative to automobile;
- The Project will include a system of pedestrian access integrated into the design of the community to encourage pedestrian travel as an alternative to automobile;
- The Project will include traffic calming features into the design of the community to further encourage non-automobile travel;
- The Project includes a mix of residential and non-residential land uses;

- The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units;
- Residential and non-residential buildings will be 35 percent more energy efficient than the 2008 Title 24 part 6 building code;
- The Project will reduce potable water use by 20 percent compared to baseline water use levels through the use of water saving fixtures and or flow restrictors;
- The Project will use non-potable water to satisfy a portion of its demand for outdoor irrigation-related water;
- Where appliances are offered by homebuilders, Energy Star appliances will be installed in the residences;
- Public street lighting will use LED technology;
- The Project will include solar panels that cover 60 percent of the commercial building roof areas;
- The Project will incorporate third party HVAC commissioning for all residential and non-residential land uses; and
- The Project will include radiant (white) roofs for residential land uses.

NAT 2020

The NAT 2020 scenario estimates emissions that would occur for the same land use plan as the Project 2020 scenario under two scenarios: both with and without NC overlay conditions, which were compared to the corresponding Project scenario. In each of these scenarios, the GHG emissions for the NAT 2020 were calculated as if no regulatory changes or Project design features were included. The NAT 2020 scenario does not incorporate any changes to the Project's land use plan; the NAT 2020 scenarios assume the same number of dwelling units in the same locations as the two iterations of Project.

This methodology means that the NAT 2020 emissions are calculated in the same manner as was used in the No Action Taken Scenario or "business as usual" scenario for the ARB's Scoping Plan to implement AB 32. The difference between Project 2020 emissions and the NAT 2020 emissions were compared to the 28.5 percent reduction threshold derived from the Scoping Plan. As detailed above, ARB has approved an update to the 2008 AB 32 Scoping Plan. This update included lower statewide growth projections and, thus, a lower reduction as compared to the ARB 2020 NAT projection that is necessary to achieve AB 32's goals. Based on current state-wide growth projections and regulatory changes, ARB determined that achieving AB 32's goals would require approximately a 16% reduction as compared to the ARB 2020 NAT projection^{19 20}. However, as a conservative assumption, this analysis uses the more conservative value from ARB (i.e., 28.5%) to determine significance of the Project's GHG emissions.

¹⁹ CARB, 2011. Attachment D, Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. August 19. Available at: http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf. Accessed: February, 2013.

²⁰ CARB, 2011. Status of Scoping Plan Measures. Available at: http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed: February, 2013.

Modeling Methodology

CalEEMod version 2011.1.1 was used to assist in quantifying the GHG emissions in the inventory presented herein for the Project in 2020 and NAT 2020.²¹ CalEEMod™ is a statewide program designed to calculate both criteria and GHG emissions from development projects in California. This model was developed under the auspices of the SCAQMD and received input from other California air districts, and is currently supported by several lead agencies for use in quantifying the emissions associated with development projects undergoing environmental review. CalEEMod™ utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors²², California Air Resources Board's (ARB's) on-road and off-road equipment emission models such as the Emission FACTor model (EMFAC) and the Emissions Inventory Program model (OFFROAD), and studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle.

CalEEMod™ is based upon ARB-approved Off-Road™ On-Road Mobile-Source Emission Factor models (OFFROAD and EMFAC, respectively), and is designed to estimate construction and operational emissions for land use development projects and allows for the input of project specific information. OFFROAD²³ is an emissions factor model used to calculate emission rates from off-road mobile sources (e.g., construction equipment, agricultural equipment). EMFAC²⁴ is an emissions factor model used to calculate emissions rates from on-road vehicles (e.g., passenger vehicles, haul trucks). The off-road diesel emission factors used by CalEEMod™ are based on the Air Resources Board (ARB) OFFROAD2007 program.

CalEEMod™ provides a simple platform to calculate both construction emissions and operational emissions from a land use project. It calculates both the daily maximum and annual average for criteria pollutants as well as total or annual GHG emissions. The model also provides default values for water and energy use. Specifically the model aids the user in the following calculations:

- Short term construction emissions associated with demolition, site preparation, grading, building, coating, and paving from off-road construction equipment, on-road mobile equipment associated with workers, vendors, and hauling, and fugitive dust associated with grading, demolition, truck loading, and roads, and volatile emissions of reactive organic gasses (ROG) from architectural coating and paving. Fugitive dust from windblown sources such as storage piles are not quantified in CalEEMod™ which is consistent with approaches taken in other comprehensive models.
- Operational emissions associated with the fully built out land use development, such as on-road mobile vehicle traffic generated by the land uses, fugitive dust associated with roads, volatile emissions of ROG from architectural coating, off-road emissions from landscaping equipment, volatile emissions of ROG from consumer products and cleaning supplies, wood stoves and hearth

²¹ For more information, see <http://www.caleemod.com>

²² The USEPA maintains a compilation of Air pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: <http://epa.gov/ttnchie1/ap42/>, Accessed: February, 2013.

²³ CARB, 2007. Off Road Mobile Source Emission factors. Available at: <http://www.arb.ca.gov/msei/msei.htm>. Accessed: September, 2013.

²⁴ CARB, 2010. EMFAC 2007 Release. Available at: http://arb.ca.gov/msei/onroad/latest_version.htm. Accessed: February, 2013.

usage, natural gas usage in the buildings, electricity usage in the buildings, water usage by the land uses, and solid waste disposal by the land uses.

- One-time vegetation sequestration changes, such as permanent vegetation land use changes and new tree plantings.

Mitigation impacts to both short-term construction and operational emissions are described in California Air Pollution Control Officers Association (CAPCOA)'s Quantifying Greenhouse Gas Mitigation Measures.²⁵ In addition, CalEEMod™ contains default values and existing regulation methodologies to use in each specific local air district region. Appropriate state-wide default values can be utilized if regional default values are not defined. ENVIRON used default factors for San Bernardino county area that is within the SCAQMD jurisdiction for the GHG emission inventory, unless otherwise noted in the methodology descriptions below.

ENVIRON directly or indirectly relied on emissions estimation guidance from government-sponsored organizations, government-commissioned studies of energy use patterns, energy surveys by other consulting firms, Project specific resource management studies (e.g., Traffic study and Domestic Water, and Sewer Analysis), and emission estimation software as described above. As noted below, third-party studies were also relied upon to support analyses and assumptions made outside of the approach described above.

The CalEEMod™ output files are provided for reference in Appendix A to the *Climate Change Technical Report* (ENVIRON) included as Appendix G.1 of this DEIR.

Project 2020 and NAT 2020 GHG Emissions Inventory

As discussed above, the emission inventories consider the following categories of GHG emissions:

- Project 2020 and NAT 2020
 - One-Time emissions
 - Construction emissions
 - Land use (vegetation) changes
 - Annual operational emissions
 - Area sources (lawn mowers; natural gas fire places)
 - Energy use - public lighting
 - Energy use
 - Water supply, treatment, and distribution
 - Solid waste
 - Mobile source emissions

²⁵ CAPCOA. Quantifying Greenhouse Gas Mitigation Measures. August 2010. Available at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

A detailed discussion of each of these categories of emission sources were modeled for both of the scenarios described above.

One-Time Emissions

One-time emissions are those emissions that are not reoccurring over the life of the Project. This includes emissions associated with construction and emissions associated with land use changes.

Construction Emissions

This section describes the estimation of GHG emissions from construction activities at the Project Site. The major construction phases included in this analysis are:

- Site Preparation: clearing vegetation (grubbing and tree/stump removal) and stones prior to grading.
- Grading: cut and fill of land to ensure the proper base and slope for the construction foundation.
- Building Construction: construction of structures and buildings.
- Architectural Coating: application of coatings to both the interior and exterior of buildings or structures
- Paving: laying of concrete or asphalt such as in parking lots or roads.

These phases will occur in connection with each Phase of the Project (Phase 1 - 5). GHG emissions from these construction phases are largely attributable to fuel use from construction equipment and worker commuting. The proposed plan for constructing the Project is anticipated to happen from 2015 to 2027, or over a 12-year period. However, the construction emissions for this analysis are calculated for the period 2014 to 2023, or over a nine-year period. Analysis of construction emissions is thus based on conservative assumptions because (1) the construction schedule assumed for the GHG impacts analysis is more compact than the anticipated Project construction schedule, and (2) the construction on-road and off-road equipment emissions are expected to reduce over time due to improved technology in future years.

Because the Project site is currently vacant and has no existing buildings, construction of the Project does not involve any demolition. While the exact construction schedule and equipment mix may vary between the "with" and "without" neighborhood commercial overlay from the current analysis, the maximum daily emissions are not expected to be higher than that estimated given the conservative assumptions included in this analysis.

Construction Methodology

GHG emissions from construction were calculated using CalEEMod™ version 2011.1.1. The construction schedule, off-road equipment lists and equipment specifications, and daily trip counts for workers, vendors, and haul trucks as estimated for the Project are included in the analysis. CalEEMod™ version 2011.1.1 default values were used for equipment and vehicle emission factors, equipment load factors and vehicle trip lengths. No specific mitigation measures related to GHG emissions associated with construction were assumed in this model. Use of newer model engines and higher Tier (i.e., lower emitting) off-road equipment would serve in most cases to reduce the GHG emissions. The exceptions

are the use of compressed natural gas vehicles, which could increase the GHG emissions from off-road vehicles slightly, and the use of diesel particulate filters, which have a small energy penalty associated with them. The calculation of total GHG emissions from construction, off-road emissions were adjusted from the CalEEMod™ version 2011.1.1 output to account for a 33% reduction attributable to overestimation of load factors, which ARB has indicated to be appropriate.²⁶ Construction generates on-road vehicle exhaust, evaporative, and dust emissions from personal vehicles for worker and vendor commuting, and trucks for soil and material hauling. These emissions are based on the number of trips and vehicle miles traveled (VMT) along with emission factors from EMFAC2007.

This analysis was based on a mix of Project specific estimates and CalEEMod defaults for the numbers and types of equipment that will be used in the construction of the Project as well as the duration of the different construction phases. The analysis assumes development in five Project phases over a multi-year time frame. Project phases 4 and 5 will overlap. Therefore, analysis of construction emissions combined Project phases 4 and 5 as one Project construction phase. The GHG calculations are intended to estimate long-term emissions. Each piece of equipment was conservatively assumed to be operated for 10 hours a day, 6 days a week during a given phase duration. The construction is assumed to start in 2015 and will be completed in 2027²⁷. The construction land use by phase, schedule, equipment lists, demolition and grading information, and total residential and non-residential square footages are shown in Tables 5 through 9, respectively; the GHG emissions associated with off-road construction equipment are shown in Table 10; and GHG emission from on-road vehicles associated with construction is shown in Table 11, all in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

The detailed emissions breakdown, including emissions calculations, is also provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

Construction Emissions Scenarios

Project 2020

The total emissions from construction are summarized in **Table 5.7-A – Summary of GHG Construction Emissions**. Total GHG emissions from all project phases for off-road and on-road emissions are 18,846 and 4,666 MT CO₂e, respectively. Phase 1 will generate the largest amount of GHG emissions due to the larger land use acreage and higher level of construction activities. Total GHG emissions from the construction activities are 23,512 MT CO₂e. The total GHG emissions were amortized over 30-year project lifetime at 784 MT CO₂e/year.

NAT 2020

The GHG emissions associated with the NAT 2020 scenario are identical to those with the Project 2020 scenario discussed above, because the construction schedule is the same.

²⁶ Personal communication, 2010. Nicole Dolney of CARB to ENVIRON. September 8.

²⁷ Note that the analysis is conservatively based on construction starting in 2014 and ending by 2023.

Table 5.7-A – Summary of GHG Construction Emissions

Construction Phase	MT CO ₂ e Emissions		
	Equipment	Vehicles	Total
1	5,196	1,506	6,702
2	5,223	1,294	6,518
3	3,565	891	4,455
4/5	4,862	975	5,837
Total	18,846	4,666	23,512
		30-yr Amortized	794

Source: ENVIRON, Table 12.

Note: the GHG emissions are identical for the Project 2020 scenario and the ARB NAT scenario.

Land Use (Vegetation) Changes

Permanent vegetation changes that occur as a result of Project development constitute a one-time change in the carbon sequestration capacity of a Project site. In this case, undeveloped land will be converted to different land uses with landscaped areas with trees. This will result in an overall net loss of carbon sequestration once the vegetation reaches a steady state (i.e., new vegetation replaces dying vegetation).²⁸ Consequently, vegetation change results in a GHG emissions increase.

Land Use (Vegetation) Changes Methodology

This analysis calculates the positive and negative GHG emissions associated with vegetation removal and re-vegetation at the Project site. Sequestration quantities were calculated assuming that 9,336 net new trees would be planted within the Project property. Since the exact species of trees to be planted is not known at this time, the miscellaneous tree type was selected which represents an average of several tree species. Also, the existing vegetation being removed and added as part of the Project is accounted for. The change in vegetation at the proposed Project site results in a one-time net release of carbon as shown in **Table 5.7-B – Project 2020 Vegetation Change Evaluation**. The ARB 2020 NAT scenario assumes that 2,704 net new trees would be planted within the Project property based on the typical regional approach for vegetation. The associated one-time net release of carbon is shown in **Table 5.7-C – ARB NAT 2020 Vegetation Change Evaluation**.

The detailed emissions breakdown, including emissions calculations, is also provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

Land Use (Vegetation) Changes Emissions Scenarios

Project 2020

Under the Project 2020 scenario with and without commercial overlay, 9,336 new trees will be planted. These trees will sequester approximately 6,610 tonnes CO₂. The Project also provides approximately 83 additional acres of grassland, which will sequester approximately 358 tonnes CO₂.

²⁸ SCAQMD, 2011, California Emissions Estimator Model User's Guide, Appendix A, pages 42-43. Version 2011.1. February. Available at: <http://www.caleemod.com/>. Accessed: February, 2013.

Development of the Project 2020 scenario will remove 252 existing acres of cropland, 576 acres of scrub, 37 acres of forest, and 80 acres of orchard. This loss of vegetation will release approximately 15,693 tonnes CO₂.

The Project 2020 scenario results in a net release of approximately 9,083 tonnes CO₂, or approximately 303 tonnes CO₂ per year over a 30-year period.

Table 5.7-B – Project 2020 Vegetation Change Evaluation

Type of Vegetation Change	Land Use Change		Annual MT CO ₂ Accumulation
	Initial (acres)	Final (acres)	
Cropland	252	0	-1,562.40
Grassland ¹	172	255	357.73
Others	5	0	0.00
Scrub	576	0	-10,381.80
Forest	37	0	-4,107.00
Undisturbed Vegetation ²	535	535	0.00
Orchard Areas ³	80	0	Estimated below
Developed Areas	0	867	0
Total Vegetation Change	1,657	1,657	-15,693
Net New Trees - CO₂e Sequestered⁴			
Types of Trees	Initial (no. of trees)	Final (no. of trees)	Net New Trees
Miscellaneous	10,000	19,336	9,335.86
CO ₂ e Sequestered from Net New Trees			6,609.79
Total CO₂e Accumulated/Sequestered⁵			-9,083.68
30-yr Amortized			-302.79

Source: ENVIRON, Table 14.

Notes: ¹ Based on the Project, the final acreage of grassland consists of front and back yards around residential units, and other parks and lawns within the Project.

² This vegetation represents areas not disturbed by the Project but within Project boundaries.

³ The removal of orchard areas was represented by the estimate of the number of trees that are removed.

⁴ Total CO₂e sequestered over the IPCC recommended 20-year active growth period of new trees.

⁵ The negative value indicates loss of sequestration. These are CO₂e that are released into the atmosphere.

NAT 2020

Under the NAT 2020 scenario, 2,704 new trees will be planted, based on minimum City of Highland requirements for vegetation at new project sites. These trees will sequester approximately 1,914 tonnes CO₂. The NAT 2020 scenario also provides approximately 83 additional acres of grassland, which will sequester approximately 358 tonnes CO₂.

Development of the NAT 2020 scenario will remove 252 existing acres of cropland, 576 acres of scrub, 37 acres of forest, and 80 acres of orchard. This loss of vegetation will release approximately 15,693 tonnes CO₂.

The NAT 2020 scenario results in a net release of approximately 13,779 tonnes CO₂, or approximately 459 tonnes CO₂ per year over a 30-year period.

Table 5.7-C – ARB NAT 2020 Vegetation Change Evaluation

Type of Vegetation Change	Land Use Change		Annual MT CO ₂ Accumulation
	Initial (acres)	Final (acres)	
Cropland	252	0	-1,562.40
Grassland ¹	172	255	357.73
Others	5	0	0.00
Scrub	576	0	-10,381.80
Forest	37	0	-4,107.00
Undisturbed Vegetation ²	535	535	0.00
Orchard Areas ³	80	0	Estimated below
Developed Areas	0	867	0
Total Vegetation Change	1,657	1,657	-15,693
Net New Trees - CO₂e Sequestered⁴			
Types of Trees	Initial (no. of trees)	Final (no. of trees)	Net New Trees
Miscellaneous	10,000	12,704	2,703.86
CO ₂ e Sequestered from Net New Trees			1,914.33
Total CO₂e Accumulated/Sequestered⁵			-13,779.14
30-yr Amortized			-459.30

Source: ENVIRON, Table 15.

Notes: ¹ Based on the Project, the final acreage of grassland consists of front and back yards around residential units, and other parks and lawns within the Project.

² This vegetation represents areas not disturbed by the Project but within Project boundaries.

³ The removal of orchard areas was represented by the estimate of the number of trees that are removed.

⁴ Total CO₂e sequestered over the IPCC recommended 20-year active growth period of new trees.

⁵ The negative value indicates loss of sequestration. These are CO₂e that are released into the atmosphere.

Operational Emissions

Emissions from mobile and area sources and indirect emissions from energy and water use, wastewater, as well as waste management, would occur every year after build out. This section identifies operational GHG emissions.

Area Sources (lawn mowers; natural gas fire places)

The area source GHG emissions included in this analysis result from landscaping-related fuel combustion sources, such as lawn mowers, and from natural gas fireplaces.²⁹ GHG emissions due to natural gas combustion in buildings other than from fireplaces are excluded from this analysis since they are included in the emissions associated with building energy use.

Area Sources Methodology

GHG emissions associated with natural gas fired fireplaces are calculated using emission factors from the California Climate Action Registry (CCAR). The average heating rate in British Thermal Units (BTU) per hour for fireplaces in homes is 60,000 BTU/hr. Natural gas is assumed to have 1,020 BTU per standard cubic foot. This methodology parallels the CalEEModTM methodology, but due to a calculation issue in this version of CalEEModTM, the calculations were performed outside of CalEEModTM.

²⁹ Wood-burning fireplaces and stoves are largely prohibited in the South Coast Air District as of March 9, 2009. Rule 445.

The GHG emissions for the Project were calculated using CalEEMod™ version 2011.1.1 defaults based upon the land uses that will be part of these developments, except as noted below.

- All cooking stoves and fireplaces were assumed to be natural gas burning, based on SCAQMD Rule 445; and
- The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units.

The resulting GHG emissions for the Project "with neighborhood commercial overlay" are shown in **Table 5.7-D – Area Source GHG Emissions**. The ARB 2020 NAT scenario assumes that the default percentage of dwelling units (89.5%) will contain fireplaces, and the resulting GHG emissions for the "with neighborhood commercial overlay" scenario are shown in **Table 5.7-D**.

GHG emissions resulting from Project "without neighborhood commercial overlay" are shown in **Table 5.7-D**, and the emissions resulting from ARB 2020 NAT scenario are shown in **Table 5.7-D**.

Area Sources Emissions Scenarios

Project 2020

The Project 2020 scenario "with NC overlay" will result in 1,452 tonnes CO₂e emissions per year associated with natural gas fireplaces, and 88 tonnes CO₂e emissions per year associated with landscaping-related fuel combustion sources such as lawn mowers. The total area source emissions associated with the Project 2020 scenario are 1,540 tonnes CO₂e emissions per year.

NAT 2020

The NAT 2020 scenario "with NC overlay" will result in 2,248 tonnes CO₂e emissions per year associated with natural gas fireplaces, and 88 tonnes CO₂e emissions per year associated with landscaping-related fuel combustion sources such as lawn mowers. The total area source emissions associated with the NAT 2020 scenario are 2,336 tonnes CO₂e emissions per year.

Table 5.7-D – Area Source GHG Emissions

Category	2020 Emissions Scenario (MT CO ₂ e/yr)			
	Project with NC Overlay	ARB NAT with NC Overlay	Project without NC Overlay	ARB NAT without NC Overlay
Hearth	1,452.42	2,248.39	1,521.56	2,354.64
Landscaping	88.0	88.00	92.19	92.19
Total	1,540.42	2,336.39	1,613.75	2,446.83

Source: ENVIRON, Tables 16, 17, 18, and 19.

Energy Use - Public Lighting

Street lighting emits GHGs because of electricity usage. GHGs are emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. The methodology for calculating indirect emissions is provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

Public Lighting Methodology

GHG emissions from powering public lighting sources are also included in this analysis. **Table 5.7-E – Street Lighting GHG Emissions** shows the estimated GHG emissions from street lighting. The assumptions for reductions in energy use for street lighting are based on City of Redlands Street Light Upgrade Program³⁰. Both Project with and without NC overlay options are assumed to have the same number of streetlights in this analysis.

Public Lighting Scenarios

Project 2020

Public lighting emissions from the Project 2020 scenario (both with and without NC overlay) are estimated to account for 55.90 MTCO₂e/yr. This includes the Project’s commitment to install LED lighting in public street lighting.

NAT 2020

Public lighting emissions from the ARB 2020 NAT scenario (both with and without NC overlay) are estimated to account for 142.85 MTCO₂e/yr. The Project's public lighting implementation plan is estimated to reduce GHG emissions by 21.7 percent as compared to the ARB 2020 NAT scenario for this category of emissions.

Table 5.7-E – Street Lighting GHG Emissions

Lighting Type	2020 Emissions Scenario with and without NC Overlay	
	Project	ARB NAT
	Light Emitting Diode (LED) Lights	High Pressure Sodium (HPS) Lights
W/hr/light	58.5	117
No. of Lights	1,000	1,000
No. of hours/day	11.5	11.5
kWhr/yr	1.84	3.69
CO ₂ Emission Factor (lb/MWh) ¹	501.90	641.26
Lb of CO ₂ /yr	123,243	314,928
Total GHG Emissions (MT CO₂e/yr)	55.90	142.85

Source: ENVIRON, Table 20.

Note: ¹ 2020 NAT based on SCE energy intensity, described under the heading “Energy use methodology”. Project assumes 33% RPS.

Energy Use

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO₂ and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions.

³⁰ City of Redlands Municipal Utilities and Engineering Department. City of Redlands Street Light Upgrade Program: Energy Efficient Light Emitting Diode (LED) Street Lighting Conversion Study. July, 2010.

Energy Use Methodology

ENVIRON estimated the emission factors for electricity used in the energy use analysis (see ENVIRON Table 21 for how it was calculated). Climate Zone 10 was selected based on the CEC forecast climate zone map shown in the CalEEMod™ version 2011.1.1 User's Guide. Project emissions were calculated using a SCE emission factor that accounts for the 33 percent RPS required by 2020. The CalEEMod CO₂ intensity factor is modified based on the 2007 Power/Utility Reporting Protocol to account for the RPS. The Project's GHG emissions reflect the Project's ("with neighborhood commercial overlay") design feature to construct buildings that are 35 percent more energy efficient than the 2008 Title 24 Part 6 Building Code.³¹

Appliances

The analysis calculates emissions based on installation of Energy Star appliances for all major appliances (e.g., refrigerators, dishwashers, clothes washers, and fans) in residential homes based on the Project's design feature. The Energy Star reduction figures are based on the CalEEMod defaults for that option. The Project emissions, when applying additional 35% energy efficiency to the 2008 Title 24 Part 6 Building Code and the use of Energy Star appliances that are required by the Project's design feature, are estimated to reduce GHG emissions by 2,787 MTCO₂e/yr for the "with" NC overlay option and 2,797 MTCO₂e/yr for the "without" NC overlay option as compared to the ARB 2020 NAT scenario. The reductions from the Project "with" and "without" NC overlay account for GHG emission reductions of 2.46% and 2.56% from the total ARB 2020 NAT scenario emissions for this category of emissions, respectively.

Solar Panels

A solar panel is a set of solar photovoltaic modules electrically connected and mounted on a supporting structure to provide additional electricity. Solar panels are assumed to be installed only on 60 percent of commercial rooftops for this Project. Total Project electricity supplied by photovoltaic energy (PV) was estimated using region-specific solar rating and annual PV production rate. Solar rating and annual PV production were based on the Project zip code (City of Highland, 92346), and was derived from Solar Estimate's database³². Solar Estimate's database includes factors such as "solar rating", soiling and contamination, temperature, system configuration, orientation of the sun, shading, PV energy delivered efficiency, wiring and power point tracking losses, and inverter efficiency. With this database, Solar Estimate provides an estimate of typical solar performance information based on the geographic location. One of the Project design features assumes that 60% of the commercial roof area will be available as effective solar panel area. The total annual GHG emissions reduction from electricity generation by solar panels was estimated based on the expected performance of the solar panels. The associated GHG emissions that are reduced from the reduction in electricity required from SCE is based on the SCE emission factor that accounts for the 33 percent RPS required by 2020, as discussed above. The ARB 2020 NAT scenario assumes that no solar panels are installed. The ARB 2020 NAT scenario does not account for the 33% RPS.

³¹ The Title 24 2013 Building Energy Efficiency Standards are pending. Available at: http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2013_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed: December, 2012.

³² Solar-Estimate's tool is available online. Available at: <http://www.solar-estimate.org/>.

Annual GHG reductions as a result of solar panel usage for the Project "with" and "without" NC overlay were estimated to be 506 and 139 MTCO₂e/yr, respectively. The reductions from the Project "with" and "without" NC overlay account for GHG emission reductions of 0.45% and 0.13% from the total ARB 2020 NAT scenario for this category of emissions, respectively. Detailed calculations for the emission reductions from the solar panel usage are shown in the ENVIRON report, Tables 22 and 23, for the Project "with" and "without" NC overlay, respectively.

Third Party HVAC Commissioning

Commissioning of a Heating, Ventilation, and Air Conditioning (HVAC) system is a documented way to diagnose and verify HVAC system performance, and to propose ways to improve the performance in compliance with owner's or occupants' requests. The commissioning is performed in order to keep the system in optimal condition through the life of the building from viewpoints of environment, energy and facility usage.

In this analysis, third party HVAC commissioning was calculated for all residential and non-residential buildings. The GHG emission reductions were estimated based on the methodology used by Contra Costa County for its Municipal Climate Action Plan, in which the third party HVAC commissioning was performed on 15 existing buildings.³³ The HVAC commissioning consisted of improving, retrofitting, and replacing HVAC systems in the studied buildings. The GHG reduction was estimated by multiplying the Contra Costa County GHG Reduction (lb CO₂e / sqft) by the building sizes (sqft). The respective reductions for electricity and natural gas use are 1.25 lbs CO₂e / sqft and 0.0055 CO₂e / sqft. The 'residential' building size was derived from the total square footage of single-family homes and condominium/townhouse. The 'non-residential' building size was derived from the total square footage of elementary school, public facilities, health club, swimming pool, and regional shopping center.

In comparison to the ARB 2020 NAT scenario, the Project "with" NC overlay is estimated to reduce GHG emissions by 1,846 and 101 MTCO₂e/year for residential and non-residential buildings, respectively (see ENVIRON Table 24). The Project "without" NC overlay is also estimated to reduce GHG emissions by 1,900 and 50 MTCO₂e/year from the ARB 2020 NAT scenario for residential and non-residential buildings, respectively (see ENVIRON Table 24). The reductions from the Project "with" and "without" NC overlay account for GHG emission reductions of 1.72% and 1.78% from the total ARB 2020 NAT scenario for this category of emissions, respectively.

Radiant Roofs

Radiant roofs or cool roof are artificially modified surfaces that have high solar reflectance, or the ability to reflect the visible, infrared and ultraviolet wavelengths of the sun, and reducing heat transfer to the surface. The radiant roofs also have high thermal emittance or the ability to radiate absorbed, or non-reflected solar energy. For building structures, darker roofs tend to heat up to a greater extent than light-colored roofs, thereby increasing the cooling demands of a building during summer. The radiant roofs come in a variety of colors and materials and are available for both commercial and residential

³³ Contra Costa County published GHG reduction metrics (kWh/sqft or Therm/sqft) for HVAC Improvement and Retrofit in GHG Annual Reduction Metric (Available at: <http://www.cccounty.us/DocumentCenter/Home/View/3028>; Accessed: June, 2013.) The metrics were published in December 2008, and were used in the Contra Costa County Municipal Climate Action Plan.

buildings. Radiant roofs are designed to keep the house cool and reduce electricity usage on air conditioning.

In this analysis, the energy savings estimate was based on a study of nine homes in Florida and a single home study in Sacramento, CA.³⁴ The purpose of the studies was to determine how white roofs or radiant surfaces could reduce or offset solar radiation absorption in urban areas. Dark roofs are low-albedo (highly absorptive) roofs, and the difference between the surface and ambient air temperatures may be 50°C. Whereas, white or radiant roofs have insulating properties and are high-albedo (less absorptive) roofs, with difference between the surface and ambient air temperatures is only about 10°C. Therefore radiant roofs can effectively reduce energy consumption used for cooling the building. The studies provide information regarding the direct energy – saving effects of light-colored roofs, and the average energy savings from these studies was applied in this analysis. It was assumed that the radiant roofs are installed on all residential and non-residential buildings.

With radiant roof installation, the Project "with" NC overlay was estimated to reduce GHG emissions by 439 MTCO₂e/yr, while the Project "without" NC overlay was estimated to reduce the emissions by 460 MTCO₂e/yr. The energy saving in the Project scenario “with” and “without” the NC overlay is estimated in **Table 5.7-F – Project 2020 GHG Radiant Roof Reductions**. The reductions from the Project "with" and "without" NC overlay account for GHG emission reductions of 0.39% and 0.42% from the total ARB 2020 NAT scenario for this category of emissions, respectively.

Table 5.7-F – Project 2020 GHG Radiant Roof Reductions

Dwelling Units	Energy Savings (kWh/day/home)	Emission Factor (lb/CO ₂ e/kWh)	Annual GHG Reduction (CO ₂ e)	
			MT/year/home	MT /yr
3,467 (with NC overlay)	1.51	0.506	0.13	438.81
3,632 (without NC overlay)	1.51	0.506	0.13	459.69

Source: ENVIRON, Tables 26 and 27.

Energy Use Emissions Scenarios

Project 2020

For the Project "with" NC overlay, CO₂e emissions from energy and natural gas usage were estimated to be 5,847 and 5,080 MTCO₂e/yr, respectively. The total emissions from energy use, excluding the public street lighting emissions, are 10,927 MTCO₂e/yr for the Project.

For the Project "without" NC overlay, CO₂e emissions from energy and natural gas usage were estimated to be 5,228 and 5,505 MTCO₂e/yr, respectively. The total emissions from energy use, excluding the public street lighting emissions, are 10,733 MTCO₂e/yr for the Project "without" NC overlay scenario. The GHG emissions from energy use are summarized in **Table 5.7-G – Energy-Related GHG Emissions Summary**, below.

³⁴ H. Akabari, M. Pomerantz, and H. Taha. "Cool Surfaces and Shade Trees to Reduce Energy Use and Improve Air Quality in Urban Areas." Elsevier Science Ltd. Solar Energy, Vol. 70, No. 3, pp. 295-310, 2001.

NAT 2020

The ARB 2020 NAT with NC overlay scenario is estimated to emit 8,682 and 7,907 MTCO₂e/yr from energy and natural gas usage, respectively. The total emissions from energy use, excluding the public street lighting emissions, are 16,589 MTCO₂e/yr for the ARB 2020 NAT with NC overlay scenario. The Project "with" NC overlay is estimated to have a 34.13 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions.

The ARB 2020 NAT without NC overlay scenario is estimated to emit 8,133 and 8,144 MTCO₂e/yr from energy and natural gas usage, respectively. The total emissions from energy use, excluding the public street lighting emissions, are 16,277 MTCO₂e/yr for the ARB 2020 NAT without scenario. The Project "without" NC overlay is estimated to have a 34.06 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions. The GHG emissions from energy use are summarized in **Table 5.7-G**, below.

Table 5.7-G – Energy-Related GHG Emissions Summary

Scenario	MT CO ₂ e/yr Emissions from Energy Use		
	Electricity	Natural Gas	Total
Project 2020 with NC Overlay	5,846.92	5,080.05	10,926.97
Project 2020 without NC Overlay	5,505.29	5,227.93	10,733.22
ARB NAT 2020 with NC Overlay	8,681.69	7,907.36	16,589.05
ARB NAT 2020 without NC Overlay	8,143.81	8,132.96	16,276.77

Source: ENVIRON, Tables 28, 29, 30 and 31

Water Supply, Treatment, and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water as well as the sources of the water. Additional emissions from wastewater treatment include CH₄ and N₂O, which are emitted directly from the wastewater.

Water Supply, Treatment, and Distribution Methodology

The GHG emissions analysis assumed that the water used was based on CalEEMod™ version 2011.1.1. Using the program, the total residential indoor and outdoor water usage was based on the Pacific Institute "Waste Not Want Not" report.³⁵ These values were divided by the total number of occupied households in California in the year 2000 to give water demand per dwelling unit. The model assumes that these water use values are representative of all residential dwelling unit types (single-family, apartment, condo, etc.).

The water demand assumptions for this analysis were modified to account for the expected reduction in water demand based on the Project’s compliance with the California Green Building Code and the Project-specific assumptions related to the Project’s on-site wastewater treatment facility. The

³⁵ Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online

California Green Building Code requires that indoor potable water use will be reduced by 20 percent through the use of water saving fixtures and or flow restrictors³⁶. The Project water use also includes the use of non-potable water for outdoor water use³⁷; however, this was conservatively not quantitatively included in the analysis due to limitations with the CalEEMod model. In addition, the analysis used CalEEMod™ version 2011.1.1 default assumptions for average embodied energy³⁸ for Southern California, which are based on analyses by the California Energy Commission. The analysis assumed that all wastewater was treated equally by aerobic and anaerobic systems, given the Project's plan for the on-site wastewater treatment facility³⁹. The estimated electricity demand for the onsite wastewater treatment plant is 6 kWh/ 1,000 gallons to treat the wastewater⁴⁰. The ARB 2020 NAT scenario assumed the water usage without the 20 percent indoor water use reduction, and GHG emissions related to the water and wastewater conveyance were based on the utility emission factors consistent with the ARB 2020 NAT scenario (i.e., assuming that the 33% RPS requirement did not exist). All other assumptions regarding wastewater treatment were assumed to be the same as the Project (i.e., the on-site wastewater treatment facility was also included in the ARB 2020 NAT scenario).

The detailed emissions breakdown is also provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

Water Supply, Treatment, and Distribution Emissions Scenarios

Project 2020

The Project "with" NC overlay option was estimated to have 335 and 756 million gallons (Mgal) per year of indoor and outdoor water usage and was estimated to result in 4,601 MTCO₂e/yr, as shown in **Table 5.7-H – Water-Related GHG Emissions Summary**.

The Project "without" NC overlay option was estimated to have 335 and 756 Mgal/yr of indoor and outdoor water usage and was estimated to result in 4,601 MTCO₂e/yr, as shown in **Table 5.7-H**.

NAT 2020

The ARB 2020 NAT with NC overlay scenario was estimated to have 419 and 756 Mgal/yr of indoor and outdoor water usage and was estimated to result in 6,254 MTCO₂e/yr, as shown in **Table 5.7-H**. The Project "with" NC overlay is estimated to have a 26.43 percent reduction of GHG emissions as compared to the ARB 2020 NAT with NC overlay scenario.

The ARB 2020 NAT without NC overlay scenario was estimated to have 419 and 756 Mgal/yr of indoor and outdoor water usage and was estimated to result in 6,254 MTCO₂e/yr, as shown in **Table 5.7-H**. The Project "without" NC overlay is estimated to have a 26.43 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario.

³⁶ CSBC, 2010. 2010 California Green Building Standards. 4.303.1. Available at: http://www.documents.dgs.ca.gov/bsc/calgreen/2010_ca_green_bldg.pdf. Accessed: February, 2013.

³⁷ RBF Consulting, Inc., 2013. Harmony Specific Plan Domestic Water System, November 5

³⁸ Embodied energy refers to the amount of energy that was used in delivering water to the specific land use.

³⁹ Aerobic wastewater treatment refers to wastewater treatment processes that are based on aerobic digestion or in the presence of oxygen.

⁴⁰ The Project has "alternatives" for offsite wastewater treatment. In this case, the electricity required for wastewater conveyance and treatment approach (e.g., anaerobic vs. aerobic) would likely be different from that assumed for this analysis. Based on the CalEEMod™ default electricity intensity to convey wastewater (i.e., 1.91 kWh/ 1,000 gallons) and CalEEMod™ default assumptions regarding treatment approach, the estimated emissions related to onsite wastewater treatment is a conservative representation of the related GHG emissions.

Table 5.7-H – Water-Related GHG Emissions Summary

Scenario	Indoor Water Use (Mgal/yr)	Outdoor Water use (Mgal/yr)	CO ₂ e Emissions (MT/yr)
Project 2020 with NC Overlay	335.34	755.57	4,601.15
Project 2020 without NC Overlay	335.34	755.57	4,601.14
ARB NAT 2020 with NC Overlay	419.17	755.57	6,253.84
ARB NAT 2020 without NC Overlay	419.17	755.57	6,253.83

Source: ENVIRON, Tables 32, 33, 34 and 35

Solid Waste

Municipal solid waste is the amount of material that is disposed of by land filling, recycling, or composting. The analysis assumes that an additional waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting to meet the statewide goal of 75 percent waste diversion⁴¹. The remainder of the waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material.

Solid Waste Methodology

The CalEEMod™ version 2011.1.1 solid waste module determines the GHG emissions associated with the disposal of solid waste into landfills, in quantities that are based upon land use type according to waste disposal studies conducted by CalRecycle. For this module, CalEEMod™ version 2011.1.1 default waste generation rates were used since site-specific information was not available. GHG emissions associated with non-landfill diverted waste streams are not considered, because it is generally assumed that these diversions do not result in any appreciable amounts of GHG emissions when operated effectively.⁴² These waste diversion alternatives may result in differences in life-cycle emissions of GHGs, but it is not appropriate to combine life-cycle emissions for only one category of emissions⁴³ As mentioned previously, biogenic CO₂ emissions were not included when ARB analyzed the GHG emissions inventory under AB 32. Therefore, they are not included in the Project emissions inventory.

The ARB 2020 NAT scenario assumes a solid waste diversion from the landfills consistent with what was occurring prior to the passing of AB 32. Conservatively, this was assumed to be 48 percent⁴⁴, the waste diversion rate reported for the year 2006.

The detailed emissions breakdown is also provided in the *Climate Change Technical Report* included as Appendix G.1 of this DEIR.

⁴¹ CalRecycle, 2013. California's 75 Percent Initiative. Available at: <http://www.calrecycle.ca.gov/75percent/>. Accessed: July, 2013.

⁴² CARB. 2010. Local Government Operations Protocol. Chapter 9.4

⁴³ This inventory represents scope 1 and 2 emission categories. A life-cycle analysis of waste diversion would be a scope 3 inventory. CARB's Local Government Operations Protocol Version 1.1 (May 2010) clearly states that scope 3 emissions should not be combined with scope 1 and 2 emissions.

⁴⁴ CalRecycle. 2006. Highland Jurisdiction Diversion / Disposal Rate Detail, Available at: <http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionDetail.aspx?JurisdictionID=198&Year=2006>. Accessed: July 2013.

Solid Waste Emissions Scenarios

Project 2020

The Project "with" NC overlay option was estimated to generate 1,072 tons/yr of solid waste and was estimated to result in 488 MTCO₂e/yr, as shown in **Table 5.7-I – Solid Waste-Related GHG Emissions Summary**. The Project "without" NC overlay option was estimated to generate 1,051 tons/yr of solid waste and was estimated to result in 478 MTCO₂e/yr, as shown in **Table 5.7-I**.

NAT 2020

The ARB 2020 NAT “with” NC overlay scenario was estimated to generate 2,230 tons/yr of solid waste and was estimated to result in 1,014 MTCO₂e/yr, as shown in **Table 5.7-I**. The Project "with" NC overlay is estimated to have a 51.92 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions.

The ARB 2020 NAT “without” overlay scenario was estimated to generate 2,185 tons/yr of solid waste and was estimated to result in 994 MTCO₂e/yr, as shown in **Table 5.7-I**. The Project "without" NC overlay is estimated to have a 51.92 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions.

Table 5.7-I – Solid Waste-Related GHG Emissions Summary

Scenario	Waste Disposed (tons/yr)	CO ₂ e Waste Emissions (MT/yr)
Project 2020 with NC Overlay	1,071.92	487.63
Project 2020 without NC Overlay	1,050.85	478.04
ARB NAT 2020 with NC Overlay	2,229.59	1,014.29
ARB NAT 2020 without NC Overlay	2,185.77	994.34

Source: ENVIRON, Tables 36, 37, 38 and 39

Mobile Source Emissions

GHG emissions will also result from mobile sources associated with the Project. These mobile source emissions will result from the typical daily operation of motor vehicles by residents, visitors, employees, and customers.

Mobile Source Methodology

The GHG emissions associated with on-road mobile sources are generated from residents, workers, customers, and delivery vehicles visiting the land use types in the project. The emissions associated with on-road mobile sources includes running and starting exhaust emissions, evaporative emissions, brake and tire wear, and fugitive dust from paved and unpaved roads. Starting and evaporative emissions are associated with the number of starts or time between vehicle uses and the assumptions used in determining these values are described below. All of the other emissions are dependent on VMT. ENVIRON estimated traffic emissions using the trip rates specified in the Traffic Study (included as Appendix M of this DEIR) and CalEEMod version 2011.1.1.

The analysis includes the benefit of reductions from the regulatory programs such as Pavley, LCFS and Advance Clean Cars. AB 1493 ("the Pavley Standard") requires ARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. The CalEEMod model includes emission reductions for non-commercial passenger vehicles and light-duty trucks of model year 2017 – 2025. Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by ARB. The regulation went into effect on April 15, 2010, and requires a reduction in the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. It imposes fuel requirements on fuel that will be sold in California that will decrease GHG emissions by reducing the full fuel-cycle and the carbon intensity of the transportation fuel pool in California. Reductions due to Low Carbon Fuel Standards were further applied to CO₂ emission factors after adjustments from Pavley I for scenario years 2011 and after. This is also included in the CalEEMod model. The Advanced Clean Cars program, introduced in 2012, combines the control of smog, soot causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2015 through 2025. This regulation has not been incorporated into CalEEMod, and thus an estimate of the GHG emission reductions from the Advanced Clean Cars program were estimated separately.

Trip Type

In CalEEMod, the trip type breakdown describes the purpose of the trip generated at each land use. For example, the trip type breakdown indicates the percentage of trips generated at single family home for work, for shopping, and for other purposes. Two sets of trip type breakdowns are used in CalEEMod⁴⁵.

- **Residential Trips** – These trips include home-work (H-W), home-shop (H-S), or home-other (H-O). A home-work trip represents the trip from the home to the workplace. A home-shop trip represents the trip from the home to a land use where shopping takes place (generally retail). A home-other represents all other types of trips generated from the resident such as school, entertainment, etc. The trip type breakdown in CalEEMod is from district supplied information or the 1999 Caltrans Statewide Travel Survey is used as default or specific information obtained from the various Districts.
- **Commercial Trips** – These trips include commercial-customer (C-C), commercial-work (C-W) and commercial-nonwork (C-NW). A commercial-customer trip represents a trip made by someone who is visiting the commercial land use to partake in the services offered by the site. The commercial-work trip represents a trip made by someone who is employed by the commercial land use. The commercial-nonwork trip represents a trip associated with the commercial land use other than by customers or workers. An example of C-NW trips includes trips made by delivery vehicles of goods associated with the land use. The trip type breakdown from the number of workers and or truck trips from Institute of Transportation Engineers (ITE) and an analysis of information provided for the South Coast Air Basin (Basin) was used as default to assign the trip type breakdowns for all land uses in CalEEMod.

⁴⁵ SCAQMD, 2011, California Emissions Estimator Model User's Guide, Appendix A, page 20. Version 2011.1. February. Available at: <http://www.CalEEMod.com/>. Accessed: February, 2013.

Primary Trip Length

In CalEEMod, the trip lengths are based on the Southern California Associate of Governments (SCAG) traffic model to more accurately (and conservatively) represent the potential trip lengths based on the Project location. The average trip length from the SCAG model was used to estimate the trip lengths associated with the different trip types as simulated in the CalEEMod version 2011.1.1.⁴⁶

External Trip Lengths

A Project specific assessment of trip length was conducted to determine the appropriate distance to calculate VMT. The Project specific average trip length for all 'external' trips was estimated by LSA using the SCAG Regional Transportation Plan (RTP) traffic model, which resulted in the average trip length 13.49 miles. However, the RTP average trip length is not broken down into CalEEMod's categories of 'home-work' (H-W), 'home-shopping' (H-S), and 'home-other' (H-O).

The external trip length for 'home-work' (H-W), 'home-shopping' (H-S), and 'home-other' (H-O) external trip lengths were derived from the SCAG RTP model average trip length by averaging the trip lengths by type of trip based on the Project location and trip ratios. Based on the CalEEMod default trip type percentages, and the ratios of trip lengths by trip types, the trip lengths by trip types were estimated.

CalEEMod provides default options for a 'rural' and 'urban' setting for the various geographic areas in California. For the South Coast Air Basin, a review of these default trip lengths showed that the 'rural' option likely overestimates the likely trip lengths while the 'urban' option may underestimate the potential trip lengths based on the potential job centers and nearest commercial-retail 'attraction' (e.g., Target Store is 8 miles from the Project site) relative to the Project site⁴⁷.

Since the CalEEMod 'urban' default trip lengths arguably underestimate the potential H-W trip lengths, even though there are many employment centers closer to the Project site as shown on Table 58 of the Climate Change Technical Report, the 'rural' H-W trip lengths was assumed in this calculation, while the 'urban' H-S and H-O trip lengths were used. The results of this derivation are consistent with the SCAG RTP average trip lengths for each of the three trip types for the Project.

Given the default trip type breakdown from CalEEModTM, the weighted average trips lengths were estimated as shown in Table 40 of the Climate Change Technical Report for both Project "with" and "without" NC overlay options. Thus, based on the overall average Project trip length of 13.49 miles as provided in the Traffic Study, the external trip lengths for H-W, H-S, and H-O trip types were estimated to be 19.34, 8.00, and 10.44 miles, respectively. The same assumptions are included for the ARB 2020 NAT scenarios.

Internal Trip Lengths

The analysis incorporates an emissions estimate for internal trips (i.e., those that originate and end within the Project boundaries). The Traffic Study estimated the internal trips for the residential land uses, which is based on the traffic models required for the traffic analyses. These traffic models likely underestimate the number of internal trips that may occur because the City's traffic modeling approach

⁴⁶ SCAQMD, 2011, California Emissions Estimator Model User's Guide, Appendix A, pages 20-21. Version 2011.1. February. Available at: <http://www.CalEEMod.com/>. Accessed: February, 2013.

⁴⁷ Personal communication with LSA, 2013.

was very conservative in only assuming 12.7 percent and 6.8 percent of internal trips for the "with" and "without" overlay options, respectively. Whereas given the uses and locations of the Project a much higher internal capture rate could be expected⁴⁸.

Based on the estimate of internal Project trips as provided in the Traffic Study, and CalEEMod assumptions regarding the trip type breakdown (i.e., H-S trips are 19.2% of the total trip generation, and H-O trips are 40.6% of the total trip generation), a modified trip length for the H-S and H-O trip types was estimated to account for the internal trips. The internal trip lengths for the H-S and H-O trip types were estimated by using a weighted-average approach based on the number of 'internal trips' and 'external trips' for the H-S and H-O trip types. The internal trip length was estimated based on the maximum distance between residential and commercial locations within the Project site, while the external trip length as that as described above. The results of this analysis are shown in Table 41 and Table 42 of the Climate Change Technical Report for the Projects "with" and "without" NC overlay options, respectively. The same assumptions are included for the ARB 2020 NAT scenarios.

Trip Reductions

The Project will reduce trip generation due to Transportation Demand Management (TDM) features. The estimates of the trip reductions from TDM are shown in Table 43 and 44 of Climate Change Technical Report for the Projects "with" and "without" NC overlay option, respectively. The reductions are based on published studies that provide estimates for trip reductions that are expected to occur based on various TDM features. LSA evaluated the TDM features and the published studies^{49, 50}. The TDM Project Design Features (PDF) include the following:⁵¹

- Bicycle-oriented infrastructure: Trip reduction applies to non-residential projects that provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand, and for long-term bicycle parking that is provided at apartment complexes or condominiums without garages.
- Pedestrian-oriented infrastructure: Reductions for pedestrian-oriented infrastructure have been derived based on the average trip length. This measure is applied for pedestrian network including interconnected street network, accessibility to transit, safe pedestrian crossings; adjusted for project specific trip length.
- Traffic calming features: This reduction applies to roadways designed to reduce motor vehicle speeds and encouraging pedestrian and bicycle trips.
- Transit infrastructure: This reduction applies to improving connectivity to public transportation.

⁴⁸ Personal communication with LSA, 2013.

⁴⁹ SMAQMD, 2010. Recommended Guidance for Land Use Emission Reductions. Available at: <http://www.agendanet.saccounty.net/sirepub/cache/2/kar0mfubuhzgix0scobdonwvz/496048012212012102543766.PDF>. Accessed: December, 2012.

⁵⁰ CAPCOA, 2008 CEQA Climate Change. January. Available at: <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>. Accessed: September, 2013.

⁵¹ Reduction percentages based on information provided by LSA Associates, Inc. Also, based on SMAQMD, 2010. Recommended Guidance for Land Use Emission Reductions. Available at: <http://www.agendanet.saccounty.net/sirepub/cache/2/kar0mfubuhzgix0scobdonwvz/496048012212012102543766.PDF>. Accessed: December, 2012.

In addition, the analysis includes an estimate for trip reductions for an estimated participation of residents who telecommute.

The ARB 2020 NAT scenarios assume that the TDM measures described above are not included since these are Project specific design features that have been specifically incorporated to help reduce trip generation. The telecommuting reduction, however, is still incorporated into the ARB 2020 NAT scenarios given that this is not a specific Project Design Feature. The trip reduction estimates for the ARB 2020 NAT scenarios are shown in Table 45 and Table 46 of the Climate Change Technical Report.

Pass-by and Diverted Trips

Trip link types further describe the characteristics of the trip attracted to each land use, whether it is a primary trip, a diverted link trip, or a pass-by trip. For example, a commercial customer pass-by trip could be a person going from home to shop on his/her way to work. In addition, a commercial customer diverted-link trip could be a person going from home to work, and on its way making a diversion to shop. Pass-by trips generate virtually no additional running emissions but could generate additional resting and startup emissions. Diverted trips generate less running emissions compared to primary trips, and can also generate additional resting and startup emissions.

The percentage of pass-by trips was based on the Project-specific Traffic Study (Appendix M) and it was conservatively assumed that there were no diverted trips. In addition, mixed-use design that provides more convenient access to commercial land uses by residents, and a reduction in trips. The mobile source inputs are reported in Tables 47 and 48 of the Climate Change Technical Report for the Project "with" and "without" NC options, respectively. The ARB 2020 NAT scenarios assume the same trip lengths as the Projects. The mobile source inputs are reported in Tables 49 and Table 50 of the Climate Change Technical Report.

Mobile Source Emissions Scenarios

Project 2020

The Project "with" NC overlay option was estimated to generate approximately 165,000 VMT/yr and was estimated to result in 67,011 MTCO₂e/yr, as shown in **Table 5.7-J – Traffic-Related GHG Emissions Summary**.

The Project "without" NC overlay option was estimated to generate approximately 157,000 VMT/yr and was estimated to result in 63,759 MTCO₂e/yr, as shown in **Table 5.7-J**.

NAT 2020

The ARB 2020 NAT "with" NC overlay scenario is estimated to generate approximately 170,000 VMT/yr and was estimated to result in 88,504 MTCO₂e/yr, as shown in **Table 5.7-J**. The Project "with" NC overlay is estimated to have a 24.28 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions.

The ARB 2020 NAT "without" NC overlay scenario is estimated to generate approximately 163,000 VMT/yr and was estimated to result in 84,573 MTCO₂e/yr, as shown in **Table 5.7-J**. The Project "without" NC overlay is estimated to have a 24.61 percent reduction of GHG emissions as compared to the ARB 2020 NAT scenario for this category of emissions.

Consistent with the AB 32 Scoping Plan, the ARB 2020 NAT scenario assumes that the Pavley, LCFS regulations, and Advanced Clean Car Program are not in place, and that the various Project commitments to TDM features have not been included.

Table 5.7-J – Traffic-Related GHG Emissions Summary

Scenario	Vehicle Miles Traveled (VMT/yr)	CO ₂ e Emissions (MT/yr)
Project 2020 with NC Overlay	164,899,906	67,011.28
Project 2020 without NC Overlay	157,121,973	63,758.55
ARB NAT 2020 with NC Overlay	170,480,560	88,504.25
ARB NAT 2020 without NC Overlay	163,116,768	84,572.65

Source: ENVIRON, Tables 51, 52, 53 and 54

5.7.5.2 Conclusion
Consistency with AB 32

As described above, the AB 32 Scoping Plan determined that 1990 GHG emissions were 427 metric tonnes and predicted that if no actions were taken (NAT 2020), statewide emissions would be 596 million tonnes in 2020. Accordingly, AB 32's mandated decrease in GHG emissions from 596 to 427 tonnes is equivalent to a 28.5 percent emissions reduction across all sectors.

This DEIR compares the Project GHG emissions inventory to the GHG emissions that would occur from a development that would be built without the Project Design Features and energy reduction commitments made by the Project, and without the regulations that have been promulgated to comply with AB 32 (i.e., the ARB 2020 No Action Taken Scenario). The ARB 2020 NAT scenario represents the GHG emission inventory if projects continued to be built according to standards at the time AB 32 was enacted, and was the scenario that the ARB used to estimate the percent reduction in GHG emissions required to return to 1990 levels by 2020.

The Project is consistent with AB 32. **Table 5.7-K – Summary of GHG Emissions from Project with NC Overlay** and **Table 5.7-L – Summary of GHG Emissions from Project without NC Overlay**, provided below, and show total GHG emissions for construction and operation of the Project and the ARB 2020 NAT scenario for the "with" and "without" neighborhood commercial overlay option, respectively. Table 57 of the Climate Change Technical Report summarizes the key assumptions for the ARB 2020 NAT and Project scenarios that were described previously. For the Project "with" NC overlay GHG emissions inventory is 82,817 MT CO₂e per year and the ARB 2020 NAT GHG emissions inventory is 116,084MT CO₂e per year. For the Project "without" NC overlay, GHG emissions inventory is 79,779 MT CO₂e per year and the ARB 2020 NAT GHG emissions inventory is 111,930 MT CO₂e per year. The Projects "with" and "without" NC overlay are estimated to provide 28.66 and 28.72 percent reduction, respectively, from their associated ARB 2020 NAT scenarios. Both Projects "with" and "without" NC take into account the Project's sustainability commitments and changes in emission factors due to implementation of the Renewables Portfolio Standard (RPS) of 33 percent, the Pavley regulation mandating higher fuel efficiency standards for light-duty vehicles, LCFS and the Advanced Clean Cars program. In conclusion, the Project would achieve a 28.5 percent reduction consistent with AB 32 emission reduction numeric

threshold. Because GHG emissions are being considered a cumulative impact and several third-party agency actions are necessary for the state to achieve the AB 32 reduction targets, the City concludes that the Project’s GHG emissions may potentially result in a **significant and unavoidable cumulative impact**. Please see Section 5.7.8 for further discussion of the Project's cumulative environmental effects.

Table 5.7-K – Summary of GHG Emissions from Project with NC Overlay

Emission Category	CO ₂ e Emissions		% Change from NAT
	2020 Project (MT/yr)	2020 NAT (MT/yr)	
Area	1,540	2,336	-34.07%
Energy use	8,034	16,589	-51.57%
Street Lighting	56	143	-60.87%
Water Use	4,601	6,254	-26.43%
Solid Waste Disposed	488	1,014	-51.92%
Traffic	67,011	88,504	-24.28%
Sub-total	81,731	114,841	-28.83%
Construction Amortized	783.74	783.74	0.00%
Vegetation Amortized	302.79	459.30	-34.08%
Total	82,817	116,084	-28.66%

Source: ENVIRON, Table 55

Table 5.7-L – Summary of GHG Emissions from Project without NC Overlay

Emission Category	CO ₂ e Emissions		% Change from NAT
	2020 Project (MT/yr)	2020 NAT (MT/yr)	
Area	1,614	2,447	-34.05%
Energy use	8,185	16,277	-49.72%
Street Lighting	56	143	-60.87%
Water Use	4,601	6,254	-26.43%
Solid Waste Disposed	478	994	-51.92%
Traffic	63,759	84,573	-24.61%
Sub-total	78,692	110,687	-28.91%
Construction Amortized	783.74	783.74	0.00%
Vegetation Amortized	302.79	459.30	-34.08%
Total	79,779	111,930	-28.72%

Source: ENVIRON, Table 56

Consistency with Executive Order S-3-05

Governor Schwarzenegger's Executive Order (EO) S-3-05, as previously discussed, sets a goal of a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. AB 32 was enacted after EO-S-3-05 was signed. The Legislature declined to include the Executive Order's 2050 goal in AB 32, and again declined to use the EO's goal in adopting SB 375. Although the 2020 target is the core of AB 32 (discussed above), the 2050 target remains the goal of the EO. While EO S-13-08 declares executive goals, it does not establish any binding mandates. Although legal questions exist whether the Executive Order imposes requirements that are different than CEQA,

to present complete information this EIR considers how the Project demonstrates consistency with Executive Order S-3-05, bearing in mind that Executive Order S-3-05 is a goal and not a mandate.

Additional GHG-reducing control measures are likely to be introduced and implemented over time, and some of these measures are likely to reduce the Project's GHG emissions. The Harmony Specific Plan will be a phased development that will utilize the most up-to-date technologies and best practices available and feasible at the time of each phase of development. Moreover, as homes, buildings, roads, or other components of the Project are updated or replaced over time, they will be subject to the then-existing requirements for GHG emissions reductions, including those set forth to ensure compliance with Executive Order S-3-05, and will use then-existing technologies employed to achieve deep reductions in GHG emissions. Potential measures may include retrofitting or improving homes and buildings so that they are "zero net energy," i.e., they produce as much energy as they consume by using a combination of energy efficiency and low-carbon on-site generation, such as solar PV rooftops; increased use of low-carbon biofuels; increased use of or transition to zero-emission vehicles; and/or procurement of electricity from renewable sources. (See California Air Resources Board, Climate Change Scoping Plan First Update: Discussion Draft for Public Review and Comment at pp. 35, 86-89 (October 2013) (available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf). "As outlined in various 2050 scenario studies for California, achieving the governor's 2050 target will require dramatically improved vehicle energy efficiency, widespread electrification of on-road vehicles, development of low carbon liquid fuels for applications that cannot be easily electrified, and smarter, more integrated land use planning and development." Id. at p. 86.)

In addition, the California Air Resources Board's Scoping Plan to implement AB 32 looked beyond 2020 to assess whether implementing the Scoping Plan would achieve the State's long-term climate goals and determined that it would: "Governor Schwarzenegger's Executive Order S-3-05 calls for an 80 percent reduction below 1990 greenhouse gas emission levels by 2050. This results in a 2050 target of about 85 MMTCO₂E (total emissions), as compared to the 1990 level (also the 2020 target) of 427 MMTCO₂E. Climate scientists tell us that the 2050 target represents the level of greenhouse gas emissions that advanced economies must reach if the climate is to be stabilized in the latter half of the 21st century. Full implementation of the Scoping Plan will put California on a path toward these required long-term reductions. Just as importantly, it will put into place many of the measures needed to keep us on that path." (CARB 2008a, p. 117). According to the 2013 Scoping Plan Update, additional actions will be needed to continue reducing emissions and meet the 2050 goals in the face of anticipated population and economic growth. (CARB, Scoping Plan Update, 74 (Oct. 2013) (available at <http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>)(“Through AB 32 and related measures, California has a very certain trajectory of declining emissions to 2020. Beyond 2020, California's emissions are likely to continue to gradually decline through 2030, due to existing programs. However, the scale of reductions is less than is needed after 2020, and without additional actions, emissions are likely to begin increasing again in the 2030s, when population and economic growth begin to outweigh emission reductions from current policies Achieving the highly efficient, low carbon economy necessary to reach the 2050 target will require aggressive development and deployment of the cleanest technologies.”).) Further, impacts from off-site transportation and on-site energy usage will

be affected by broader policies, such as those related to increases in electric vehicle and mass transit usage as well as decreases in electricity demand and the amount of carbon associated with electricity generation. While there is no specific plan for reaching the 2050 goals of Executive Order S-3-05, the Project will not impede the policies described by the California Air Resources Board's Scoping Plan Update, or other future laws or policies, that will help achieve these goals. Because the Project will reduce emissions consistent with AB 32 and continue to incorporate additional emissions reducing measures as may be required by law, it is not inconsistent with Executive Order S-3-05.

Further, the Project is consistent with SCAG's RTP/SCS. The California Air Resources Board has recognized that compliance with Sustainable Communities Strategies is essential to meeting 2050 goals. (See California Air Resources Board, Climate Change Scoping Plan First Update: Discussion Draft for Public Review and Comment at p. 80.) "To date, seven Metropolitan Planning Organizations have adopted Sustainable Community Strategies. In addition to helping drive GHG reductions, these plans will help create more livable communities that offer greater housing and transportation options; improved access to resources and services; safer, more vibrant neighborhoods; and healthier lifestyles where people can live, work, and play without having to get into a car." *Id.* at p. ES-2. Because the Project will comply with the requirements of a regional Sustainable Communities Strategy, which ARB has recognized as essential to achieve 2050 goals, the Project will not impede the achievement of Executive Order S-3-05's goals.

Other Rejected Thresholds

The City considered but rejected analyzing the Project based on other policies and guidance documents. The City has included these thresholds to explain why they are not adopted or applicable to the proposed Project. As discussed below, guidance from the California Air Pollution Control Officers Association, and the SVJAPCD and BAAQMD draft thresholds, were rejected as potential significance thresholds for GHG impacts.

California Air Pollution Control Officers Association (CAPCOA)

In early 2008, CAPCOA released a document on consideration and mitigation of climate change impacts under CEQA, commonly referred to as the CAPCOA White Paper (CAPCOA 2008). The White Paper does not recommend any one approach to developing thresholds of significance or mitigation measures for climate change impacts from projects. Importantly, the White Paper itself notes that "This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which an air district or lead agency chooses to address greenhouse gas emissions in the context of its review of projects under CEQA." Rather, the White Paper describes two primary approaches for evaluating significance and describes the pros and cons of several variants on the two approaches: (1) Consistency with the targets specified in Executive Order S-3-05 and AB 32; or (2) Consistency with tiered significance criteria that are based on project size and type. The White Paper also contains an extensive list of mitigation measures and attempts to evaluate each suggested measure based upon its emission reduction potential, cost, technical and logistical feasibility, and secondary effects.

In August 2010, continuing its efforts to provide resources for lead agencies applying CEQA in the context of climate change, CAPCOA released its "Mitigation Report" that provides project proponents, government bodies, and members of the public with information and reliable methods to quantify project-level mitigation of GHG emissions (CAPCOA 2010). Factors used by CAPCOA to screen measures for inclusion in the Mitigation Report include: (1) feasibility of quantifying emissions; (2) availability of robust and meaningful data on which to base quantifications; and (3) a discussion about whether the measures—alone or combined with other measures—would result in appreciable GHG emission reductions. Like the CAPCOA White Paper, the Mitigation Report is intended to serve as a resource and does not advocate inclusion of specific mitigation measures for particular projects. However, as shown in Appendix A, the Project is consistent with numerous measures suggested in the SCAG RTP/SCS List of Measures that Could Reduce Impacts from Planning, Development and Transportation which are similar to the White Paper and Mitigation Report. However, since the document is not a regulatory authority neither document is appropriate as the basis of a significance threshold.

South Coast Air Quality Management District

In April 2008, SCAQMD convened a Working Group to develop GHG significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for industrial projects where the SCAQMD is the lead agency. As to all other projects, where the SCAQMD is not the lead agency, the Board has, to date, not adopted any thresholds (SCAQMD 2008). As explained above, the Working Group has not convened since the fall of 2010 and there is no plan to recommence the process.

For all other projects, SCAQMD staff's proposed draft threshold included a multiple tier analysis to determine the appropriate threshold to be used. The draft proposal suggests the following tiers: Tier 1 is any applicable CEQA exemptions, Tier 2 is consistency with a GHG reduction plan, Tier 3 is a screening value or bright line, Tier 4 is a performance based standard, and Tier 5 is GHG mitigation offsets. According to the presentation given at the September 28, 2010 Working Group meeting, SCAQMD staff proposed a Tier 3 draft threshold of 1,400 to 3,500 MT CO₂e/year depending on if the project was commercial, mixed use or residential (SCAQMD 2010). For the Tier 4 draft threshold SCAQMD staff presented a percent emission reduction target option but did not provide any specific recommendation for a percent emission reduction target, instead it referenced the San Joaquin Valley Air Pollution Control District (SJVAPCD) approach. The second Tier 4 option is to utilize an efficiency target for 2020 of 4.8 metric tons per service population per year for project level thresholds. The calculations behind this option are based on the same inventory calculated by ARB.

The 4.8 metric ton per service population tier is based on the same statewide 2020 GHG inventory in the ARB Scoping Plan, i.e., 295,530,000 MT CO₂e/yr. To derive the project level service population of 4.8 metric ton, SCAQMD took the 2020 statewide GHG reduction target for land use only (295,530,000 MT CO₂e/yr) and divided it by the total 2020 statewide population plus the total statewide employment for land use only (44,135,923 + 17,064,489) (i.e., (295,530,000 MT CO₂e/yr)/(44,135,923 + 17,064,489) =

4.8 MT CO₂e/yr).⁵² Thus, SCAQMD's threshold is another metric for assessing compliance with AB 32, just based on using numbers attributable to certain sectors and trying to break down the analysis to a finer grain based on a per person methodology.

Thus, SCAQMD's draft significance thresholds includes determining significance based on demonstrating a reduction that meets the ARB 2020 No Actions Taken scenario, consistent with AB 32's emission-reduction mandates. This information is the same basis for the 28.5 percent reduction significance threshold discussed in this DEIR. Because this threshold has been in draft form for many years and the air district has not moved forward with adopting it, it was not used as the threshold.

San Joaquin Valley Air Pollution Control District

In December of 2009, the San Joaquin Valley Air Pollution District (SJVAPCD) adopted *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (SJVAPCD Guidance) (SJVAPCD 2009a), and issued an accompanying staff report further describing its adopted approach entitled *Final Staff Report: Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act* (SJVAPCD Staff Report) (SJVAPCD 2009b). The SJVAPCD Guidance recognizes that determining a specific quantitative threshold above which a project's climate change impacts are significant is not possible and that those impacts must be considered in a cumulative context. The SJVAPCD Staff Report notes:

District staff has reviewed the relevant scientific information and concludes that the existing science is inadequate to support quantification of the extent to which project specific GHG emissions would impact global climatic features such as average air temperature, average annual rainfall, or average annual snow pack. Thus, District staff concludes that it is not feasible to scientifically establish a numerical threshold that supports a determination that GHG emissions from a specific project, of any size, would or would [not] have a significant impact on global climate change. In other words, the District was not able to determine a specific quantitative level of GHG emissions increase, above which the project would have a significant impact on the environment, and below which would have an insignificant impact. District staff further concludes that impacts of project specific emissions on global climatic change are cumulative in nature, and the significance thereof should be examined in that context. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man made and natural that occurred in the past; that is occurring now; and will occur in the future (SJVAPCD 2009b).

The SJVAPCD Guidance, therefore, suggests that a lead agency determine that a development project's GHG impacts are less than significant if it: (1) is exempt from CEQA; (2) complies with an approved GHG emission reduction plan or GHG mitigation program for the geographic area in which the project is located; (3) implements best performance standards (BPS) that reduce project emissions by at least 28.5 percent consistent with the AB 32's required emission reductions; or (4) does not implement BPSs, but

⁵² Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15. Available at: <http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/wkgrp15minutes.pdf>

demonstrates that a project's emissions would be reduced by at least 28.5 percent (SJVAPCD 2009a). SJVAPCD's performance standard approach is consistent with the statements of numerous experts and regulators that have recognized that a specific number cannot be identified, above which a project's impacts would significantly contribute to climate change, and that specific impacts cannot be attributed to a particular project. The SJVAPCD thresholds are not applicable to the City of Highland because the project is not in the air district but the project does achieve a 28.5% reduction as included in the SJVAPCD threshold.

Bay Area Air Quality Management District

On June 2, 2010, the Bay Area Air Quality Management District (BAAQMD) adopted new air quality thresholds (BAAQMD Thresholds), which include GHG thresholds of significance (BAAQMD 2010). The Thresholds are supported by documentation prepared by BAAQMD staff including CEQA Guidelines (BAAQMD Guidelines) and a Threshold of Significance Report (BAAQMD Report). The BAAQMD Report states that "[i]f left unchecked, GHG emissions from new land development in California will result in a cumulatively considerable amount of GHG emissions and a substantial conflict with the State's ability to meet the goals within AB 32". Based on the findings in the BAAQMD Guidelines and the BAAQMD Report, BAAQMD's Thresholds are aimed at helping lead agencies comply with AB 32, and for example, the service population metric is numerically based on the same reduction targets based on the analysis contained in the Scoping Plan made specific to the growth and population forecasted for the Bay Area.

Specifically, BAAQMD adopted significance thresholds for development projects at both the "project" and "plan" levels. The June 2010 BAAQMD Thresholds, suggest consideration of a project's cumulative contribution to GHG emissions, and state that a project within the Bay Area would have a less than significant cumulative GHG impact if it: (1) complies with a Qualified Greenhouse Gas Reduction Strategy; (2) emits less than 1,100 metric tons of CO₂e per year; or (3) emits less than 4.6 metric tons of CO₂e per year per service population member per year (i.e., residents and employees) (BAAQMD 2010). A proposed plan would be less than significant if it: (1) complies with a Qualified Greenhouse Gas Reduction Strategy or (2) emits less than 6.6 metric tons of CO₂e per year per service population member per year (BAAQMD 2010). Again, these performance standards have been derived in order to gauge compliance with AB 32 for projects within the Bay Area. In May 2011, BAAQMD revised its guidelines to reflect regulatory updates since the June 2010 adoption and to clarify certain the 2010 Thresholds (BAAQMD 2011). Litigation was filed against the BAAQMD guidelines in 2010. On August 13, 2013, the First District Appellate Court reversed a lower court decision that had invalidated the BAAQMD Thresholds, effectively re-instating the BAAQMD Guidelines (CBIA v. BAAQMD). Notwithstanding the recent Appellate Court decision, the BAAQMD Guidelines are not applicable to the City of Highland since Highland is not located in the Bay Area.

Threshold: *Would the proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

There are several potentially applicable plans and policies. One adopted plan that is directly applicable to the Project's GHG emissions as a whole is SCAG's RTP/SCS, which is discussed above. Because the SCS

is an applicable plan adopted for the purpose of reducing GHG emissions, City selected it as a threshold of significance. As discussed below, the Project is consistent with the SCAG's RTP/SCS (SB 375).

Under SB 375, the modeling analysis underlying the RTP/SCS is based on SCAG's growth forecast data for population and housing by areas divided into "transportation analysis zones" (TAZ). In considering whether a Project is consistent with the SCS, the City of Highland as lead agency is given discretion to determine how to allocate projected growth within its jurisdiction.⁵³

The Project is located in TAZ numbers 53848200, 53848300, and 53872200. SCAG's growth forecasting data assumes that this TAZ area will grow by 3,500 residential units and 1,248 new jobs by the year 2035.

The Project proposes between 3,467 and 3,632 residential units and is projected to employ between 124 and 451 people (see page 5.13-4, in Section 5.13 of this DEIR). **Table 5.7-M – Household and Employment Data** presents the number of households and employment for TAZ numbers 53848200, 53848300, and 53872200, the TAZ areas that include the Project, as well as the TAZs for the entire City of Highland in years 2008 and 2035⁵⁴ (SCAG 2012b). The change in household and employment numbers from year 2008 to 2035 is calculated by subtracting the 2008 data from the 2035 data. TAZ numbers 53848200, 53848300, and 53872200 are projected to have 3,950 households, which is higher than the 3,467 to 3,632 residential units projected for the Project. TAZ numbers 53848200, 53848300, and 53872200 are projected to have employment for 1,531 people, which is higher than the employment number of 124 to 451 people projected for the Project.

Table 5.7-M – Household and Employment Data

Location	Population	2008	2035	Change	Entitled ^a	Remaining Capacity
TAZ 538482000 ^b	Household	254	654	400	0	400
	Employment	172	629	457	0	457
TAZ 53848300 ^b	Household	25	1825	1800	0	1800
	Employment	4	651	647	0	647
TAZ 53872200 ^b	Household	171	1471	1300	0	1300
	Employment	107	251	144	0	144
City of Highland ^c	Households	15,400	20,300	4,900	1,096	2,904
	Employment	6,000	9,100	3,100	1,670	1,430

^a Entitled and pending entitlement information according to City of highland

^b The household and employment data by TAZ were provided in the shapefile downloadable from the Southern California Association of Governments website, available at <http://www.scag.ca.gov/forecast/index.htm>.

^c The household and employment data by City were provided in the Excel spreadsheet titled "Adopted 2012 Growth Forecast," provided on the Southern California Association of Governments website, available at <http://www.scag.ca.gov/forecast/index.htm>.

⁵³ It should be noted that SCAG is not requiring local jurisdictions to use TAZ-level data to determine consistency with the SCS. Lead agencies (including the City of Highland) maintain the discretion and will be solely responsible for determining consistency of any future project within the SCS. See SCAG RTP 2012-2013, SCS Background Documentation Appendix, p. 90 (available at http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_SCSBackgroundDocumentation.pdf, accessed September 30, 2013).

⁵⁴ The household and employment data by TAZ were provided in the shapefile downloadable from the Southern California Association of Governments website, available at <http://www.scag.ca.gov/forecast/index.htm>.

The City of Highland has entitled approximately 1,096 dwelling units and non-residential square footage potentially resulting in 1,670 jobs since 2008. Since the proposed Project will not be developing the same amount of dwelling units or square footage equivalent to the number of jobs estimated by SCAG for the TAZ covering the Project site, it is necessary to determine if the remaining jobs and units can be shifted elsewhere in the City. Given the small remaining capacity for units and jobs within the City, it is reasonable to assume that the 2035 projections will be achieved by 2035. Thus, the Project would not conflict with growth contemplated in the SCS and the Project is consistent with the SCS.

Additionally, the RTP/SCS includes an appendix listing examples of measures that could reduce impacts from planning, development and transportation. It notes, however, that the example measures are "not intended to serve as any kind of checklist to be used on a project-specific basis. Since every project and project setting is different, project specific analysis is needed to identify applicable and feasible mitigation." Appendix G.2 to this DEIR lists the measures that may reduce GHG emissions, along with a discussion of the extent to which the measures are applicable to the Project and the Project's consistency with those measures. The Project does not conflict with the RTP/SCS that was adopted for the purpose of reducing the emissions of GHG and therefore would not exceed the threshold of significance. Thus, impacts with respect to the Project's consistency with the RTP/SCS are **less than significant without the implementation of mitigation measures**.

5.7.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts upon GHG emissions or to reduce to below the level of significance. No mitigation measures are proposed since the Project's design meets the AB 32 reduction target for GHG emissions.

5.7.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

Although the proposed Project is expected to emit greenhouse gases, the emission of greenhouse gases by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of greenhouse gas from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's greenhouse gas emissions typically would be very small in comparison to state or global greenhouse gas emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. The Project's greenhouse gas emissions would not be considered to be substantial when compared to statewide greenhouse gas emissions. Due to the complex physical, chemical, and atmospheric mechanisms involved in global climate change, it is speculative to identify the specific impact, if any, to global climate change from one project's incremental increase in global greenhouse gas emissions. As such, a project's greenhouse gas emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. Therefore, the significance of potential impacts from the proposed Project's greenhouse gas emissions is determined on a cumulative basis. At a project-level, the Project's individual impact to greenhouse gas

emissions is **less than significant**. Please see the discussion under Section 5.7.8, below regarding the cumulative impacts.

5.7.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce is predicted to continue to expand. In order to achieve this goal, the California Air Resources Board is in the process of establishing and implementing regulations to reduce statewide greenhouse gas emissions. However, currently there are no applicable significance thresholds or specific reduction targets, and no approved policy or guidance to assist in determining significance at the project or cumulative level. Additionally, there is currently no generally accepted methodology to determine whether greenhouse gas emissions associated with a specific project represents new emissions or existing, displaced emissions.

As discussed above, the Project is consistent with the RTP/SCS and the reduction targets established by AB 32, even when conservatively using 28.5% as the reduction target even though more current ARB information indicates only 16% reductions are necessary. Design features incorporated into the Project would contribute to greenhouse gas reductions. These reductions represent a break from “business-as-usual” and support state goals for emissions reduction. Further, the Project does not impede the achievement of long-term emissions reduction goals set forth in Executive Order S-3-05.

However, global climate change cannot be addressed through efforts by the City of Highland alone or even by the state of California alone. Because of the breadth of climate change regulation, many efforts to reduce GHG emissions that are set forth in the RTP/SCS are outside of the City's jurisdiction and control. These other agencies at the regional, state, national and international level can and should adopt requirements to ensure cumulative GHG reductions.

For example, the SCS identifies transportation network actions and strategies such as expanding the use of transit modes in subregions such as BRT, rail, limited-stop service, and point-to-point express services utilizing the HOV and HOT lane networks, and collaborating with local jurisdictions to plan and develop residential and employment development around current and planned transit stations and neighborhood commercial centers. In areas without quality transit, the SCS identifies land use strategies to promote development patterns that result in fewer vehicle miles traveled and thus lower GHG emissions. Such land use strategies including local government adoption of updated zoning codes, General Plans, and other regulatory policies that promote neighborhood-oriented development, suburban villages, and revitalized main streets consistent with the 2012-2035 RTP/SCS Plan Alternative. These regional actions described in the RTP/SCS are, however, are outside of the City's jurisdiction and control but can and should be adopted by other public agencies.

As for AB 32, much of the reduction required to achieve the state's goals is from vehicle emissions which are outside the jurisdiction and control of the City of Highland. These measures have been adopted, but require further actions by third party agencies. As such, their operation is outside the control of the City of Highland.

In assessing the Project's impacts, it is appropriate to consider the GHG control measures that other agencies of the state of California have adopted or which are listed for adoption in the AB 32 Scoping Plan and the recently released draft Scoping Plan Update. Pursuant to the Scoping Plan Update, meeting California's 2050 GHG emissions reduction goals "will require ongoing changes in the way electricity is generated, transmitted, and consumed; the way vehicles, fuels, and systems move people and goods throughout California and its economy; the way we approach energy and water consumption, and waste in our homes and businesses; and the way we plan our communities, manage our natural resources and natural lands, and continue to grow our agricultural sector." California Air Resources Board, Scoping Plan Update, 74 (Oct. 2013) (available at <http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>). Specific policies recommended in the Scoping Plan Update include measures by the California Air Resources Board to improve vehicle emission fuel standards and efforts to put 1.5 million zero-emissions vehicles on the road by 2025 pursuant to Executive Order B-16-2012; measures to increase the use of renewable energy by public utilities; increasing energy efficiency in building stock; conserving agricultural lands, reducing the amount of electricity and natural gas used to convey, treat, and heat water; and managing forests, wetlands, and rangelands for carbon storage. In addition, the California Air Resources Board's Cap-and-Trade program is intended to further long-term reduction of GHG emissions, and a portion of the resulting revenues are dedicated to the purpose of reducing GHG emissions. The City believes that the agencies responsible for these measures will implement them to reduce and control GHG emissions. As a result, the Project will not have a significant impact on GHG emissions, either on a Project direct basis, or considering the Projects contribution to cumulative impacts.

This DEIR concludes that, while the Project is consistent with SCAG's RTP/SCS and meets AB 32's requirements to reduce emissions by 28.5 percent, as well as the City of Highland General Plan policies designed to reduce GHG impacts (in part because the Project's design features significantly reduce Project GHG emissions), some of the GHG emissions associated with the Project can be reduced only by measures to be implemented by other governmental agencies which are outside the City's jurisdiction. If these actions are not taken by other agencies, the Project would make a significant adverse contribution to cumulative impacts. Therefore, this DEIR recommends that the City, if it approves the Project, adopt a finding pursuant to Public Resources Code Section 21081(a)(2) that in order for the Project's cumulative GHG emissions to be less than significant, measures that are within the responsibility and jurisdiction of other public agencies can and should be adopted by such other public agencies must be implemented. Such measures would include measures by the California Air Resources Board to improve vehicle emission fuel standards or measures by the California Public Utilities Commission and other agencies to increase the use of renewable energy by public utilities to reduce emissions associated with the generation of electricity, which can and should be adopted by such other public agencies.⁵⁵ If such measures are implemented, the Project's contribution to cumulative GHG emissions would be less than significant. If such measures are not adopted or implemented by those agencies, the Project's contribution to cumulative GHG impacts would rise to the level of significance. The City of Highland

⁵⁵ Such a finding is suggested to be made as described by the California Supreme Court, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority et. al.*, at page 31: <http://www.courts.ca.gov/opinions/documents/S202828.PDF>

expects that such other agencies will implement these measures. Therefore, the Project is **not expected to have a significant direct or cumulative impact on GHG emissions.**

5.7.9 References

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5.8 Hazards and Hazardous Materials

This section evaluates the existing and potentially occurring hazards that may result from implementation of the Project. More specifically, this section describes potential effects on human health that could result from hazardous materials, an adopted emergency response plan or emergency evacuation plan and wildland fires.

The following discussion of potential impacts related to existing and potentially occurring hazards is based on the findings of the *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection Planning for the Greenspot Development*, prepared by Hunt Research Corporation on September 7, 2011 (Hunt(a)), the *Conceptual Fire Protection Plan* prepared by Hunt Research Corporation (Hunt(b)) in January 2014 and the *Phase I Environmental Site Assessment Report* prepared by Converse Consultants (referenced as Phase 1 ESA and cited as Converse) on Dec 14, 2011. Each report is contained in its entirety in Appendix H.1, H.2 and H.3 of this DEIR, respectively.

5.8.1 Setting

The Project site is comprised of former agricultural and undeveloped land. The *Phase I ESA* noted that the Project site is comprised of two separate and distinct areas:

The Braemar Property – The Braemar Property comprises the northwest 600 to 700-acres of the Project site. The southern portion of the Braemar Property is predominantly occupied by abandoned agricultural land (orchards), several unimproved roads, drainage and intermittent streams, and a residential dwelling. The northern portion of the Braemar Property is predominantly occupied by steep undulating terrain which is undeveloped.

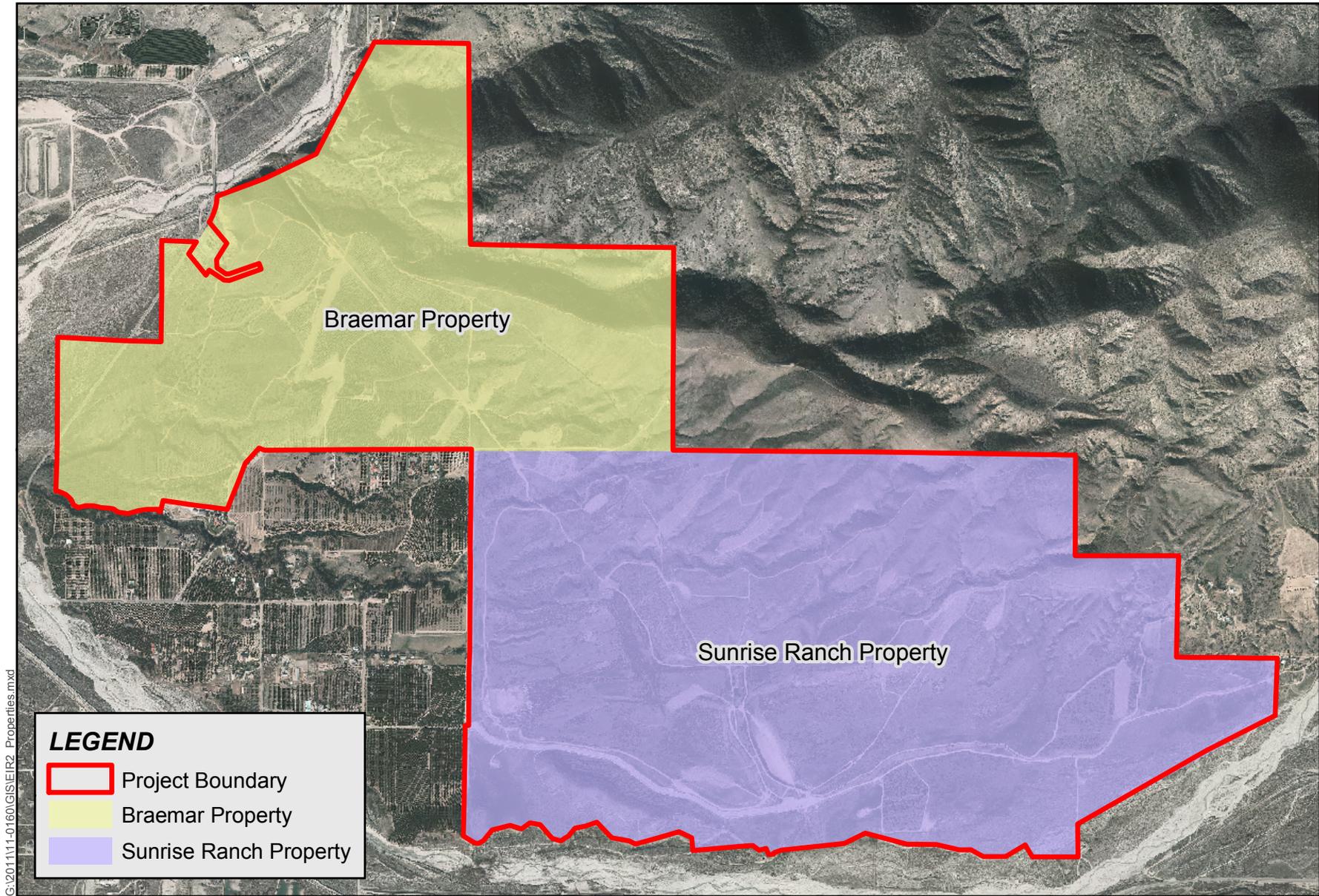
The Sunrise Ranch Property – The Sunrise Ranch Property comprises the southeast portion of the Project site and consists of approximately 1,000-acres. The southeast area of the Sunrise Ranch Property is predominantly occupied by undeveloped land, former structures, abandoned agricultural land (orchards), several unimproved roads, and one improved road (Newport Avenue) near the south perimeter. (Converse p. 4)

Figure 5.8-1 – Braemar Property and Sunrise Ranch Property shows the location of both properties on the Project site. It is important to point out that this Section of the DEIR describes the Project site as being comprised of two separate areas (the Braemar Property and the Sunrise Ranch Property), as summarized in the *Phase I ESA*. The locations of the Braemar Property and the Sunrise Ranch Property are shown in as shown in **Figure 5.8-1**.

Other Sections of this DEIR describe the Project site as being associated with at least three relatively large ranches (Featherstone Ranch, Brown Ranch, and Roberts Ranch). For the purposes of keeping this analysis consistent with the terms that are used in the *Phase I ESA*, the references to the “Braemar Property” and the “Sunrise Ranch Property” will be used throughout the remainder of this Section. It should also be noted that the “Braemar Property” is equal to roughly the same boundary as the “Featherstone Ranch” and the “Sunrise Ranch Property” is equal to roughly the same boundary as the “Brown Ranch.”

Field reconnaissance conducted for the *Phase I ESA* reported the following structures and improvements on the northwest portion of the Project site (Braemar Property):

- An approximate 500 square foot wood frame residential dwelling is located near the south center portion of the Braemar Property. The structure is occasionally occupied by the caretaker of the Property's active agricultural fields. At the time of the field reconnaissance, the structure was unoccupied. However, it should be noted that this structure was removed in 2012.
- Two steel water tanks, which appeared to be approximately 10,000 and 50,000-gallons in storage capacity, are located near the southeast corner of the Braemar Property.
- Several water wells, which appeared to be used either for domestic water use (caretaker's residence) or agricultural irrigation, are located primarily in the south center portion of the Braemar Property and along the west perimeter.
- An approximate 50 square foot concrete block structure is located near the water well at the southeast corner of the Braemar Property.
- Several utility poles and pole mounted transformers are located primarily across the southern region of the Braemar Property.
- Several concrete irrigation standpipes and lines are located across the Braemar Property. The lines were partially buried.



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Sources: County of San Bernardino ISD, April 2012 (imagery); Converse Consultants, Phase 1 Environmental Site Assessment, Revised December 14, 2011.

0 2,000 4,000 Feet



Figure 5.8-1 - Braemar and Sunrise Ranch Properties
Harmony Specific Plan Draft EIR

The *Phase I ESA* reported the following structures and improvements currently occupy the southeast portion of the Project site (Sunrise Ranch Property):

- A concrete foundation of a former structure is located near the southwest corner of the Sunrise Ranch Property.
- Several concrete foundations of former structures and a concrete lined retention basin are located near the northeast corner of the Sunrise Ranch Property.
- Several concrete irrigation standpipes and lines are located across the Sunrise Ranch Property. The lines were partially buried.
- An improved roadway (Newport Avenue) is located along the southern perimeter of the Sunrise Ranch Property. (Converse p. 6)

5.8.1.1 Historical Property Use of Project Site

According to historical information gathered by Converse, as a part of the *Phase I ESA*, the northwest portion of the Project site was primarily agricultural land as early as 1938 until the present. However, between 1995 and 2005, there appeared to be a decrease in density of agricultural fields. The northern area of the northwest portion of the Project site appeared to have been undeveloped land since at least 1938. The southeast portion of the Project site appeared to have been primarily agricultural land with two rural residences, and undeveloped land as early as 1938 until at least 1968. Between 1980 and 1995, the density of agricultural fields decreased until they appeared to be abandoned by 1995. Furthermore, the residential structures appeared to have been removed by 1995. Between 1995 and sometime prior to 2002, the majority of the southeast portion of the Project site appeared to have been used as a borrow site for the construction of the Seven Oaks Dam located northwest of the Project site. By 2005, the rural residences appeared to have abandoned and removed from the Project site. By the time of the Property reconnaissance in August 2011, the Project site appeared to be primarily fallow agricultural fields in the northwest and vacant/undeveloped land in the southeast.

5.8.1.2 Historical Uses of Adjacent Properties

According to historical information gathered by Converse, as a part of the *Phase I ESA*, the historical use of the adjoining properties appears to have been primarily undeveloped and agricultural land as early as 1938. By 1980 the south adjacent properties beyond Mill Creek appeared to increase in density of residential and commercial properties. By the time of the field reconnaissance conducted for the *Phase I ESA* in August 2011, the adjacent properties appeared to be primarily agricultural fields to the west, commercial and residential to the south beyond Mill Creek, rural residential and undeveloped land to the east, and undeveloped land to the north.

5.8.1.3 Environmental Conditions Observed on the Project Site

Braemar Area: During site specific field reconnaissance that was conducted as a part of the *Phase I ESA*, the field team made the following observations for the northwest portion of the Project site as illustrated in Figure 2.2 of Appendix H.2:

- Several hundred oil-filled smudge pots were observed near the south center perimeter of the Property. The smudge pots appeared to have been stacked together for storage. The ground surface beneath the smudge pots appeared to have been stained with oil.
- An approximate 1,000-gallon above ground storage tank was observed near the caretakers' residence on the south central portion of the Property. The tank was empty and appeared to have been abandoned at its current location. The ground surface beneath the tank did not appear to be stained.
- Several empty 55-gallon steel drums were observed throughout the south central portion of the Property. The drums appeared to be associated with areas of clandestine dumping of waste debris on the Property, predominantly in the erosion channels and low-lying areas of the Property. No staining was observed around the drums and other debris.
- Several water wells were observed across the Property. One apparent artesian well was observed near the caretakers' residence. Two other wells were observed near the southwest corner and the southeast corner (near the water tank). Most of the wells appeared to be abandoned.
- Although not observed, the caretakers' residence is assumed to be connected to a septic system or cesspool.
- Several debris piles were observed in low-lying areas of the southwest portion of the Property. The debris piles appeared to consist of used automotive tires, wood, metal, concrete, asphalt, furniture, appliances, paint buckets, used oil containers, 55-gallon drums, produce boxes, and miscellaneous household debris. The debris piles appeared to be associated with clandestine dumping on the Property.

Sunrise Ranch Area: In addition, during the site specific field reconnaissance the field team also made the following observations for the southeast portion of the Project site Figure 2.3 of Appendix H.2:

- Approximately 100-200 smudge pots were observed near the southeast corner of the Property. The smudge pots appeared to have been stacked together for storage. The ground surface beneath the smudge pots appeared to have been stained with oil.
- An abandoned propane tank was observed on top of a ridgeline near the northeast corner of the Property. The tank appeared to be in fair condition.
- Three areas of drums were noted on the Property. The first area of drums (2-4 drums) is near the west center of the Property. The drums appeared to have been used for target practice. The second area of drums (1-2 drums) was located near the former structure on the east side of the Property. The third set of drums (3-4 drums) is located near the northeast corner of the Property in a valley. The drums are co-located with several pieces of construction equipment. Two of the drums appeared to have swelled. No staining was observed on the drums or the ground surface.

- A dry retention basin was observed near the south central portion of the Property near the terminus of Newport Avenue. The retention basin appeared to be remnants of the former borrow site activities conducted on the Property.
- Two (2) areas of former structures were observed on the Property. The first former structure area is located near the southwest corner of the Property at the terminus of the historic location of Newport Avenue. The only remaining portion of the structure is the concrete foundation. The second former structure area is located near the east perimeter of the Property. The only remaining structures are concrete foundations of at least two buildings and a concrete lined retention basin (empty).
- Although not observed, the two former structures are assumed to have been connected to a septic system or cesspool.
- Several debris piles were observed in low-lying areas of the southeast portion of the Property and along Newport Avenue. The debris piles appeared to consist of used automotive parts, wood, metal, concrete, asphalt, furniture, appliances, used oil containers, 55-gallon drums, used automotive batteries, and miscellaneous household debris. The debris piles appeared to be associated with clandestine dumping on the Property.
- Two shipping containers, dilapidated construction equipment (two dozers, a backhoe, a front-end loader, an empty tank trailer, and a burned dump truck), metal debris, and drainage pipes were observed near the northeast corner of the southeast portion of the Property. The shipping containers appeared to have been burned. The interior of the containers contained a burned car, lawn equipment, and miscellaneous repair parts.
- Several commercial beehives were observed on the south central portion of the Property, south of Newport Avenue. The beehives appeared to be actively cultivated.

Other Observations:

- Several unimproved roads cross the Property east to west and north to south. An asphalt paved road (Newport Avenue) crosses the Property along the southwest perimeter.
- Several concrete irrigation standpipes and lines were observed across the Property. The irrigation lines appeared to be partially buried. There appears to be a potential for asbestos-containing transite to be present.
- Two abandoned automobiles were observed near the east perimeter of the Property and the north central portion of the Property.
- Several utility-owned pole-mounted transformers were observed across the Property. No leaks or stains were noted on the transformers.
- Several earthen dams were observed near the southeast corner of the northwest portion of the Property. The earthen dams appeared to have been used for stormwater retention. No stains or debris were observed on or protruding from the dams.

5.8.1.4 Environmental Conditions on Adjoining Properties

The following adjoining properties were identified in the *Phase I ESA*:

- Seven Oaks Dam, 32330 Santa Ana Canyon Road. This site is located adjacent to the northwest of the Property across the Santa Ana River and was identified as a San Bernardino County Fire Department (SBCFD), Hazardous Materials Division Permitted site. No violations were reported for the site.
- Santa Ana River #3 Generating Station, 32387 Greenspot Road. This site is located adjacent to the west of the Property along Greenspot Road and was identified as a Historical and Active Underground Storage Tank (UST) site. No leaks or violations have been reported for the site.
- H.G. Alland, 9309 Garnet Street. This site is located adjacent to the southwest of the Property and was identified as a San Bernardino County Fire Department (SBCFD), Hazardous Materials Division Permitted site, and a Historical and Active Underground Storage Tank (UST) site. No leaks or violations have been reported for the site.

5.8.1.5 Emergency Response

The purpose of emergency preparedness is to protect the health, safety, and welfare of the general public during and after natural and human emergencies. These emergencies include flooding, high winds, earthquakes and other geologic hazards, hazardous material accidents, and wildfire. The City has adopted the City of Highland Emergency Plan. The City also has a five-year plan that outlines fire hazards and risks, and present and future fire protection needs.

The City participates in the Statewide Master Mutual Aid Agreement; Mutual Aid Agreements with the City of San Bernardino and the San Bernardino County Sheriff's Department; and automatic aid agreements with the cities of Redlands and Yucaipa, the California Department of Fire (CALFIRE), and the U.S. Forest Service. The American Red Cross also provides a wide range of emergency response support services to the City ranging from single residential fire to community-wide disaster relief. The Red Cross has an area disaster action team coordinator who will respond to emergencies within an hour of notification to estimate the damage and the need for further relief. The Red Cross works closely with the CALFIRE and the school districts to provide damage assessment, shelter for families left homeless by a disaster and referral services to affected households that need further assistance from state and federal agencies or the Red Cross. Red Cross personnel also assist with evacuations, identifying missing persons, and reuniting displaced families.

The current San Bernardino County General Plan identifies potential evacuation routes in and around the City. Major evacuation routes within the surrounding region include, but are not limited to, Interstate 10, 15 and 215; State Highway 210, 31, 60, 66, and 71; and numerous major and secondary highways. Since earthquakes, floods, fires, or other disasters may render some or portions of these routes impassible, specific evacuation routes may need to be designated during an emergency depending on the nature and location of the particular disaster.

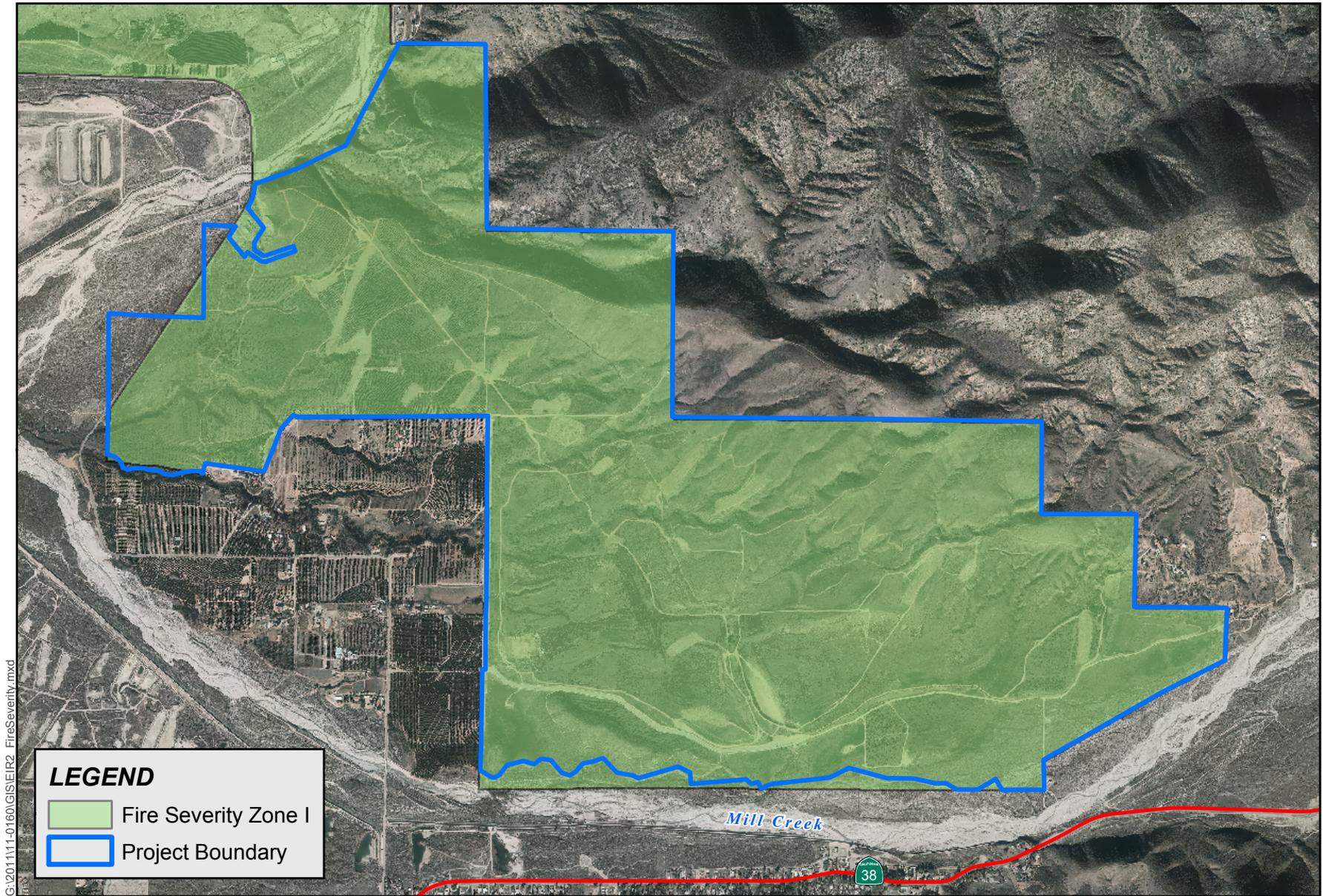
5.8.1.6 Wildland Fires

Wildland fires occur in large undeveloped areas and result from ignition of grass, brush, and other flammable vegetative materials. Wildland fires can burn large areas destroying vegetation leading to increased susceptibility to land or mudslides, and cause a great deal of damage to both structures and valuable open space land. As indicated in **Figure 5.8-2 – Fire Severity Zone**, the City General Plan designates the entire Project site as being within a Fire Severity Zone I and "Very High Fire Hazard Severity Zone"-Local Responsibility Area (Overlay Zone) as per City Council Resolution 2009-032, Sept 8, 2009. Conditions contributing to the severity of wildland fires are primarily related to weather, including temperature, humidity, and wind. Winds commonly referred to as "Santa Ana" winds typically occur during the fall months and pose a particularly significant hazard due to the tendency for the Santa Ana winds to be dry and hot air.

5.8.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impact to hazards and hazardous materials may be considered potentially significant if the Project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- 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;
- 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;
- for a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.



Sources: County of San Bernardino ISD, 2012 (imagery); City of Highland General Plan, Figure 6-6, Fire Hazard and Safety Overlay Areas

Figure 5.8-2 - Fire Severity Zone
Harmony Draft Specific Plan EIR

0 2,000 4,000 Feet



5.8.3 Related Regulations

A number of federal, state, and local laws have been enacted to regulate the management of hazardous materials. Implementation of these laws and management of hazardous materials are regulated independently of the CEQA process through programs administered by various agencies at the federal, state, and local levels. An overview of the key hazardous materials laws and regulations that apply to the proposed Project are provided below.

5.8.3.1 Federal

Several federal agencies regulate hazardous materials. These include the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR). In particular, CFR Title 49 governs the manufacture of packaging and transport containers; packing and repacking, labeling, and the marking of hazardous material transport. Other federal regulations such as the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA), regulate the cleanup of known hazardous waste sites. These agencies keep lists of known sites; these and other lists of known sites with hazardous materials contamination potential are checked to determine if any portion of the Project site will be affected. In summary, the major federal laws and issue areas include the following statutes:

- Resource Conservation and Recovery Act (RCRA) – hazardous waste management
- Hazardous and Solid Waste Amendments Act (HSWA) – hazardous waste management
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – cleanup of contamination
- Superfund Amendments and Reauthorization Act (SARA) – cleanup of contamination
- Emergency Planning and Community Right-to-Know (SARA Title III) – business inventories and emergency response planning

The EPA is the primary federal agency responsible for the implementation and enforcement of hazardous materials regulations. In most cases, enforcement of environmental laws and regulations established at the federal level is delegated to state and local environmental regulatory agencies.

In addition, with respect to emergency planning, the Federal Emergency Management Agency (FEMA) is responsible for ensuring the establishment and development of policies and programs for emergency management at the federal, state, and local levels. This includes the development of a national capability to mitigate against, prepare for, respond to and recover from a full range of emergencies.

5.8.3.2 State

Primary state agencies with jurisdiction over hazardous chemical materials management are the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). Other state agencies involved in hazardous materials management are the Department of Industrial Relations (State OSHA implementation), Office of Emergency Services (OES-California Accidental Release

Prevention implementation), California Department of Fish and Wildlife (CDFW), California Air Resources Board (CARB), California Department of Transportation (Caltrans), State Office of Environmental Health Hazard Assessment (OEHHA-Proposition 65 implementation) and the California Integrated Waste Management Board (CIWMB). The enforcement agencies for hazardous materials transportation regulations are the California Highway Patrol (CHP) and Caltrans. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulation. Southern California Air Quality Management District (SCAQMD) Rules and Regulations pertaining to asbestos abatement (including rule 1403), Construction Safety Orders 1529 (pertaining to asbestos) and 1532.1 (pertaining to lead) from Title 8 of the California Code of Regulations.

Hazardous chemical and biohazardous materials management laws in California include the following statutes:

- Hazardous Materials Management Act – business plan reporting
- Hazardous Waste Control Act – hazardous waste management
- Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65) – releases of and exposure to carcinogenic chemicals
- Hazardous Substances Act – cleanup of contamination
- Hazardous Waste Management Planning and Facility Siting (Tanner Act)
- Hazardous Materials Storage and Emergency Response
- California Medical Waste Management Act – medical and biohazardous wastes

State regulations and agencies pertaining to hazardous materials management and worker safety which are applicable to the Project are described below.

California Environmental Protection Agency

The California EPA (Cal/EPA) has broad jurisdiction over hazardous materials management in the state. Within Cal/EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the California Code of Regulations (CCR). Additional state regulations applicable to hazardous materials are contained in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Department of Toxic Substances Control

The DTSC regulates hazardous waste in California primarily under the authority of the Federal Resource Conservation and Recovery Act (RCRA), and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reductions,

cleanup, and emergency planning. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. As such, the management of hazardous waste of the nature and quantities which are regulated that is disposed of, treated, stored, or handled in the Project site would be under regulation by the DTSC to ensure compliance with state and federal requirements pertaining to hazardous waste. California law provides the general framework for regulations of hazardous wastes by the Hazardous Waste Control Law (HWCL) passed in 1972. DTSC is the state's lead agency in implementing the HWCL. The HWCL provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous waste," and requires permits for, and inspections of facilities involved in generation and/or treatment, storage and disposal of hazardous wastes.

Certified Unified Program Agency

A Certified Unified Program Agency (CUPA) is a local agency that has been certified by Cal EPA to implement the local Unified Program. The CUPA can be a county, city, or JPA (Joint Powers Authority). A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is a local agency that has not been certified by Cal EPA to become a CUPA but is the responsible local agency that would implement the six Unified Programs until they are certified. The Unified Program is related to the state SERCs and LEPCs that were established under both federal (EPCRA) and State authority relative to the Hazardous Materials Business Plan/Emergency Response Plan. While the CUPA structure does not specifically incorporate the SERC and LEPCs, both SERC and CUPA have found it beneficial to establish strong communication and coordination on hazardous materials issues. The CUPA Board now has a representative on the SERC, and members of LEPCs are also CUPA Board members. Common issues include insuring that hazardous materials, waste, and tank programs maintain strong coordination and communication for maximum consistency in program implementation. Shared data, joint resources, common forms, provision of emergency information, and regulatory review are other interests that are coordinated by the CUPA Board and SERC/LEPCs.

San Bernardino County is a member of the Southern California Hazardous Waste Management Authority (SCHWMA), and works on regional level to solve hazardous waste problems. The San Bernardino County Fire Department, Hazardous Materials Division (HMD) is designated by the State as the CUPA for the County of San Bernardino. The Fire Department focuses on the management of specific environmental programs at the local government level to address the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products. The CUPAs are also responsible for implementing the Leak Prevention element of the UST Program.

California Accidental Release Prevention Program (CalARP)

The CalARP program (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than 500 pounds, 55 gallons, or 200 cubic feet of gas of specific regulated substances at their facilities. The CalARP program regulations became effective on January 1, 1997, and include the

provisions of the Federal Accidental Release Prevention program (Title 40, CRF Part 68) with certain additions specific to the state pursuant to Article 2, Chapter 6.95, of the Health and Safety Code.

The list of regulated substances is found in Article 8, Section 2770.5 of the CalARP program regulations and include common cleaning products. However, as the minimum quantity that is regulated is 500 pounds or 55 gallons, it is unlikely that the types of businesses expected to locate within Harmony will use such quantities.

Worker and Workplace Hazardous Materials Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, Material Safety Data Sheets are to be available in the workplace, and employees are to properly train workers.

Hazardous Materials Transportation

The CHP and Caltrans are the enforcement agencies for hazardous materials transportation regulations. Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. The Office of Emergency Services (OES) also provides emergency response services involving hazardous materials incidents.

Investigation and Cleanup of Contaminated Sites

The oversight of hazardous materials release site often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. Air quality issues related to remediation and construction at contaminated sites are also subject to federal and state laws and regulations that are administered at the local level.

Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. These regulations would be applied during demolition, grading activities if previously unknown underground tanks were uncovered and known remediation activities such as clean-up of the adjacent dump.

Siting of Schools

The California Department of Education (CDE) School Facilities Planning Division has prepared the *Guide to School Site Analysis and Development*, which provides criteria for locating appropriate school sites in California. CDE's authority for approving proposed school sites is contained in California Education Code Section 17251 and in Title 5, Section 14010 of the California Code of Regulations. Further, Public Resources Code (PRC) Section 21151.8, State *CEQA Guidelines* Section 15186(c), and Education Code Section 17213(b) identify environmental requirements for school projects in addition to the standard

environmental analysis requirements of CEQA. These additional requirements are intended to ensure that, before a school district approves a school project at a given site, the site is evaluated to identify potential health effects that could result from exposure to hazardous materials, wastes, emissions, and substances. Prior to consideration of a school project for approval, the school district, in its role as lead agency, is required to consult with other agencies, before a school project is considered for approval. Health and safety are the primary concerns for school site selection, while specific environmental constraints and land use patterns are also important considerations.

The California Education Code (Section 17210 *et seq.*) also outlines the requirements of siting school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste. The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine the health and safety risk (if any) associated with a site. Recent legislation and changes to the Education Code identify DTSC's role in the assessment, investigation, and cleanup of proposed school sites. All proposed school sites that will receive state funding for acquisition and/or construction must go through a comprehensive investigation and cleanup process under DTSC oversight. DTSC is required to be involved in the environmental review process to ensure that selected properties are free of contamination, or if the property is contaminated, that it is cleaned up to a level that is protective of students and faculty who will occupy the new school. All proposed school sites must be suitable for residential land use, which is DTSC's most protective standard for children. The school district will be required to meet these regulations when siting and accepting school sites within the Project boundary.

California Department of Forestry and Fire Protection (CALFIRE)

The CALFIRE is dedicated to the fire protection and stewardship of over 31 million acres of California's privately owned wildlands. The Office of the State Fire Marshal (OSFM) supports the CALFIRE mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The OSFM provides for fire prevention by enforcing fire-related laws in state-owned or operated buildings, investigating arson fires in California, licensing those who inspect and service fire protection systems, approving fireworks as safe and sane for use in California, regulating the use of chemical flame retardants, evaluating building materials against fire safety standards, regulating hazardous liquid pipelines, and tracking incident statistics for local and state government emergency response agencies.

California Fire Plan

The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the CALFIRE.

California Fire Code

The California Fire Code (Title 24, Part 9) is based on the 2000 Uniform Fire Code and includes amendments from the State of California fully integrated into the code. The California Fire Code

contains fire safety related building standards referenced in other parts of Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code.

5.8.3.3 Local

San Bernardino County Office of Emergency Services (OES)

The Office of Emergency Services (OES) is a division of the San Bernardino County Fire Department and is responsible for disaster planning and emergency services coordination throughout the County, including the City of Highland. The goal of the OES is to improve public and private sector readiness, and to mitigate local impacts resulting from natural or man-made emergencies through disaster preparedness planning and appropriate response efforts with city departments, local, and state agencies. While OES does not directly manage field operations, it manages an Incident Command Post (ICP), to ensure coordination of disaster response and recovery efforts through its day-to-day program management and during an incident/disaster. The Division also manages and operates the Emergency Operations Center (EOC), which serves as the primary coordination point for disasters and major emergencies.

In the event of a disaster or an incident requiring complex coordination, pre-selected and trained individuals (responders) report to the San Bernardino County Operational Area (OA) EOC. The 100 plus responders have been trained to perform specific functions designated under the Standardized Emergency Management System (SEMS) to coordinate emergency management of disasters. These 100 EOC responders are available 24 hours a day, 7 days a week. OES conducts annual exercises in the EOC to test the readiness of various types of disasters and large-scale emergencies.

The OES is also responsible for the countywide Emergency Management Plan (EMP), which is currently under revision. The plan identifies hazards and response, roles and responsibilities, and other key activities of government during a disaster. The office also maintains copies of the EMPs for the 24 cities/towns in the OA. The OES assists county unincorporated communities and residents with local region preparedness by assigning an OES Officer to assist in meeting their local planning goals and needs. These mostly isolated unincorporated areas of the county may have the need for special considerations in a disaster.

City of Highland Municipal Code

The California Fire Code is codified in Title 8, Chapter 8.20, of the Highland Municipal Code.

City of Highland General Plan

Goal 4.8- Ensure the provision of adequate staffing, equipment and facilities to support effective fire protection and emergency medical services that keep pace with growth.

- Policy 1) Work with the fire department to ensure that response time standards and a high level of service are maintained.
- Policy 2) Ensure the City has adequate fire training facilities, equipment and programs for firefighters and inspection personnel, and education programs for the general public.

- Policy 3) Coordinate and cooperate with the East Valley Water District to maintain and/or upgrade water facilities to ensure adequate water supply is available for fire suppression operations.
- Policy 4) Ensure the availability of adequate fire flow prior to the recordation of residential tracts or parcel maps and prior to the issuance of commercial building permits by requiring the testing of all fire hydrants in the vicinity of the project at the applicant's expense. In the absence of adequate flow, require either the installation of on-site fire protection devices or improvements that upgrade the area's water system to accommodate an adequate flow.

Goal 6.5- Protect life and property from wildland–urban interface fires.

- Policy 1) Review the vulnerability of new development in areas with the potential for wildland-urban interface fires and incorporate appropriate mitigation measures in the conditions of approval.
- Policy 2) Ensure the adequate protection of proposed and existing development in areas subject to wildland-urban interface fires and balance the need for fire prevention measures with the need to preserve significant biological resources.

Goal 6.6- Maintain effective emergency preparedness and response programs and coordinate with appropriate public agencies and neighboring jurisdictions to develop a regional system to respond to daily emergencies and major catastrophes.

- Policy 1) Maintain the City's emergency plan including inventory of all local emergency resources.
- Policy 3) Evaluate the adequacy of access routes to and from hazard areas relative to the degree of development or use (e.g., road width, road type, length of dead-end roads, etc.).

5.8.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts through the design of the Project. The proposed residential and commercial uses within the Project are not expected to generate substantial use, storage, or handling of hazardous materials.

Circulation

The City Fire Department requires that all projects provide an appropriate number of ingress and egress points to each village and their associated planning areas. A Conceptual Fire Protection Plan, approved by the Fire Marshall and Fire Department, has been prepared for the Project and is included as Appendix H.3. All private and public roads will be designed to meet fire code to allow emergency access and proper evacuation routes. All future implementing projects within Harmony will be required to obtain approval from the City Fire Department to ensure adequate emergency access.

Fuel Modification Zones

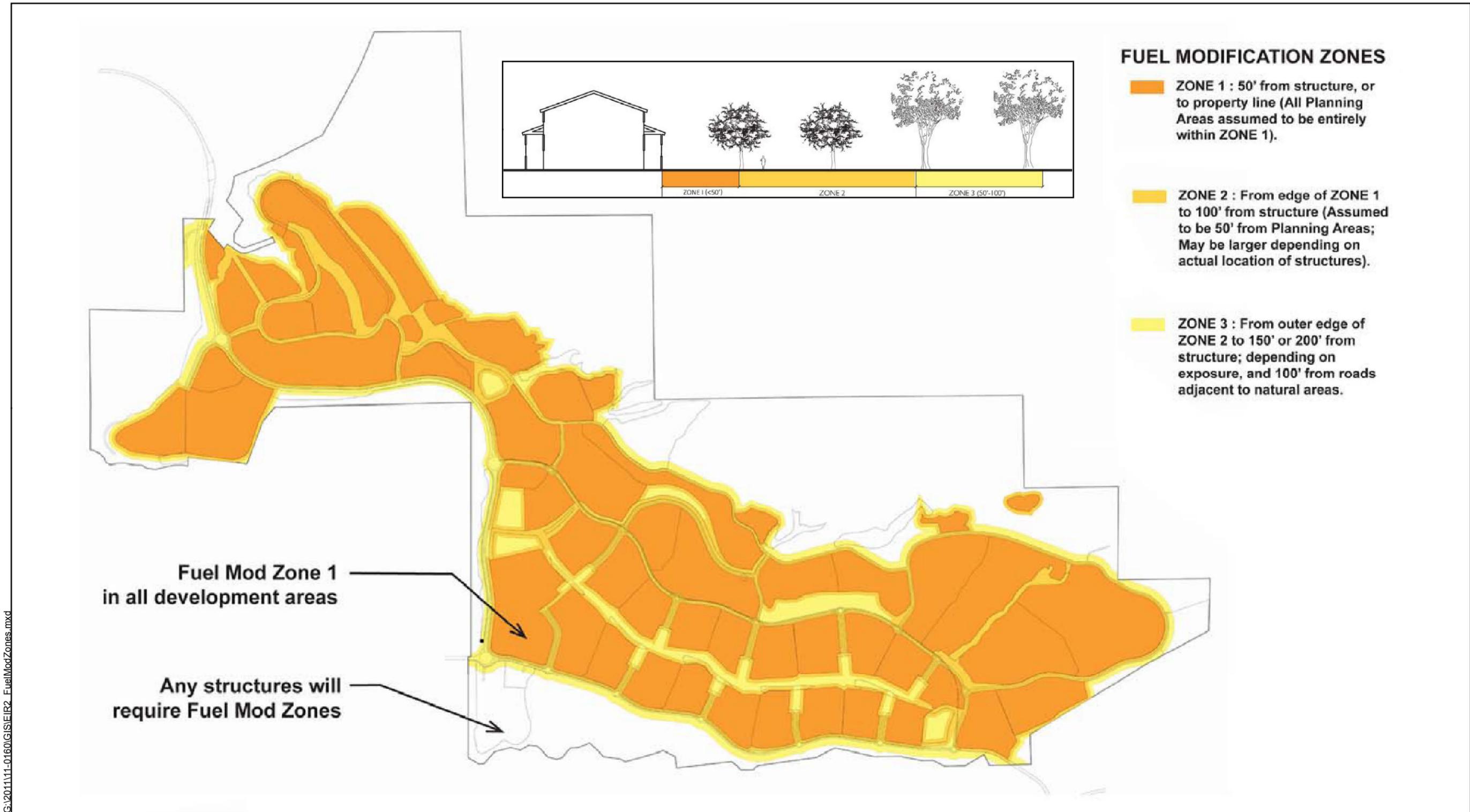
There is a Conceptual Fire Protection Plan for the Project, which is required by the City of Highland. The purpose of the plan is to evaluate the vegetation fire risk, potential structure fire risk, fire department response times, and to recommend mitigation in order to provide a reasonable level of fire protection.

The Conceptual Fire Protection Plan requires a 200-foot Fire Protection Zone on the northwest, north, northeast, and east perimeter exposures, as well as any slopes with a grade of 10 percent or more, and a 150-foot zone on the west, southwest, south, and southeast perimeter exposures and any slopes in those areas with a grade of 10 percent or more. The first 100 feet of a fuel modification area must be irrigated, and plantings must be selected from the master plant palette fuel modification list.

Each lot within the Project boundary shall have a Fuel Modification Zone, also referred to as Vegetation Management Zones. Fuel Modification Zones, as shown in **Figure 5.8-3**, are landscape areas that reduce the threat of fire through vegetation and maintenance, and are required in Harmony. There are three types of Fuel Modification Zones required in the Project boundary. Below is a summary of each:

1. Zone 1: Defensible Space (irrigated)
 - a. 0-50 feet on all sides of structures on private lots
 - b. Irrigation system required, hardscape encouraged, combustible materials kept from structures, and vegetation in the zone is limited to ground covers, green lawns, small ornamental plants and trees selected from appropriate climate zones.
2. Zone 2: Buffer (irrigated)
 - a. From end of Zone 1 to 100 feet from all sides of structures
 - b. Irrigation system required, hardscape encouraged, continual maintenance required
3. Zone 3: Thinning (irrigation not required)
 - a. From outer edge of Zone 2 to 150 to 200 feet from structure, depending on direction of exposure, on all perimeter lots, vacant properties, and roadways.
 - b. Maintenance of erosion control and soil stability with vegetation, vegetation thinned and maintained and continued maintenance required.
 - c. There shall also be a 50-foot zone within the development envelope extending outward from the edge of any natural parks, retention basins, flood control areas, drainages, and power line and utility easements.

Developers, the HOA, contractors and homeowners for all structures are required to submit detailed fuel modification zone location plans, landscape plans and vegetation management plans to the Fire Marshall for approval prior to construction and demonstrate compliance with this plan and Fire Department requirements.



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Source: Figure 3-1A from Conceptual Fire Protection Plan for Harmony by Hunt Research Corp., July 2013.

Figure 5.8-3 – Fuel Modification Zones
Harmony Specific Plan Draft EIR

5.8.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

The proposed Project will consist of the construction of a predominantly residential community, including some commercial uses, school, parks, public facilities, and open space; which are not uses which typically require the routine transport, use, or disposal of hazardous materials. The introduction of new commercial uses would result in a greater use of hazardous materials during construction and operation and would generate more hazardous materials than what currently exists because the site is vacant.

During construction, the proposed Project would involve the transport of general construction materials (i.e., concrete, wood, metal, fuel, etc.) as well as the materials necessary to construct the proposed Project. Construction activities would involve the use of hazardous materials such as fuels and greases for the fueling and servicing of construction equipment. Such substances may be stored in temporary storage tanks/sheds that would be located on the Project site. Although these types of materials are not acutely hazardous, they are classified as hazardous materials and create the potential for accidental spillage, which could expose workers. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out accordance with federal, state, and County regulations. No extremely hazardous substances (i.e., governed under Title 40, Part 335 of the Code of Federal Regulations) are anticipated to be produced, used, stored, transported, or disposed of as a result of Project construction. Therefore, any potential impacts regarding the handling of hazardous materials during construction of the Project will be **less than significant**.

While there is a possibility that operation of the new commercial uses that are proposed could transport, use, store, or dispose of small quantities of hazardous materials, at the specific plan level, it is impossible to know which specific commercial uses will be built and to quantify the future amount of hazardous materials that might be used by future commercial uses.

Nonetheless, the Project does propose commercial uses that can be expected to use small quantities of hazardous materials. Exposure of persons to hazardous materials could occur in the following manners: improper handling or use of hazardous materials or hazardous wastes during construction or operation of future developments, particularly by untrained personnel; transportation accident; environmentally unsound disposal methods; or fire, explosion or other emergencies. The types and amounts of hazardous materials would vary according to the nature of the activity. In some cases, it is the type of hazardous material that is potentially hazardous; in others, it is the amount of hazardous material that could present a hazard.

Whether a person exposed to a hazardous substance would suffer adverse effects depends upon a complex interaction of factors that determine the effects of exposure to hazardous materials: the exposure pathway (the route by which a hazardous material enters the body); the amount of material to which the person is exposed; the physical form (e.g., liquid, vapor) and characteristics (e.g., toxicity) of the material; the frequency and duration of exposure; and the individual's unique biological characteristics such as age, gender, weight, and general health.

Although the overall quantity of hazardous materials and waste generated in the Project area would increase, all new developments that handle or use hazardous materials would be required to comply with the regulations, standards, and guidelines established by the EPA, State and the County of San Bernardino related to storage, use, and disposal of hazardous materials.

Both the federal and state governments require all businesses that handle more than a specified amount of hazardous materials to submit a business plan to the appropriate regulating agency. Specifically, any new business that meets the specified criteria must submit a full hazardous materials disclosure report that includes an inventory of the hazardous materials generated, used, stored, handled, or emitted; and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The plan needs to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, 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. Therefore, any potential commercial/non-residential use built within the Project which might utilize hazardous materials, would be regulated under the federal and state requirements as listed above, and any potential impacts regarding the handling of hazardous materials will be **less than significant**.

Threshold: *Would the proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

The Project's location presents the potential for creation of a hazard to the public from existing off-site agricultural operations and from existing conditions on-site. Regarding the existing off-site agricultural operations, there are existing citrus orchard operations near the Project site, west of Emerald Street and south of Tres Lagos Street. Pesticide use by these operations is not anticipated to create a significant hazard to the Project's residents or the environment because these operations are separated by land uses such as Natural Open Space or Community Greenway or Parks which provide a buffer between residents and the off-site agricultural uses. Moreover, the adjacent citrus orchards are not anticipated to use aerial pesticide applications. As such, pesticide use would be localized within the adjacent properties that are downstream from the Project and the impacts are considered **less than significant**.

The *Phase I ESA* prepared specifically for the Project evaluated whether there is a potential for certain hazardous materials to exist on the Project site via a records search of databases of regulatory agencies, site reconnaissance, interviews, review of aerial photographs and historical maps. The *Phase I ESA* revealed three recognized environmental conditions (REC's) in connection with the Project site:

- The Property was historically used for agriculture from at least 1938 until the present. There is a potential for the presence of agricultural chemical residues in the surface and subsurface soils at the Property. The current and historical agricultural use of the Property is considered a REC.
- During field reconnaissance for the *Phase I ESA* several hundred oil-filled smudge pots were observed on the Project site. Several pots appeared to have been leaking and staining was

observed on the ground surface. The storage of hundreds of oil-filled smudge pots on the Project site is considered a REC.

- A site listed as “Seven Oaks Dam” located at Newport Avenue was identified in the LUST and SLIC databases. Based on a review of the reports, the site was located near the southwest corner of the southeast area (Sunrise Ranch area) of the Project site in the vicinity of a former structure. A no further action letter was issued in July 1997 and the status of the case was listed as closed/completed. The “Seven Oaks Dam” Newport Avenue site is considered a Historic REC (HREC).

In addition to the three REC’s identified on the Project site, the *Phase I ESA* also identified the following environmental concerns:

- Several debris piles of used automotive tires, wood metal, concrete, asphalt, furniture, appliances, paint buckets, used oil containers, empty 55-gallon drums, produce boxes, and miscellaneous household debris were noted as being scattered across the Project site.
- Several shipping containers and dilapidated construction equipment was noted as being located near the northeast corner of the Project site.
- An above ground storage tank is located near the caretakers’ residence on the northwest portion of the Project site.
- Earthen dams are located near the southeast corner of the northwest portion of the Project site that have the possibility of containing debris, hazardous materials, malodors and staining.
- Several irrigation standpipes and liens were observed across the Project site. The irrigation lines appear to be partially buried. There is a potential that underground transite (asbestos concrete) water pipes associated with the irrigation systems may be present on the Project site.
- Several debris piles containing various building materials were observed across the Project site. There is a potential that materials containing asbestos may be present in the piles. There is also a potential that the components of the debris plies may be coated with lead-based paint.

As implementation of the proposed Project would result in a new residential community, existing environmental concerns as indicated in the *Phase I ESA*, need to be remediated prior to the construction of new buildings. The *Phase I ESA* indicates that demolition of existing standpipes and lines could result in exposure of construction personnel and the public to hazardous substances such as asbestos from water pipes and lead from building materials and paints, pesticides from past agricultural uses, or other hazardous materials used or dumped on the site.

With that activity, construction workers and nearby residents and/or workers could potentially be exposed to airborne lead-based paint dust, asbestos fibers, and/or other contaminants. In addition, Project construction activities would also uncover soil contamination as a result of past agricultural operations and leaking oil filled smudge pots. This could result in a significant impact. However, compliance with existing regulations and implementation of **MM HAZ 1** through **MM HAZ 3** which requires that the contaminated ground surfaces be assessed and remediated and that hazardous

materials are disposed of properly by state licensed, qualified personnel according to applicable rules and regulations will ensure that impacts are reduced to **less than significant with mitigation incorporated.**

Federal and state regulations govern the renovation and demolition of structures where materials containing lead and asbestos are present. These requirements include: SCAQMD Rules and Regulations pertaining to asbestos abatement (including rule 1403), Construction Safety Orders 1529 (pertaining to asbestos) and 1532.1 (pertaining to lead) from Title 8 of the California Code of Regulations, Part 61, Subpart M of the Code of Federal Regulations (pertaining to asbestos), and lead exposure guidelines provided by the U.S. Department of Housing and Urban Development (HUD). Asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards. **Adherence to existing regulations**, which require appropriate testing and abatement actions for hazardous materials, would ensure that impacts are **less than significant.**

The United States Department of Transportation (DOT) Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the *Code of Federal Regulations*, and implemented by Title 13 of the CCR.

The transportation of hazardous materials can result in accidental spills, leaks, toxic releases, fire, or explosion. It is possible that licensed vendors could bring some hazardous materials to and from new retail-commercial sites within the Project area as a result of the proposed Project. However, appropriate documentation for all hazardous waste that is transported in connection with specific Project-site activities would be provided as required for compliance with existing hazardous materials regulations codified in Titles 8, 22, and 26 of the California Code of Regulations, and their enabling legislation set forth in Chapter 6.95 of the *California Health and Safety Code*. In addition, specific transporters shall comply with all applicable federal, state, and local laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste, including but not limited to Title 49 of the *Code of Federal Regulations*. **Compliance with all applicable federal and state laws** related to the transportation of hazardous materials, would reduce the likelihood and severity of accidents during transit, thereby impacts would be **less than significant.**

Hazardous materials are required to be stored in designated areas designed to prevent accidental release to the environment. The California Building Code (CBC) requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. **Compliance with all applicable federal and state laws** related to the storage of hazardous materials would maximize containment and provide for prompt and effective clean-up if an accidental release occurs, and therefore impacts are **less than significant.**

In summary, with implementation of mitigation measures **MM HAZ 1 through MM HAZ 3** and compliance with existing regulations such as SCAQMD Rules and Regulations pertaining to asbestos, DOT office of Hazardous Materials Safety regulations, and Titles 8, 22, and 26 or the CCR, would ensure that the public would not be exposed to any unusual or excessive risks related to hazardous materials. As such, impacts associated with the upset and accident conditions involving the release of hazardous materials into the environment would be less than significant. Therefore, the impacts to the public or environment from accidental release of hazardous materials either used on site or off site, or from pass through traffic along roadways will be **less than significant with mitigation measures incorporated**.

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

The Harmony Specific Plan provides for the development of one elementary school on an 8.3-acre site. The elementary school site is adjacent to a 5.0-acre joint-use neighborhood park at the center of the community to ensure equitable access for all future residents.

It is anticipated that the Project as proposed will not include land uses which result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile (1,320-feet) of an existing or proposed school. The proposed school site described above is subject to review and acceptance by school districts serving the Project site and the CDE. The quantity of hazardous materials that will be used in proposed commercial developments as a part of the Project is currently unknown. Accidental release or combustion of hazardous materials at new commercial developments could endanger residents or students in the surrounding community. However, the proposed school site is not within any of the commercial land uses in the Project area.

Federal, state, and local governments require all businesses that handle more than a specified amount of hazardous materials will be required to comply with the provisions of the County's Fire Code and any additional element as required in the California Health and Safety Code Article 1 Chapter 6.95 for the Business Emergency Plan. Because of the extensive storage and disposal protocols contained within the existing regulatory schemes with compliance to existing regulations, impacts associated with the exposure of sensitive receptors to hazardous materials are considered less than significant. It is not anticipated that land uses on site will store or handle hazardous materials in quantities which will require regulation with the possible exception of gasoline stations.

PRC Section 21151.8(a)(1) requires an EIR for a project involving the purchase of a school site or the construction of a new school by a school district include information that may be used to determine if certain hazards are present on or in proximity to the school site. Because the Harmony Specific Plan includes an approximately 8.3 acre elementary school site in Planning Area 19A, this information is provided below. The italicized text in the following paragraphs identifies the information required by PRC Section 21151.8(a)(1) and the regular text provides the information regarding Planning Area 19 A.

(A) The site of a current of former hazardous waste disposal site or solid waste disposal site, and if so, whether the wastes have been removed.

According to the Phase I ESA, the Project site has been historically used for agriculture from 1938 until the present. (Converse, p. v) There is no evidence in the Phase I ESA to indicate any portion of the Project site, which includes Planning Area 19A, has been a hazardous water or solid waste disposal site.

(B) A hazardous substance release site identified by the Department of Toxic Substances Control in a current list adopted pursuant to Section 25356 of the Health and Safety Code for removal or remedial action pursuant to Chapter 6.8 (commencing with Section 25300) of Division 20 of the Health and Safety Code..

The Project site (which encompasses Planning Area 19A) is not included on a hazardous materials sites list pursuant to Section 25356 of the Health and Safety Code (Converse, p. 31-32).

(C) A site that contains one or more pipelines, situated underground or aboveground, that carries hazardous substances, extremely hazardous substances, or hazardous wastes unless the pipeline is a natural gas line that is used only to supply natural gas to that school or neighborhood, or other nearby schools.

There are no pipelines that carry hazardous substances, extremely hazardous substances, or hazardous wastes located on or in the vicinity of the Project site including Planning Area 19A. (Converse, p. 21)

(D) A site that is within 500 feet of the edge of the closest traffic lane of a freeway or other busy traffic corridor.

PRC Section 21151.8(b)(9) defines “freeway or other traffic corridor” as roadways that, on an average day, have traffic in excess of 100,000 vehicles. The largest roadway in proximity to Planning Area 19A is Greenspot Road, which is designated as “Modified Special Highway B” in the Harmony Master Circulation Plan (see Specific Plan Figure 6-1). Greenspot Road does not have the capacity to accommodate 100,000 vehicles and is therefore not considered a busy traffic corridor.

The other subsections of PRC Section 21151.8(a) identify school district responsibilities regarding consultation to ascertain the location of facilities reasonably anticipated to emit hazardous materials (PRC Section 21151.8(a)(2)) and written findings that the governing body of a school district must make (PRC Section 21151.8(a)(3)) prior to a school district certifying an EIR or approving a negative declaration for the purchase of a schoolsite or construction of a new elementary or secondary school.

Therefore, through compliance with PRC Section 21151.8, impacts to existing or proposed schools from hazardous emissions or materials caused by the Project will be **less than significant**.

Threshold: *Would the proposed Project 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?*

The *Phase I ESA* (included as Appendix H.2) included an Environmental Data Resources (EDR) report of Standard Environmental Records Sources prepared specifically for the Project site. The EDR report

includes a records search of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The Project site is not included on a hazardous materials sites list pursuant to Government Code Section 65962.5 (Converse, p. 31). However, an orphan site listed as “Seven Oaks Dam” along Newport Avenue was listed as a LUST and a SLIC site. This site is listed as being located on Newport Avenue with a cross street of Sycamore Street. Information at the SBCFD confirmed the listing as being located on the Property in the vicinity of a former structure located in the southwest corner of the southeast area (Sunrise Ranch area) of the Property. According to the EDR report and files located at SBCFD, a kerosene tank and dispensers were discovered to have been leaking in 1994 during closure activities. Upon completion of preliminary assessments, only soil was discovered to have been impacted by the leak. In 1997, the site was remediated by excavation and disposal of the impacted soil. A no further action letter was issued in July 1997 and the status of the case was listed as closed/completed.

While the Project site is not specifically listed on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, the *Phase I ESA* revealed three recognized environmental conditions (REC’s) in connection with the Project site:

- The Property was historically used for agriculture from at least 1938 until the present. There is a potential for the presence of agricultural chemical residues in the surface and subsurface soils at the Property. The current and historical agricultural use of the Property is considered a REC.
- During field reconnaissance for the *Phase I ESA* several hundred oil-filled smudge pots were observed on the Project site. Several pots appeared to have been leaking and staining was observed on the ground surface. The storage of hundreds of oil-filled smudge pots on the Project site is considered a REC.
- A site listed as “Seven Oaks Dam” located at Newport Avenue was identified in the LUST and SLIC databases. Based on a review of the reports, the site was located near the southwest corner of the southeast area (Sunrise Ranch area) of the Project site in the vicinity of a former structure. A no further action letter was issued in July 1997 and the status of the case was listed as closed/completed. The “Seven Oaks Dam” Newport Avenue site is considered a Historic REC (HREC).

In addition to the three REC’s identified on the Project site, the *Phase I ESA* also identified the following environmental concerns:

- Several debris piles of used automotive tires, wood metal, concrete, asphalt, furniture, appliances, paint buckets, used oil containers, empty 55-gallon drums, produce boxes, and miscellaneous household debris were noted as being scattered across the Project site.
- Several shipping containers and dilapidated construction equipment was noted as being located near the northeast corner of the Project site.
- An above ground storage tank is located near the caretakers’ residence on the northwest portion of the Project site.

- Earthen dams are located near the southeast corner of the northwest portion of the Project site that have the possibility of containing debris, hazardous materials, malodors and staining.
- Several irrigation standpipes and liens were observed across the Project site. The irrigation lines appear to be partially buried. There is a potential that underground transite (asbestos concrete) water pipes associated with the irrigation systems may be present on the Project site.
- Several debris piles containing various building materials were observed across the Project site. There is a potential that materials containing asbestos may be present in the piles. There is also a potential that the components of the debris plies may be coated with lead-based paint.

Implementation of **MM HAZ 1** through **MM HAZ 3** which requires that the contaminated ground surfaces be assessed and remediated and that hazardous materials are disposed of properly by state licensed, qualified personnel according to applicable rules and regulations will ensure that impacts are reduced to **less than significant with mitigation incorporated**.

Threshold: *Would the proposed Project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project result in a safety hazard for people residing or working in the project area?*

The nearest airports are the San Bernardino International Airport (SBIA) and the Redlands Municipal Airport (RMA). SBIA is located approximately 6.1 miles west of the Project site, and RMA is located approximately 1.6 miles west of the Project site (Google Maps). The Project site is not in an airport influence area, and as such, is not subject to associated airport land use plans (GP, Figure 6-7). Therefore, **no impacts** will occur.

Threshold: *Would the proposed Project be 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?*

The proposed Project is not located within the vicinity of a private airstrip or heliport because the aforementioned airports are publicly owned and operated. Therefore, **no impacts** will occur.

Threshold: *Would the proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

As described in the Public Services Section (Section 5.14) of this DEIR, the City participates in mutual aid agreements with the City of San Bernardino, the San Bernardino County Sheriff's Department and automatic aid agreements with the Cities of Redlands and Yucaipa, the CALFIRE, and U.S. Forest Service. The San Bernardino County Fire Department Hazardous Materials Division provides emergency response services to cities within the San Bernardino County. If the City's Fire and Police Departments determine that an incident requires special expertise and equipment, they may also request assistance from the Countywide HazMat Team of the County Environmental Health Department. The HazMat Team includes a minimum of two fire specialists and two environmental health specialists who perform hazard identification, risk assessment, and actual control measures. HazMat is a cooperative organization structure that is intended to bring the maximum available equipment and special expertise to any given emergency situation.

In addition, the San Bernardino County Fire Department OES is responsible for disaster planning and emergency services coordination throughout the county. The OES prepares the countywide Emergency Management Plan. Implementation of the Project would not interfere with the implementation of this emergency response plan or evacuation route of the OES. Furthermore, the City Fire Department requires that all projects provide an appropriate number of ingress and egress points to each village and their associated planning areas. A Conceptual Fire Protection Plan, approved by the Fire Department, has been prepared for the Project and is included as Appendix H.3. All private and public roads will be designed to meet fire code to allow emergency access and proper evacuation routes. All future implementing projects within Harmony will be required to obtain approval from the City Fire Department to ensure adequate emergency access. The proposed Project will not impair the implementation of, or physically interfere with, an emergency response plan and/or emergency evacuation plan. Therefore, Project-specific impacts related to the impairment of or physical interference with an adopted emergency response or evacuation plan will be **less than significant**.

Threshold: *Would the proposed Project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Fire hazards threaten lives, property, and natural resources, and also present a considerable risk to vegetation and wildlife habitat. Fires occur in wildland, urban and wildland-urban interface areas.

Wildland fires occur in large undeveloped areas and result from ignition of grass, brush, and other flammable vegetative materials. Wildland fires can burn large areas destroying vegetation leading to increased susceptibility to land or mudslides, and cause a great deal of damage to both structures and valuable open space land. As indicated in **Figure 5.8-2**, the City General Plan designates the entire Project site as being within a Fire Severity Zone I. Conditions contributing to the severity of wildland fires are primarily related to weather, including temperature, humidity, and wind. Winds commonly referred to as “Santa Ana” winds typically occur during the fall months and pose a particularly significant hazard.

Urban fires usually result from sources within structures themselves and are generally related to specific sites and structures. The availability of fire fighting services is essential to minimizing loss. Effective fire protection in urban areas is based upon several factors, such as the age of structures, efficiency of circulation routes that ultimately affect response times, and availability of water resources to combat fires. More urbanized, developed areas of Highland generate general fire service needs. Typical calls for service in these urban areas include structure, vehicle, trash, and vacant lot field fires, as well as emergency medical assistance and response to traffic accidents.

Wildland-urban interface fires occur in areas where urbanized development meets wildland areas. Wind-driven wildland-urban interface fires pose a significant threat to lives and have increased potential to cause significant damage to structures. In wildland and wildland-urban interface areas, taking the proper precautions, such as the use of fire resistant building materials, implementing fuel modification zones, and maintaining vegetation clearance around structures can help protect developed lands from fires, thereby reducing the potential loss of life and property.

One of the Goals of the Harmony Specific Plan is to develop a land use plan responding to the unique environmental conditions of the area. Fire hazards were considered during the land use planning process. The Project site is located on the wildland-urban interface, an area with unique fire protection needs. Fuel modification zones—landscape areas that reduce the threat of fire through vegetation and maintenance—are required in Harmony and are called Fire Modification Zones. As shown in **Figure 5.8-3**, the Specific Plan requires a 200-foot Fire Modification Zone on the northwest, north, northeast, and east perimeter exposures, as well as any slopes with a grade of 10 percent or more, and a 150-foot zone on the west, southwest, south, and southeast perimeter exposures and any slopes in those areas with a grade of 10 percent or more. The first 100 feet of a fuel modification area must be irrigated, and plantings must be selected from the master plant palette fuel modification list.

A Conceptual Fire Protection Plan was prepared for the Project site, as described above in 5.8.4, Project Design Features and is included as Appendix H.3. Implementation of the plan, which identifies the locations of required Fire Protection Zones and Fuel Modification Zones, will ensure that detailed fuel modification zone location plans, landscape plans, and vegetation management plans will be submitted to the Fire Marshal for approval prior to construction; thus, demonstrating compliance with the Conceptual Fire Protection Plan and with all applicable Fire Department and Building Safety Requirements.

With implementation of the requirements of the City and the CBC (which include sprinkler systems in all residential units), the on-site staffed fire station (at an agreed upon trigger point), and implementation of the Conceptual Fire Protection Plan, impacts will be **less than significant without mitigation required**.

5.8.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce potential significant adverse impacts from hazards and hazardous materials.

MM HAZ 1: Prior to the removal, demolition, or disposal of any structures or debris from the Project site, the structures and debris shall be assessed to determine the presence of asbestos, lead-based paint, or any other hazardous materials are present. Any structure or debris containing asbestos, lead-based paint, or any other hazardous materials shall only be removed by state-licensed, qualified personnel in accordance with applicable rules and regulations. Removal, demolition, and disposal of structures and debris, including but not limited to: earthen dams, under-and aboveground storage tanks, septic systems, water wells, irrigation pipes, smudge pots, shipping containers, construction equipment, automotive tires, wood, metal, concrete, asphalt, furniture, appliance, paint buckets, used oil containers, empty 55-gallon drums, and produce boxes, shall conform to all federal, state, and local agency regulations, specifically with those required by the City of Highland and the Hazardous Materials Division of the San Bernardino County Fire Department.

MM HAZ 2: Prior to any ground disturbing activities on the Project site, to the extent not previously prepared and to properly assess and identify the presence of agricultural chemical

residues in the surface and subsurface soils within areas of the Project site that had been used for agricultural purposes, a Phase II Environmental Site Assessment (ESA) shall be performed by a registered environmental assessor (REA) and submitted to the City of Highland for review. If the Phase II ESA identifies any soils with chemical residues in excess of regulatory thresholds, a remediation plan shall be prepared and submitted to the City of Highland and any other regulatory agency with oversight for review and approval. No grading permit shall be issued for any portion of the Project site containing soils with chemical residues in excess of regulatory thresholds until that portion of the site has been remediated. If remediation entails removal of the contaminated soils, such soils shall be transported off site to a licensed disposal facility.

Because the surficial soils of the southeast portion of the Property identified as being used for the Seven Oaks Dam borrow site appear to have been significantly disturbed, or removed from the Property, concentrations of agricultural chemical residues are not anticipated to be above thresholds of concern in these areas. No further assessment of the former Seven Oaks Dam borrow site is required.

MM HAZ 3: If, while performing any Project-related site preparation or excavation, material that is believed to be hazardous waste as defined in Section 25117 of the California Health and Safety Code is discovered, the developer shall contact the City of Highland and the Hazardous Materials Division of the San Bernardino County Fire Department. Work in the area of the discovered material shall be stopped until the material has been tested and the absence of hazardous waste has been confirmed. If hazardous waste is determined to be present, such materials shall be removed and disposed of pursuant to applicable provisions of federal, state, and local law.

5.8.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

All potential significant adverse environmental effects are reduced to **below the level of significance** due to Project design, compliance with existing regulations, and compliance with the mitigation measures, as detailed in the discussions above.

5.8.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The cumulative impact area for impacts relative to the use of hazardous materials is the City of Highland. The proposed Project, along with several of the cumulative projects, may use and/or store hazardous materials and universal wastes. Established procedures require businesses to disclose storage and handling of hazardous materials and hazardous waste, to establish and implement emergency response plans, and to cooperate in periodic reporting and inspections.

Implementation of the proposed Project with incorporation of the Project design features discussed previously in Section 5.8.4, compliance with federal, state, and local regulations, and mitigation measures **MM HAZ 1** through **MM HAZ 3**, would not result in any significant impacts. With respect to

the cumulative development projects, each of these projects will be required to evaluate its own project-specific potential impacts, including those associated with the release of hazardous materials into the environment, or from exposure to a health hazard, in excess of regulatory standards; exposure of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; or the location of a listed hazardous materials site, etc. Since hazardous material and risk of upset conditions are largely site-specific, this would occur for each individual project affected, in conjunction with development proposals on these properties. Further, all future developments within the City of Highland and surrounding areas are required to follow all federal, state, and local laws and regulations regarding hazardous materials and other hazards.

In light of the existing regulatory framework governing the storage and use of hazardous materials and waste, the Project's cumulative impact related to hazard and hazardous materials is less than significant, and the Projects contribution is not considerable. Thus, through compliance with federal, state, and local laws and regulations pertaining to hazards and hazardous materials, cumulatively considerable impacts are reduced to a level that is less than significant. Therefore, **less than significant cumulative effects** related to hazards and hazardous materials would result from the proposed Project or cumulative development projects.

5.8.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- CDE 2000 California Department of Education School Facilities Planning Division, *Guide to School Site Analysis and Development*, 2010. (Available at <http://www.cde.ca.gov/ls/fa/sf/guideschoolsite.asp>, accessed December 10, 2013).
- Google Maps Google, Inc., Google Maps, website. (Available at <http://maps.google.com>, accessed January 30, 2013.)
- Hunt(a) Hunt Research Corporation, *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection Planning for the Greenspot Development*, June 29, 2011. (Appendix H.1)
- Hunt(b) Hunt Research Corporation, *Conceptual Fire Protection Plan*, January 2014. (Appendix H.3).
- Converse Converse Consultants, *Phase I Environmental Site Assessment Report* revised December 14, 2011. (Appendix H.2)
- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 17, 2012.)
- GP EIR City of Highland, *General Plan Update Draft EIR*, September 2005 (Available at

HSP the City of Highland)
 City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the
 City of Highland.)

5.9 Hydrology/Water Quality

This section evaluates the Project's potential impacts related to hydrology, water supply, and water quality. Impacts relating to groundwater supplies are also discussed in Section 5.17 Utilities and Service Systems of this DEIR.

The following discussion includes a summary of the *Hydrology and Sedimentation Technical Study* (Appendix I.1) prepared by RBF Consulting (RBF(a)) dated December 2013, the *Conceptual Water Quality Management Plan (CWQMP) for Harmony Tentative Tract No. 18871*, prepared by RBF Consulting (RBF(b)) dated March 17, 2014, the *Harmony Specific Plan, Domestic Water System Technical Study* (Appendix I.2) prepared by RBF Consulting (RBF(c)) dated November 5, 2013, the *Harmony Water Supply Assessment* (Appendix I.3) prepared by East Valley Water District (referenced and cited as WSA) dated September 2013, and the *Harmony Specific Plan, Sewer Analysis*, (RBF(d)) dated January 8, 2014. (Appendix I.4).

5.9.1 Setting

The Project site is located on approximately 1,657 acres within the City of Highland. As shown in **Figure 3-2 – Location Map** the Project site is located along the base of the San Bernardino Mountains. Immediately to the north of the Project site is the San Bernardino National Forest. Mill Creek generally forms the southern and southeastern boundary of the Project site. Emerald Avenue and a portion of Tres Lagos Street are the boundaries for the southwestern portion of the Project site, and the Santa Ana River forms the boundary to the west and northwest. Terrain on the Project site consists of steep mountain slopes (1:1 slope) to the north and slopes ranging from four percent to 10 percent at the alluvial base of the hills. (RBF(a), p. 1)

The Project site is located in the Santa Ana River Basin in the Upper Santa Ana Watershed and generally receives stormwater runoff from the foothills lying to the north and northeast. The runoff is conveyed through the Project site and ultimately reaches the Santa Ana River to the west or Mill Creek on the south. The Project site and the surrounding area have historically been used for agricultural purposes and portions of the Project site recently served as an earth borrow site for construction of the Seven Oaks Dam. Both these activities have altered natural drainage patterns and drainage characteristics for a significant portion of the Project site. (RBF(a), pp. 1, 5)

5.9.1.1 Surface Water Resources and Existing Drainage Condition

The Santa Ana River is the major surface water body within the Santa Ana Watershed, which is under the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The Santa Ana River drains an approximately 2,800 square mile area from its headwaters in the San Bernardino National Forest, southwest through San Bernardino County, into Riverside and Orange counties, and then discharges into the Pacific Ocean through the cities of Huntington Beach and Costa Mesa. (GP EIR, p. 5.8-4) The Santa Ana River traverses from its headwaters at San Gorgonio Peak in the San Bernardino National Forest, past the Seven Oaks Dam and onto the valley. After collecting runoff from rural and urbanized San Bernardino and Riverside counties, the Santa Ana River flows into Prado Dam, enters Orange County, and then collects runoff from Orange County's highly urbanized area before emptying

into the Pacific Ocean. **Figure 5.9-1 – Santa Ana Watershed** shows the Project and its location in the watershed.

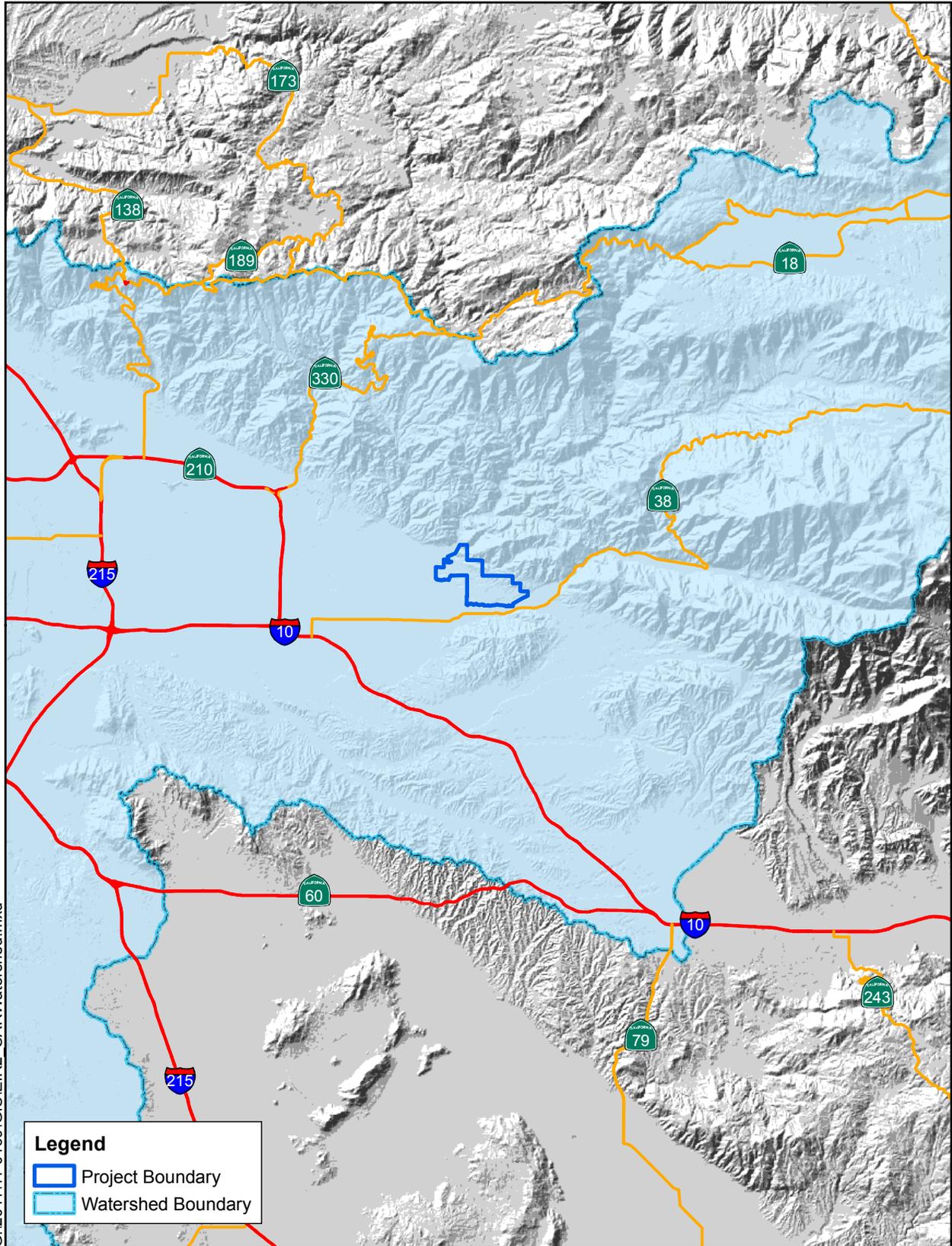
The SARWQCB has divided the Santa Ana River geographically into six reaches, all of which vary in width, disturbance, and reliability of water source. The Project site is located east of the confluence of Mill Creek (Reach 1) and the Santa Ana River (Reach 5) and existing drainage from the Project site is conveyed through natural canyons, ravines, creeks, culverts and channels¹ to the south and west and ultimately reaches Mill Creek (to the south) and the Santa Ana River (Reach 5) to the west. The hydrologic soil group for this area per the County of San Bernardino soil map is type —B, which consists chiefly of sandy loam, or soils with a high water table. (RBF(a), p. 5)

The Project site contains a total of 10 watersheds or tributary areas shown on **Figure 5.9-2 – Tributary Areas** as watersheds “A” through “J.” Storm water runoff from the foothills to the north and northeast of the Project site is conveyed through these watersheds and ultimately reaches the Santa Ana River to the west or Mill Creek on the south. Currently, there are two existing desilting basin/sediment traps located on the southeast side of the property, which were installed as part of the Seven Oaks Dam borrow site grading. There are no other existing engineered drainage conveyance facilities on the Project site (RBF(a), p. 5).

The Harmony Specific Plan area has historically been used for agricultural purposes and most recently served as an earth borrow site for construction of the Seven Oaks Dam. Both these activities have substantially altered natural drainage patterns and drainage characteristics for a significant portion of the Project site. The two most northerly watersheds (“A” and “B” as shown on **Figure 5.9-2**) entering the Project site (one known as Morton Canyon) are natural watersheds that were not altered during construction of the Seven Oaks Dam nor are they altered by the Project’s development footprint. Watershed “C” to the south originates east of the Project site and discharges to the Santa Ana River. Watersheds “D”, “E”, “F”, and “H” also originate east of the Project site and exit into highly disturbed drainages that traverse agricultural lands before discharging into Mill Creek. Watershed “I” originates within the Project site and exits into a disturbed drainage within the above mentioned agricultural lands and also discharges into Mill Creek. Watershed “G” originates east of the Project site, flows to a large, existing on-site desilting basin, and is then released into Mill Creek. Watershed “J” originates east of Harmony and discharges into Mill Creek. (RBF(a), pp. 5-6)

¹A channel is an open conduit either naturally or artificially created that may convey water.

G:\2011\11-0160\GIS\IEIR2_SAR\Watershed.mxd



Source: Calif. Dept. of Water Resources, 2010.

Figure 5.9-1 – Santa Ana Watershed
Harmony Specific Plan Draft EIR

0 2 4 6 8
Miles



LEGEND

-  Tributary Area
-  Drainage Flow Lines



FIGURE 5.9-2 - Tributary Areas
Harmony Specific Plan Draft EIR

5.9.1.2 Groundwater Resources

The Project is located within the Bunker Hill – B Groundwater Basin, and it comprises 89,600 acres. The primary constituent of concern in the Bunker Hill Groundwater Basin is high total dissolved solids (DWR(a), p. 1). Two monitoring stations are located within the Project, and were monitored between 1986 and 2008 (DWR(b), webpage). The last measurement date for both monitoring stations was October 22, 2008 and the results are presented below in **Table 5.9-A**.

Table 5.9-A - Groundwater Monitoring Stations Data

Groundwater Monitoring Station	Depth to Groundwater (feet)
01S02W09P001S	128.0
01S02W14L001S	167.0

5.9.1.3 Water Quality

Water quality in this region is regulated under the jurisdiction of the SARWQCB. The SARWQCB has divided the Santa Ana River geographically into six reaches, all of which vary in width, disturbance, and reliability of water source. The Project will drain into Mill Creek (Reach 1) and Santa Ana River (Reach 5). Mill Creek (Reach 1) confluences with the Santa Ana River (Reach 5) southwest of the Project site, and the Santa Ana River flows through Reach 4 through Reach 1 in San Bernardino, Riverside, and Orange counties, and then discharges into the Pacific Ocean. The Project discharges to natural and soft-bottom creeks and rivers. Mill Creek (Reach 1) is impaired for pathogens per the state’s 2010 303(d) List, but the Santa Ana River (Reach 5) is not impaired. (RBF(b), p. 3-9, Form 3-3)

Surface water quality may be impacted by both point source and non-point source (NPS) discharges of pollutants. Point source discharges are regulated through National Pollution Discharge Elimination System (NPDES) permitting. Non-point source pollution is now considered to be the leading cause of water quality impairments in the state, as well as the entire nation. Non-point source pollution is not as readily quantifiable as pollution that is derived from point sources, since it occurs through numerous diffuse sources. Rainwater, snowmelt, or irrigation water can pick up and transport pollutants as it moves across land or paved surfaces, and these pollutants may ultimately be discharged into streams, lakes, the ocean, and groundwater. Urban areas and agriculture are both considered to substantially contribute to non-point source pollution in surface waters; pollutants associated with agricultural areas include fertilizers, pesticides, fecal coliform, salts, and sediments. Pollutants associated with urban areas include pathogens, organic compounds, sediment, oil and grease, metals, trash and debris, and nutrients.

The SARWQCB sets water quality standards for all ground and surface waters within the region. Water quality standards are defined under the CWA to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives). The Project area lies within the jurisdiction of the SARWQCB (Region 8). The SARWQCB is responsible for the protection of beneficial uses of water resources within its jurisdiction and uses planning, permitting, and enforcement authorities to meet this responsibility. Every water body within

the jurisdiction of the regional board is designated a set of beneficial uses that are protected by appropriate water quality objectives. For smaller tributary streams in which beneficial uses are not specifically designated, they are designated with the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary. Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife. Nineteen beneficial uses are recognized within the Santa Ana Region (Basin Plan, p. 3-2). Ten beneficial uses have been designated for the Project’s receiving water bodies as listed below in **Table 5.9-B**.

Receiving Surface Water Bodies

The Project will drain into Mill Creek (Reach 1) and Santa Ana River (Reach 5). Mill Creek (Reach 1) joins with the Santa Ana River (Reach 5) southwest of the Project, and the Santa Ana River flows through Reach 4 through Reach 1 in San Bernardino, Riverside, and Orange counties, and then discharges into the Pacific Ocean. Mill Creek (Reach 1) is impaired for pathogens per the state’s 2010 303(d) List, but the Santa Ana River (Reach 5) is not impaired. No Total Maximum Daily Loads (TMDLs) have been developed for either water body according to the Basin Plan. TMDLs have been established for pathogens and Nitrate in Reach 3 of the Santa Ana River downstream of the water bodies to which the Project discharges. (RBF(b), p. 3-9, Form 3-3) The BMP options for treating these TMDL constituents will be considered for feasibility as the Project is designed. **Table 5.9-B** identifies the constituents and designated beneficial uses of the Project’s receiving water bodies and **Table 5.9-C** provides the definitions for the beneficial uses. The water bodies are listed in **Table 5.9-B** in the order that the Project’s discharge would drain to in the event that its discharge flowed to the ocean.

Table 5.9-B - Constituents and Beneficial Uses of the Project’s Receiving Water Bodies

Water Body Name	303(d) List Constituents	TMDL Constituents	Beneficial Uses
Mill Creek Reach 1	Pathogens	---	MUN*, AGR*, GWR*, REC1*, REC2*, WARM, COLD*, WILD*, RARE*
Santa Ana Reach 5	---	---	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE
Santa Ana Reach 4	Pathogens	---	GWR, REC1, REC2, WARM, WILD, SPWN
Santa Ana Reach 3	Lead	Pathogens Nitrate	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Santa Ana Reach 2	Indicator Bacteria	---	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Santa Ana Reach 1	---	---	REC1, REC2, WARM*, WILD*

*Indicates that the beneficial use is intermittent.

Sources: RBF(b), Form 3-3, p. 3-9 and Basin Plan, Table 3-1, pp. 3-23 and 3-25

Table 5.9-C - Beneficial Use Definitions

Abbreviation (from Table 5.8-B)	Definition and Use
MUN	Municipal and Domestic Supply waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
IND	Industrial Service Supply waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well pressurization.
PROC	Industrial Process Supply waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.
AGR	Agricultural Supply waters are used for farming, horticulture, or ranching including. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
GWR	Groundwater Recharge waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality, or halting saltwater intrusion into freshwater aquifers.
REC-1	Water Contact Recreation waters are used for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs
REC-2	Non-Contact Water Recreation waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
WARM	Warm Freshwater Habitat waters support warm water ecosystems that may include, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
COLD	Cold Freshwater Habitat waters support coldwater ecosystems that may include, but are not limited to, preservations and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
WILD	Wildlife Habitat (WILD) – Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
RARE	Rare, Threatened or Endangered Species (RARE) – Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Abbreviation (from Table 5.8-B)	Definition and Use
SPWN	Spawning, Reproduction and/or Early Development (SPWN) – Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish and wildlife.

Source: Basin Plan, pp. 3-2-3-4

All listed water quality objectives governing water quality in inland surface waters and groundwater were evaluated for potential impacts from development of the proposed Project. Narrative water quality objectives vary in applicability and scope, reflecting the variety of beneficial uses of water that have been identified. Where numerical objectives are specified, they generally represent the levels that will protect beneficial uses. In some cases, an objective may tolerate natural levels of certain substances or characteristics but no increases over those values (Basin Plan, p. 4-2).

Regardless whether or not a water body has numeric water quality objectives, narrative objectives apply to all inland surface waters and groundwaters within the region under jurisdiction of the SARWQCB. Where more than one narrative objective is applicable, the SARWQCB requires application of the more stringent objective (Basin Plan, pp. 4-6 and 4-18). The numeric water quality objectives that are most likely to be relevant to the proposed Project are listed in **Table 5.9-D – Numeric Water Quality Objectives for Surface Water Bodies in Proximity to the Project Site** and **Table 5.9-E – Numeric Water Quality Objectives for Groundwater in Proximity to the Project Site**.

**Table 5.9-D – Numeric Water Quality Objectives for Surface Water Bodies
in Proximity to the Project Site**

Watershed/Stream Reach	Total Dissolved Solids (mg/L)	Hardness (mg/L)	Sodium (mg/L)	Chloride (mg/L)	Total Inorganic Nitrogen (mg/L)	Sulfate (mg/L)	Chemical Oxygen Demand (mg/L)
Mill Creek (Reach 1)	200	100	30	10	1	20	5
Santa Ana River (Reach 5)	300	190	30	20	5	60	25
Santa Ana River (Reach 4)	550	-	-	-	10	-	30
Santa Ana River (Reach 3)	700	350	110	140	10 ²	150	30
Santa Ana River (Reach 2)	650 ³		-	-	-	-	
Santa Ana River (Reach 1)	(Flood Flows Only)						

Source: Basin Plan, Table 4-1, pp. .4-33-4-35)

**Table 5.9-E – Numeric Water Quality Objectives for
Groundwater in Proximity to the Project Site**

Groundwater Management Zone	Total Dissolved Solids (mg/L)	Hardness (mg/L)	Sodium (mg/L)	Chloride (mg/L)	Nitrate as Nitrogen (mg/L)	Sulfate (mg/L)
Bunker Hill - B	330	-	-	-	7.3	-

Source: Basin Plan, Table 4-1, p. .4-49)

Water quality standards are attained when designated beneficial uses are achieved and water quality objectives are met. The regulatory program of the SARWQCB is designed to minimize and control pollutant discharges to surface and ground waters within the region, largely through permitting, such that water quality standards are effectively attained.

² Total nitrogen, filtered sample

³ Five-year moving average

5.9.1.4 100-Year and 500-Year Floodplains

According to FEMA, parts of the Project site fall within the 100-Year Floodplain. **Figure 5.9-3 – FEMA Flood Hazard Map** depicts flood hazard areas within the Project boundaries, including 100-Year Floodplains. The 100-Year Floodplain is an area of land subject to potential inundation by a storm that has a one percent probability of occurring in any given year (GP, p. 6-16). According to the City General Plan, Figure 6-5 Flood Hazards, portions of the western boundary of the Project site are within the limits of a 500-Year Flood Boundary and portions of the southern boundary are within the limits of a 100-Year Flood Boundary.

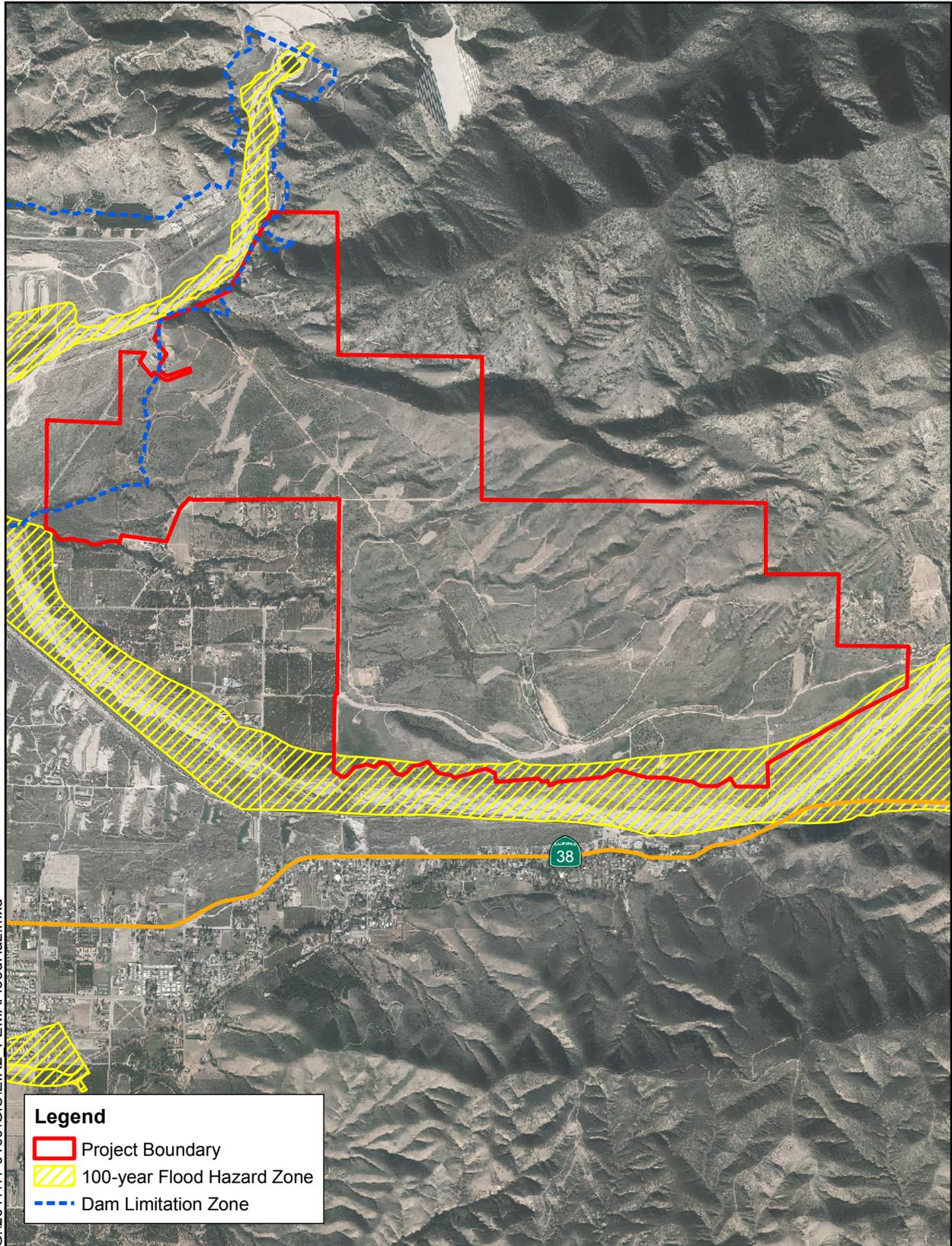
According to FEMA, the published Flood Insurance Rate Maps (FIRMS) for the Project site are included on Community Panel No. 06071C8726H. As shown in **Figure 5.9-3 – FEMA Flood Hazard Map** approximately 68 acres in the southern boundary of the Project site is located within FEMA Zone A (100-year floodplain) designation along Mill Creek.

5.9.1.5 Dam Inundation

Flooding can occur when water retention structures (e.g., dams, levees) fail due to seismic events. The California Division of Dam Safety is responsible for administering the statutes contained within the California State Water Code which govern dam safety. These statutes relate to the structural safety of dams that are greater than 25 feet in height or have a storage capacity greater than 50 acre-feet.

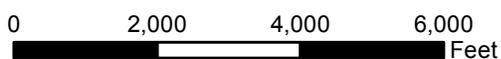
The Seven Oaks Dam is located approximately 0.75 miles to the north of the Project site. The dam is a major feature of the Santa Ana River Mainstem Project designed to protect Orange, Riverside, and San Bernardino Counties from flood. The Seven Oaks Dam operates in tandem with Prado Dam, located approximately 40 miles downstream by storing runoff during the early part of each flood season to build a debris pool to protect the outlet works. During this time, small controlled releases are made on a continual basis to maintain a steady water supply downstream of Prado Dam. During a flood, Seven Oaks Dam stores water destined for Prado Dam for as long as the reservoir pool at Prado Dam is rising. When the flood threat at Prado Dam has passed, stored flood water is released from the Seven Oaks Dam in such a manner as to not exceed the downstream channel capacity. At the end of each flood season, the reservoir at Seven Oaks is gradually drained to allow unhindered flow through the Mainstem Project. The Seven Oaks Dam is designed to resist an earthquake measuring 8.0 on the Richter scale with any point able to sustain a displacement of four feet without causing any overall structural damage. (GP, p. 6-16; OC Flood, USACE)

Portions of the City, as well as the Project site, are within the Seven Oaks Dam inundation area. Dam failure at full capacity is a potential, albeit remote, hazard for most of the City. **Figure 5.9-3 – FEMA Flood Hazard Map** shows the limits of flooded areas with failure of the Seven Oaks Dam, assuming the maximum amount of water is impounded at the time of failure. If such a case were to exist, all southern exits from the City could be impassable during such a major inundation event. (GP, p. 6-16)



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Sources: FEMA DFIRM 2012;
 San Bernardino County ISD, 2012;
 City of Highland General Plan,
 Figure 6-5, Flood Hazards



**Figure 5.9-3 – FEMA
 Flood Hazard Map**
 Harmony Specific Plan Draft EIR

5.9.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to hydrology/water quality may be considered potentially significant if the Project would:

- violate any water quality standards or waste discharge requirements;
- 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);
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- 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;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- 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; and/or
- inundation by seiche, tsunami, or mudflow.

For this DEIR, the third and fourth thresholds identified above regarding existing drainage patterns will be evaluated together because of the potential for duplication of analysis.

5.9.3 Related Regulations

5.9.3.1 Federal

Federal Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the United States Army Corps of Engineers (USACE) regulates discharges of dredged and/or fill material into waters of the United States. "Waters of the United States" are defined in USACE regulations at 33 C.F.R. Part 328.3(a). Navigable waters of the United States are those waters of the United States that are navigable in the traditional sense. Waters of the United States is a broader term than navigable waters of the United States and includes adjacent

wetlands and tributaries to navigable waters of the United States and other waters where the degradation or destruction of which could affect interstate or foreign commerce.

The Federal Clean Water Act (CWA) requires all states to conduct water quality assessments of their water resources to identify water bodies that do not meet water quality standards. The water bodies that do not meet water quality standards are placed on a list of impaired waters pursuant to the requirements of Section 303(d) of the CWA. Mill Creek (Reach 1) is impaired for pathogens per the state's 2010 303(d) List, but the Santa Ana River (Reach 5) is not impaired. Therefore, the Project will discharge storm water into receiving waters with known water quality impairments.

The Porter-Cologne Water Quality Act established a regulatory program to protect water quality and the beneficial uses of state waters. It empowers each regional board to formulate and adopt, for all areas within its jurisdiction, a Basin Plan that designates beneficial uses and establishes water quality objectives that in its judgment will ensure reasonable protection of beneficial uses. Each regional board establishes water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance. The California Water Code provides flexibility for some change in water quality, provided beneficial uses are not adversely affected. The discharge of stormwater runoff from the project is covered under San Bernardino County's NPDES (Municipal Separate Storm Sewer System) MS4 permit. In addition, the Project may require a waste discharge permit if groundwater is present during excavation.

In 1972, the Federal Water Pollution Control Act (Clean Water Act) was amended to prohibit the discharge of pollutants to waters of the United States unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Clean Water Act focused on tracking point sources, primarily from wastewater treatment facilities and industrial waste dischargers, and required implementation of control measures to minimize pollutant discharges. The Clean Water Act was amended again in 1987, adding Section 402(p), to provide a framework for regulating municipal and industrial storm water discharges.

In November 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish requirements for specific categories of industries, including construction projects that encompass greater than or equal to 5 acres of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those greater than or equal to 1 acre. The regulations require that storm water and non-storm water runoff associated with construction activity, which discharges either directly to surface waters or indirectly through municipal separate storm sewer systems (MS4), must be regulated by an NPDES permit.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate 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 the City

of Highland on August 28, 2008. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

5.9.3.2 State

State Water Resources Control Board

The State Water Resources Control Board administers the NPDES permit program regulating storm water from construction activities for projects greater than one acre in size. This is known as the General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 09-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ, NPDES No. CAS000002. The main compliance requirement of the NPDES permits is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The purpose of a SWPPP is to identify potential on-site pollutants and identify and implement appropriate storm water pollution prevention measures to reduce or eliminate discharge of pollutants to surface water from storm water and non-storm water discharges. Storm water best management practices (BMPs) to be implemented during construction and grading, as well as post-construction BMPs will be outlined in the SWPPP prepared for the proposed project. Examples of BMPs include: detention basins for capture and containment of sediments, use of silt fencing, sandbags, or straw bales to control runoff and identification of emergency procedures in case of hazardous materials spills. The Project proponent will be required to obtain a construction NPDES permit prior to site disturbance.

5.9.3.3 Regional Regulations

Santa Ana Regional Water Quality Control Board

Water quality in this region is regulated under the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB) Region 8. The SARWQCB Basin Plan (Basin Plan) establishes water quality standards for all the ground and surface waters of the region. The Santa Ana Region includes the upper and lower Santa Ana River watersheds, the San Jacinto River watershed, and several other small drainages. The Basin Plan sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the Basin Plan is designed to accomplish the following:

- Designate beneficial uses for surface and groundwaters;
- Set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy;
- Describe implementation programs to protect the beneficial uses of all waters within the region; and
- Describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

The Basin Plan incorporates by reference all applicable State Water Resources Control Board and SARWQCB plans and policies.

5.9.3.4 Local Regulations City of Highland Municipal Code

Section 16.40.110, Flood Control and Drainage, of the City of Highland Municipal Code regulates the expansion or development of new and existing storm water facilities within the City of Highland.

City of Highland General Plan

The City of Highland General Plan Public Services and Facilities Element contains the following Goals and Policies applicable to Hydrology/Water Quality:

- **Goal 4.4-** Maintain an effective drainage system that protects people and property from overflows and flood disasters
 - Policy 4.4-1- Continue to improve any deficiencies in the City's drainage system and address the long-term needs associated with future development to minimize flood damage and adequately direct rainfall and subsequent runoff.
 - Policy 4.4.2- Minimize the impact of development on the City's drainage system by reducing the amount of impervious surface associated with new development and encouraging site design features or landscaping that capture runoff. Encourage on-site retention of storm water and compliance with requirements of the National Pollutant Discharge Elimination System.

The City of Highland General Plan Public Health and Safety Element contains the following Goals and Policies applicable to Hydrology/Water Quality:

- **Goal 6.3-** Reduce the risk to life and minimize physical injury, property damage, and public health hazards from the effects of a 100-year storm or 500-year storm associated with flooding.
 - Policy 6.3-1 Review all proposed development to ensure that structures designed for human occupancy are accessible in the event of a 100-year storm and are protected from the 100-year storm to a point two feet above the floodplain.
 - Policy 6.3-3 Require a drainage study be completed by a qualified engineer prior to all proposed development to certify that the proposed development will be adequately protected and that implementation of the development will not create new downstream flood hazards.
 - Policy 6.3-4 Require all development in the City and its sphere of influence comply with discharge permit requirements established by the Regional Water Quality Control Board.
 - Policy 6.3-5 Encourage proposed development to balance or enhance the natural landscape features of a site in order to reduce the amount of impervious surfaces built within the City.
 - Policy 6.3-7 Utilize flood control methods that are consistent with Regional Water Quality Control Board Policies and Best Management Practices (BMPs).

5.9.4 Project Design Features

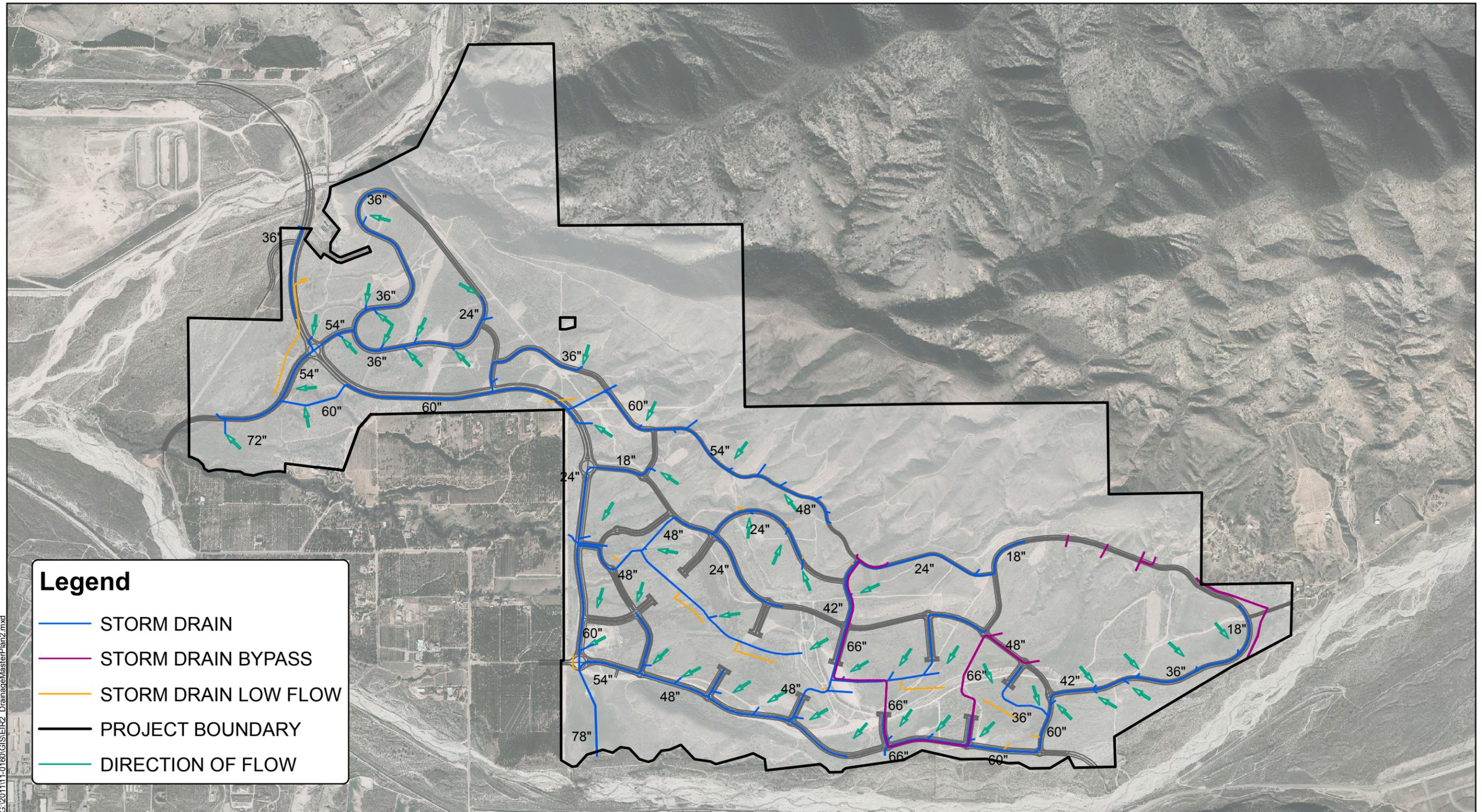
Design features refer to ways in which the proposed Project will reduce or avoid potential impacts through the design of the Project.

Overall, the Harmony Specific Plan includes approximately 834 acres, or 50 percent of the entire site, as being planned for parks, recreation, and open spaces (natural and manufactured). Approximately 535 acres will remain in natural open space, approximately 72 acres will be manufactured open space, while approximately 111 acres will be designated for parks and 112 acres will be designated for community greenways, and approximately 4 acres will be private recreation.

Proposed Hydrology and Drainage Plan

The Harmony Specific Plan proposes a comprehensive drainage system intended to collect, convey, and deliver storm flows in accordance with City of Highland requirements. The primary goal of the storm water management system is to prevent flooding and protect property by providing safe, effective site drainage. This is to be accomplished with the use of underground conduits as well as low-flow swales, which are part of the Project's on-site water quality treatment facilities. (RBF(a), p. 15)

The Project proposes to utilize a drainage concept that collects a portion of the natural runoff from the foothills to the northeast of the Project site in a separate "bypass" storm drain system that safely conveys this runoff in a separate storm drain system to the adjacent Mill Creek. The remaining Project runoff would be conveyed in a separate storm drain system to the adjacent Santa Ana River and Mill Creek. The collection and routing of storm flow will primarily rely on a new network of storm drains as shown on **Figure 5.9-4 – Drainage Master Plan**.



G:\2011\11-01\60\GIS\EIR2_DrainageMasterPlan2.mxd

Source: RBF, 2013.

Figure 5.9-4 – Drainage Master Plan
Harmony Specific Plan Draft EIR

In most instances, the proposed storm drains will parallel or cross low-flow water quality features that are consistent with the San Bernardino Water Quality Management Plan (WQMP) requirements. This creates the opportunity to release nuisance flows and lower rate storm flows into the low-flow water quality features, which promotes capture and recharge of storm water. In addition to the storm drain system and swales, Harmony will incorporate a debris basin and several infiltration basins (RBF(b), Exhibit 12). Harmony's drainage concept minimizes hydromodification of the natural drainage courses tributary to Mill Creek (that is Watersheds "E", "F", "H", and "I" as shown on **Figure 5.9-2**) by routing storm flows away from these drainage courses as necessary. (RBF(a), p. 15)

Harmony Specific Plan Drainage Development Standards

The proposed Project and all future implementing projects are subject to the following Specific Plan Drainage Development Standards. (HSP, p. 5-3)

1. Drainage and flood control facilities and improvements shall be provided in accordance with City of Highland requirements and the Conceptual Drainage Plan.
2. Storm drain facilities shall ensure the acceptance and disposal of 100-year storm runoff without damage to streets or adjacent property.
3. Prior to approval of the first TTM (except TTM for financing purposes) a detailed hydrology study and hydraulic calculations shall be submitted to and approved by the City of Highland. The study and calculations shall define rates of storm water runoff for pre- and post-development conditions, identify the size and location of proposed improvements and demonstrate compliance with the latest San Bernardino County MS4 permit.
4. Prior to issuance of a grading permit containing lots which lie within Zone A (100yr flood plain) of the most current FIRM documents, the applicant shall provide evidence to the City of Highland that a Conditional Letter of Map Revision (CLOMR) has been received from FEMA stating that the completion of proposed improvements will remove the subject area from the flood plain.
5. Prior to issuance of a building permit for residential, commercial, and other habitable structures for any area previously identified in Zone A of the FIRM documents, the applicant shall provide evidence that a Letter of Map Revision (LOMR) has been issued by FEMA for the subject area.

Conceptual Water Quality Management Plan

As required by the City and the NPDES Permit for San Bernardino County and the incorporated cities within the Santa Ana Region of San Bernardino County, a (Project-specific) CWQMP has been prepared for the proposed Project. The CWQMP prepared for this Project is preliminarily acceptable to the City for use in the Draft EIR analysis. However, the City will require approval of the CWQMP as a condition of approval of Tentative Tract Map No. 18871. Based on the type of development proposed by the Specific Plan, the Project-specific CWQMP identifies BMPs to provide treatment for the following pollutants of concern (RBF(b), p. 2-2):

- Pathogens (Bacteria/Virus)
- Phosphorous
- Nitrogen
- Sediment

- Metals
- Trash and Debris
- Organic Compounds
- Oil and Grease
- Pesticides/Herbicides

Source-Control BMPs

The non-structural and structural source control BMPs identified in the following table will be implemented for the proposed Project.

Table 5.8-F - Harmony Source Control BMPs

Non-Structural Source Control BMPs		Structural Source Control BMPs	
Identifier	Name	Identifier	Name
N1	Education of Property Owners, Tenants, and Occupants on Stormwater BMPs	S1	Provide storm drain system stenciling and signage (CASQA New Development BMP Handbook SD-13)
N2	Activity Restrictions	S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)
N3	Landscape Management BMPs	S4	Use efficient irrigation systems and landscape design, water conservation , smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)
N4	BMP Maintenance	S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement
N10	Uniform Fire Code Implementation	S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)
N11	Litter Debris Control Program	S13	Hillside landscaping (CASQA New development BMP Handbook SD-10)
N12	Employee Training	S14	Wash water control for food preparation areas
N14	Catch Basin Inspection Program	S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)
N15	Vacuum Sweeping of Private Streets and Parking Lots		

Non-Structural Source Control BMPs		Structural Source Control BMPs	
Identifier	Name	Identifier	Name
N17			

Source: RBF(b), Forms 4.1-1 and 4.1-2, pp. 4-2- 4.2-6

Preventative Low Impact Development (LID) Site Design Practices

The new MS4 Permit requires consideration of LID requirements. Preventative site design practices are intended to reduce the amount of runoff generated, which in turns results in smaller amounts of runoff to be treated with LID BMPs and hydromodification BMPs. Harmony will implement the following LID Site Design Practices (RBF(b), Form 4.1-3, p. 4-7-4-8):

- Minimize impervious areas: the Harmony Land Use Plan will retain approximately 607 acres as pervious areas as either natural open space (approximately 535 acres) or manufactured open space (approximately 72 acres).
- Maximize natural infiltration capacity: the hydrologic soil group for the portion of the Project site that will be developed is “B.” This type of soil consists chiefly of sandy loam or soils with a high water table and has a moderate infiltration rate. The Project Developer will design and implement BMPs in areas with good infiltration.
- Preserve existing drainage patterns and time of concentration: this will be accomplished through the use of vegetated swales.
- Disconnect impervious areas: a combination of soft bottom swales, infiltration basins, open natural space, and public parks will disconnect impervious areas.
- Protect existing vegetation and sensitive areas: the Harmony Land Use Plan include 535.2 acres of natural open space and has been designed to avoid sensitive areas.
- Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas.
- Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: this will be accomplished through the use of vegetated swales throughout the site.
- Stake off areas that will be used for landscaping to minimize compaction during construction

Project Performance Criteria

The Project-specific CWQMP establishes targets for post-development hydrology based on the performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control, and runoff volume, time of concentration, and peak runoff for protection of downstream waterbody segments with a hydrologic condition of concern (HCOC). Because the Project site has multiple drainage areas, performance criteria was established for each drainage area. (RBF(b), p. 4-9)

Implementation of BMPs follow the low impact development (LID) BMP hierarchy of uses, which evaluates and incorporates LID site design components, hydrologic source control (HSC) ,retention and infiltration BMPs, harvest and use BMPs, and bio-treatment BMPs to meet the runoff volume for water quality control (referred to as the LID DCV) for each of Harmony’s drainage areas. (RBF(b), p. 4-9)

Harmony Conceptual Grading Plan

The Conceptual Grading Plan (see Specific Plan Exhibit 5-7 “Grading Concept”) will avoid the potential for dam inundation by elevating Planning Areas 1 and 4 (**Figure 3-8 – Proposed Land Use Plan**) above the inundation area of the Seven Oaks Dam. The Project layout and the Conceptual Grading Plan will avoid placing structures within the 100 year flood zone by elevating the building pads outside of the 100 year flood plain (**Figure 5.9-3 – FEMA Flood Hazard Map**). Further, Harmony’s Conceptual Grading Plan is designed such that all grading work will be balanced on-site. That is, no import or export of soil is anticipated. In order to achieve an earthwork balance within any given Project development phase, encroachment into a future development phase (or phases) may occur. This encroachment may consist of borrowing or temporary stockpiling of dirt to balance areas in the order of the Project phasing. Refer to Section 3.3.2, Project Grading and the discussion of Project Design Features in Section 5.6, Geology and Soils of this DEIR.

5.9.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project violate any water quality standards or waste discharge requirements?*

Implementation of the proposed Project has the potential to violate water quality standards or waste discharge requirements during construction, after development has taken place, and from operation of the proposed on-site wastewater treatment facility.

Construction of the proposed Project has the potential to result in discharges from soil disturbance and construction equipment. The pollutants of concern during construction typically include: sediment, litter, petroleum products, concrete waste (dry and wet), sanitary waste; and chemicals. During construction, implementing Project developers would be required to prepare and implement a project-specific SWPPP or multiple SWPPPs since implementation of the Harmony Specific Plan will take place in multiple phases and may involve more than one builder. As required by the NPDES Statewide General Construction Permit, the Project-specific SWPPP(s) shall identify an effective combination of erosion control and sediment control BMPs to minimize or eliminate the discharge of pollutants into receiving waters. In addition, BMPs for managing sources of non-storm water discharges and waste are required to be identified in the SWPPP. Examples of construction BMPs include silt fencing, gravel bag berms, fiber rolls, and street sweeping.

During the operational phase of the Project (or the various phases of the Project), storm water runoff may convey contaminants that have accumulated on the land surface over which the runoff passes. Storm runoff from Harmony’s proposed roadways, parking lots, residential, public, and commercial buildings are anticipated to carry a variety of pollutants, referred to as Pollutants of Concern (POC) in the Project-specific CWQMP. Harmony’s POCs are: pathogens (bacteria and viruses), metals, nitrogen, phosphorous, toxic organic compounds, suspended solids/sediments, trash and debris, oil and grease, and pesticides/herbicides. The concentrations of these pollutants in urban runoff vary depending on storm intensity, land use, elapsed time since previous storms, and the volume of runoff generated in a given area that reaches receiving waters. Pollutant concentrations are typically highest during the first major rainfall event after the dry season, known as the “first-flush.”

In the existing condition, Project-generated runoff discharges into Mill Creek (Reach 1), which is impaired for pathogens. Mill Creek (Reach 1) confluences with the Santa Ana River and Reach 3 of the Santa Ana River, downstream of the Project have TMDLs for pathogens and Nitrate. Thus, the potential discharge of pathogens and Nitrate into the Project's downstream receiving bodies is potentially significant. However, as previously discussed under the subheading "Conceptual Water Quality Management Plan" in Section 5.9.4, a CWQMP has been prepared for the Project. The selection, design, and implementation of BMPs identified in the Project-specific CWQMP were based on the procedures described in the San Bernardino County Stormwater Program's WQMP Technical Guidance.

Each of the implementing development projects in Harmony will be required to prepare a WQMP that is specific to such project. The BMP types that will be considered for the implementing development projects will be evaluated as prioritized in the WQMP Technical Guidance and where feasible, will include LID implementation and site design, treatment control BMPs, source control and pollution prevention. The types of BMPs that will be considered for the implementing development projects include, but are not limited to:

LID Implementation and Site Design BMPs

- Hydrologic Source Control BMPs – Impervious area dispersion, localized on-lot infiltration on large lots with suitable soils and geotechnical conditions, street trees, maximize natural infiltration capacity, preserve existing drainage patterns and increase time of concentration, protect existing vegetation and sensitive areas, minimize impervious area, integrate practices with site planning
- Infiltration BMPs – Infiltration trench, infiltration basin, bioretention with no underdrain, drywell, and underground infiltration
- Harvest and Use BMPs – Cisterns and ponds
- Biotreatment BMPs – Bioretention with underdrain, vegetated swale, vegetated filter strip, dry extended detention basin, wet detention basin, constructed wetland, and proprietary biotreatment.

Treatment Control BMPs

- Sand Filter (insert)
- Sand Filter (specialized media)
- Cartridge Media Filter
- Hydrodynamic Separator
- Catch Basin Insert

All Project-related runoff will be captured on-site through retention, infiltration, and an on-site sewer treatment facility. Any runoff diverted into the treatment facility will be used as recycled water for irrigation on the Project site. Thus, Project-related runoff will not contribute to the impairment of any receiving water bodies and will not violate any water quality standards.

The Project proposes an on-site wastewater treatment plant, which would treat Project-generated wastewater and Project-generated runoff and use the resulting recycled water for landscaping the Project's common areas. The wastewater will be treated to a level that meets the treatment criteria set forth in California Title 22 for the use of recycled water for irrigation. The recycled water must be disinfected tertiary recycled water. Based on the requirements of Title 22, the wastewater treatment plant will require both a secondary (biological) treatment process and a tertiary (filtration and disinfection) (RBF(d), pp. 6-10). The wastewater treatment plant would be owned and operated by the EVWD. Construction and operation of the wastewater treatment facility will be regulated by the SARWQCB. The SARWQCB would be responsible for reviewing the construction plans, establishing waste discharge requirements, and issuing a waste discharge permit for the proposed treatment plant.

As discussed in the preceding paragraphs, with implementation of Project Design Features and compliance with existing regulations, potential impacts with regards to the Project violating any water quality standards or waste discharge requirements **will be less than significant without mitigation required.**

***Threshold:** Would the proposed Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

The Project is located within the East Valley Water District (EVWD) service area. Therefore, EVWD is the Public Water System (PWS) for the Project. EVWD presently provides retail water service to approximately 27.7 square miles in their service area to approximately 63,000 persons.

EVWD's water supply consists primarily of groundwater from 20 wells in the western portion of the service area. These wells pump water from the San Bernardino Basin Area (SBBA), and supply approximately 90 percent of the total water production for EVWD customers. In addition to groundwater, Plant 134, a 4.0 MGD water treatment plant, provides treatment of surface water from the Santa Ana River and the State Water Project (SWP) for potable uses. (WSA, p. 9)

EVWD recently completed their participation in San Bernardino Valley Municipal Water District's 2010 Urban Water Management Plan (2010 UWMP) and an update to their Water Master Plan (RBF(c), p. 3). The documents describe the existing water supply sources and distribution system and their respective operations within current, near-term and ultimate buildout conditions. Both documents also identify development of the Project site (included in an area previously identified as the Sunrise Ranch area) and the specific impacts development of the Project site will have on the District's systems.

According to the Water Supply Assessment (WSA), which was prepared for the Project, EVWD will rely primarily on current groundwater production from the San Bernardino Basin Area (SBBA). The SBBA was defined by the Western Judgment adjudication (1969). The SBBA has a surface area of approximately 140.6 square miles and lies between the San Andreas and San Jacinto faults. The basin is bordered on the northwest by the San Gabriel Mountains and Cucamonga fault zone; on the northeast by the San Bernardino Mountains and San Andreas fault zone; on the east by the Banning fault and Crafton Hills;

and on the south by a low east-facing escarpment of the San Jacinto fault and the San Timoteo Badlands. Alluvial fans extend from the base of the mountains and hills that surround the valley and coalesce to form a broad, sloping alluvial plain in the central part of the valley. The SBBA encompasses the Bunker Hill subbasin (8-02.06) defined by DWR and also includes a small portion of the Yucaipa Basin (8-02.07) and Rialto-Colton Basin (8-02.04) as defined by DWR. The SBBA also includes local and imported surface water supplies. (WSA, p. 14)

The Western Judgment established the natural safe yield of the SBBA to be a total of 232,100 AFY for both surface water diversions and groundwater extractions. Of this amount, SBVMWD agencies are allocated 167,238 AFY, and agencies in Riverside County are allocated the remaining 64,862 AFY (excluding any specific groundwater banking performed by Riverside county agencies). SBVMWD retail agencies are allowed to extract more than 167,238 AFY from the SBBA, but extractions over this amount require import and recharge by SBVMWD of a like amount of water. (WSA, p. 15)

Table 5.9-G – Projected Groundwater Demand shows the projected amount of groundwater to be pumped by the EVWD from 2015 to 2035.

Table 5.9-G – Projected Groundwater Demand

	2015	2020	2025	2030	2035
Projected Groundwater Demand	19,486	21,012	24,850	28,782	32,692
<i>Percent of Total Water Supply</i>	85	85	85	85	85

Source: WSA, Table 9, p. 14.

The projected groundwater pumping rates from the 2010 UWMP are based on no recycled water use and an estimated population for the Project site development of 32,400 persons, which is based on the earlier Sunrise Ranch area proposal. The estimated demand for the WSA prepared for the Harmony Project is based on a revised land use plan, and a projected population of 12,571 persons. In addition to residential land uses, the proposed Harmony Project includes supporting non-residential land uses for commercial, neighborhood commercial and elementary school. (WSA, p. 19)

EVWD currently draws the majority of its water supply from groundwater wells located within the SBBA. Based on average annual production during the Western Judgment base period (1959-1963), EVWD has established rights to extract 14,217 AFY from the SBBA. Based on information received from EVWD, this pumping capacity will be augmented upon annexation of wells currently owned by the Project, Landmark Land Company, and Clinton Cogbill. These annexed wells may add 2,307 AFY to the existing rights, bringing the total base period production right to 16,524 AFY. (WSA, p. 19)

According to the WSA, no overdraft of the SBBA groundwater basin exists or is anticipated in the future as a result of new development. As EVWD will rely primarily on current groundwater production from the SBBA, implementation of the Project will not result in an overdraft of the SBBA groundwater basin. As discussed in Section 5.17 (Utilities and Service Systems) of this DEIR and the WSA (Appendix I.3), EVWD has sufficient existing and long-term water capacity to serve the proposed Project, without adversely affecting groundwater levels.

Implementation of the proposed Project would increase impervious surfaces across the majority of the Project site. By increasing the percentage of impervious surfaces on the site, there is a potential that less water would percolate into the ground, thereby decreasing groundwater recharge potential and increasing surface runoff. The increased surface runoff will discharge to Mill Creek (Reach 1) and the Santa Ana River (Reach 5). However, as discussed in Section 5.9.4, the increase in imperviousness and resulting increased runoff is addressed in the Project-specific CWQMP by identifying the BMPs to mitigate potential impacts from developing the Project. In addition to incorporating BMPs, the Project includes low-flow swales that promote capture and recharge of storm water (RBF(a), p. 15).

Thus, the proposed Project would not 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. Therefore, impacts to groundwater recharge would be **less than significant without mitigation required**.

***Threshold:** Would the proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; or substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

As discussed in Section 5.9.4, Project Design Features, the Harmony drainage concept consists of two separate storm drain systems – a “bypass” system and “on-site” system. The off-site drainages from Watersheds “G”, “J”, “K” and “L” will be conveyed in the bypass system to Mill Creek. The “on-site” system will collect and convey all the remaining off-site drainages to both Mill Creek and the Santa Ana River. This dual storm drain system routes potentially damaging storm flows directly to Mill Creek and away from Watersheds “E”, “F”, “H”, and “I” to avoid hydromodification of these watersheds. Having separate systems for the off-site flows minimizes the sizing of the on-site water quality treatment facilities and assures sediment movement from the natural areas. Releasing nuisance flows and lower rate storm flows into the Project’s low-flow water quality features promotes storm water capture and recharge. (RBF(a), pp. 15-16)

Implementation of the Project will affect eight of the 10 existing tributary areas on the Project site. At the southwest boundary of the Project, the downstream portion of Watersheds “H”, “F”, and “I” will remain unchanged. The downstream portion of Watershed “E” is modified by the addition of subarea “E-5” which was previously part of watershed “C”. However, the impact of this additional area is minimal because the majority of the upstream area tributary to Watershed “E” is being diverted to Mill Creek via the proposed on-site storm drain system. Watersheds “E”, “H”, “F”, and “I” originate at the western boundary of the Project site and enter disturbed drainages that traverse agricultural lands before discharging into Mill Creek. (RBF(a), p. 19)

In the developed condition, the primary on-site watersheds are “J”, “L”, “C-D-N”, and “O”. The primary off-site watersheds in the developed condition are “G-K”, “J”, and “L”. All of the off-site watersheds, except Watershed “O” begin in the existing foothills to the northeast of the Project. Existing Watershed “G-K” originates to the northeast of the Project boundary as two separate tributary areas that are

combined in the proposed storm drain system prior to discharging into Mill Creek. Existing Watershed “L” originates to the northeast of the Project site, enters the proposed storm drain system, and discharges into Mill Creek. Existing Watershed “C-D-N” originates to the northeast of the Project site boundary as three separate tributary areas that are combined in the proposed storm drain system prior to discharging into the Santa Ana River. Watershed “O” originates within the Project boundary, enters the proposed storm drain system, and discharges into the Santa Ana River. Proposed Watersheds “J” and “L” originate within the Project boundary, enter the storm drain system, and discharge to Mill Creek. (RBF(a), p. 19)

When developed, large storm water discharges will be captured in the on-site storm drains and conveyed to Mill Creek and the Santa Ana River, which will reduce the flows to the existing conveyances west of Emerald Avenue. Reducing these flows reduces the potential for erosion of downstream properties. The Project will maintain the flows to the existing discharge points to downstream properties west of Emerald Avenue at or below the existing peak discharges for the 2, 5, 10, 25, and 100-year discharges. (RBF(a), p 22)

The San Bernardino County Flood Control District and the San Bernardino County Copermittees have developed Phase I of the San Bernardino County Watershed Action Plan (WAP) as a requirement of the San Bernardino County Municipal Separate Storm Sewer System (MS4) Permit (Santa Ana Regional Board Order No. R8-2010-0036). The WAP covers the permit area, which includes the Harmony Specific Plan Project area. Phase II of the WAP was submitted by the San Bernardino Flood Control District and the Copermittees to the SARWQCB. As part of Phase II of the WAP a Hydromodification Management Plan (HMP) was developed. The SARWQCB has commented on Phase II of the WAP and the HMP. The District and Copermittees are currently addressing these comments. (RBF(a), p. 22)

The HMP currently identifies the Santa Ana River as a Controlled Release Point (CRP), which exempts Project-related discharges to the river from HMP requirements. The importance of this reach of Mill Creek is the downstream transport of sediments during storm events. Mill Creek is not exempt from the HMP requirements; however the flows through this area are not expected to be increased beyond current conditions. (RBF(a), pp. 22-23)

Mitigation measures **MM HYD 1** through **MM HYD 2**, require that prior to the issuance of any grading permit or recordation of the first tentative tract map (excluding a TTM for financial purposes), a detailed Master Drainage Plan (MDP) shall be submitted and approved by the City. The MDP shall define rates of storm water runoff for pre and post development conditions; identify the size and location of proposed improvements and demonstrate compliance with the latest County of San Bernardino MS4 permit. In addition, prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a TTM for financial purposes), a detailed hydrology analysis will be prepared to confirm less than significant impacts of flows from the development being released to the existing conveyance channels west of Emerald Street are at or below existing condition discharges. With incorporation of mitigation measures **MM HYD 1** and **MM HYD 2**, potential impacts associated with substantial erosion or siltation or flooding on- or off-site will be **less than significant**.

Threshold: *Would the proposed Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

The Project will increase the impervious area at the Project site, which will increase the amount of runoff to Mill Creek (Reach 1) and the Santa Ana River (Reach 5). The Project includes a Drainage Master Plan (**Figure 5.9-4**) that is designed to handle the stormwater runoff that is conveyed through the site. As described in Section 5.9.4 under the subheading “Conceptual Water Quality Management Plan,” a Project-specific CWQMP has been prepared for the Project. Each of the implementing development projects in Harmony will be required to prepare a WQMP that is specific to such project. The types of BMPs that will be considered for the implementing development projects will include Low Impact Development (LID) and site design BMPs, treatment control, source control and pollution prevention. Through adherence to the Project Design Features, compliance with existing regulations, and incorporation of mitigation measures **MM HYD 1** and **MM HYD 2** which require a detailed Master Drainage Plan and hydrology analysis prior to the issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance and conveyance purposes), potential impacts with regards to exceeding capacity of drainage systems or providing substantial sources of polluted runoff will be **less than significant**.

Threshold: *Would the proposed Project otherwise substantially degrade water quality?*

As previously discussed, during construction the Project is required to prepare a SWPPP that identifies an effective combination of erosion control and sediment control BMPs to minimize or eliminate the discharge of pollutants into receiving waters. In addition, BMPs for managing sources of non-storm water discharges and waste are required to be identified in the SWPPP.

For post-construction, as previously discussed under the subheading “Conceptual Water Quality Management Plan” in Section 5.9.4, a Project-specific CWQMP has been prepared for the Project. The selection, design, and implementation of BMPs identified in the Project-specific CWQMP were based on the procedures described in the San Bernardino County Stormwater Program’s WQMP Technical Guidance. The Project-specific CWQMP establishes targets for post-development hydrology based on the performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control, and runoff volume, time of concentration, and peak runoff for protection of downstream waterbody segments with a hydrologic condition of concern (HCOC). Each of the implementing project developers would be required to complete a WQMP specific to such project. The BMP types that will be considered for the implementing development projects will be evaluated as prioritized in the WQMP Technical Guidance and where feasible, will include LID implementation and site design, treatment control BMPs, source control and pollution prevention.

Project-related runoff governed by the MS4 permit will be captured on-site through retention, infiltration, and an on-site sewer treatment facility. Waste discharge requirements will be established by the Santa Ana Regional Water Quality Control Board (Regional Board) as part of the NPDES permit process for the on-site treatment facility. The conditions of the waste discharge requirements will be consistent with the water quality objectives for downstream receiving waters as set forth in the Basin

Plan. The Regional Board will identify waste discharge requirements for both dry and wet weather conditions. Any run-off diverted into the treatment facility will be used as recycled water for irrigation on the Project site.

Therefore, through compliance with existing regulations and the waste discharge requirements that will be established by the Regional Board, and Project Design Features, potential impacts with regards to otherwise substantially degrading water quality will be **less than significant without mitigation required**.

Threshold: *Would the proposed Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

According to FEMA, the published Flood Insurance Rate Maps (FIRMS) for the Project site is included on Community Panel No. 06071C8726H. As shown in **Figure 5.9-3 – FEMA Flood Hazard Map** approximately 68 acres in the southern boundary of the Project site is located within FEMA Zone A (100-year floodplain) designation along Mill Creek.

The City of Highland and the County of San Bernardino are participants in the National Flood Insurance Program (NFIP), which is administered through the Federal Emergency Management Agency (FEMA). As a participant in the program, the local jurisdictions have adopted requirements to limit development within 100-year floodplains.

The currently mapped 100-year flood zone (Zone A on the FEMA map) is located at the southern portion of the Project site (**Figure 5.9-3**). Within this area, the Project proposes park (Planning Areas 44 and 47), open space (Planning Areas 66 and 72), residential (portions of Planning Areas 25, 33, 36, 40, 41, 43A) and neighborhood commercial (overlay portion of Planning Area 40) uses. As a part of the Project any proposed residential or commercial land use that is within the Zone A flood plain will be required to be graded and elevated so that they are removed from the flood plain. As the Zone A (100-year floodplain) is along the southern boundary of the Project site (**Figure 5.9-3**) and on the northerly side of Mill Creek, raising the floodplain in the identified residential and commercial land uses would not redirect flood flows. The existing approximate elevations of the portions of the proposed residential and commercial planning areas within Zone A are between 2,260 feet and 2,460 feet; however, the Project's grading plan proposes to raise the elevation of these planning areas to between 2,280 feet and 2,480 feet. Mitigation measure **MM HYD 3** requires that prior to the issuance of a grading permit or recordation of the first final map (excluding a map for finance purposes) containing lots which lie within Zone A (100 year flood plain) of the most current FEMA flood zone maps, the applicant shall obtain a Conditional Letter of Map Revision (CLOMR) from FEMA acknowledging that the proposed improvements remove the subject area from the flood plain. Therefore, with implementation of mitigation measure **MM HYD 3**, impacts will be **less than significant**.

Threshold: *Would the proposed Project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?*

Portions of the City, as well as the Project site, are within the Seven Oaks Dam inundation area. Dam failure at full capacity is a potential, albeit remote, hazard for most of the City. **Figure 5.9-3 – Flood Hazard Map** shows the limits of flooded areas with failure of the Seven Oaks Dam, assuming the maximum amount of water is impounded. If such a case were to exist, all southern exits from the City could be impassable during a major inundation event. (Highland GP, Safety Element, p. 6-16)

The Seven Oaks Dam is located approximately 0.75 miles to the north of the Project site. The dam is a major feature of the Santa Ana River Mainstem Project designed to protect Orange, Riverside, and San Bernardino Counties from flood. Inundation due to dam failure is rare. Although failure of the Seven Oaks Dam would release a significant amount of water (approximately 145,600 acre-feet of water during flooding conditions assuming the maximum amount of water is impounded) the dam is designed to provide flood protection during a 350-year storm event and engineered to resist an earthquake measuring 8.0 on the Richter scale with any point able to sustain a displacement of four feet without causing any overall structural damage. (GP EIR, p. 5.8-14; USACE)

Even though only a small portion on the western side of the Project site is located within the Seven Oaks dam inundation zone (**Figure 5.9-3**), the residents and visitors who would live and work within this dam inundation area could be exposed to a significant risk involving flooding if the Seven Oaks Dam failed. Access from the Project site will be available from the south via Newport Avenue and the Garnet Street bridge in the event of dam failure.

As shown on **Figure 5.9-3**, the Project site contains only a small portion of the Seven Oaks Dam Inundation Zone, which is located in the western portion of the Project site. According to the Army Corps of Engineers, the Seven Oaks Inundation area reflects events of an extremely remote nature as a seismic event large enough to damage the structure would have to occur at the same time as the maximum amount of water is impounded by the dam. The frequency of these two events coinciding at the same time is extremely low.

The Project's proposed land uses for that area that is within the Seven Oaks Dam Inundation Zone is primarily Natural Open Space (NOS) and Manufactured Open Space (MOS) in Planning Areas 67 and 68. Planning Area A (Community Public Facilities), where the wastewater treatment plant is proposed is completely within the dam inundation zone. However, this Planning Area does not contain any habitable structures. If this facility is not properly designed to withstand flooding and/or inundation and sustains damage, water quality could be affected. Implementation of **MM HYD 4** requires plans for the treatment plant incorporation of design features that consider flooding/inundation.

A portion of Planning Area 1 (Estate Residential) and Planning Area 4 (Low Density Residential) are also located within the dam inundation zone. The existing elevations of these Planning Areas are between approximately 1,840 feet and 1,850 feet. However, the Project's grading plan proposes to raise the westerly portions of these planning areas between 40 and 50 feet, approximately. Thus, the proposed elevations of Planning Areas 1 and 4 would be 1,890 feet and 1,900 feet, respectively. Similar existing

elevations on the Project site are outside of the dam inundation zone indicating that the Project, as proposed, would remove habitable structures from the dam inundation zone.

Because: (i) the frequency of a seismic event large enough to damage the Seven Oaks Dam occurring at the same time as the maximum amount of water is being impounded by the dam is extremely remote; (ii) access to and from the Project site via Newport Road and the Garnet Street bridge will not be inundated in the event of dam failure; (iii) all residential planning areas will be elevated outside of the inundation area; and (iv) mitigation measure **MM HYD 4** requires the incorporation of design features to the on-site wastewater treatment plant; impacts associated with flooding and dam inundation are considered **less than significant after implementation of mitigation**.

Threshold: *Would the proposed Project result in inundation by seiche, tsunami, or mudflow?*

A seiche is a small tidal wave that occurs in a lake or other enclosed body of water. Seiches may be generated by ground motion during an earthquake. A seiche may cause an overflow of a lake, reservoir, or lagoon. Because the Seven Oaks Dam is almost exclusively used for flood control, it is usually at a low level or completely dry. A tsunami is a high ocean wave generated by a submarine earthquake or volcanic eruption. The City and the Project site are not in close proximity to the ocean or an enclosed large body of water such that it would be affected by a seiche or tsunami. (GP EIR, p. 5.8-14)

The Santa Ana River and its tributaries especially those out of the mountainous areas have the potential to carry large amounts of debris, or debris flow. Debris has the potential to fill or plug structures designed to collect and convey runoff, forcing floodwaters into the adjacent areas. Rapidly moving flows heavily laden with debris are also extremely dangerous. Mudflows are a potential hazard to the Project site, especially to development at the base of the mountains. An analysis of sediment debris yield from upland tributaries was prepared. This yield was utilized to estimate the debris basin sizing for drainage areas tributary to the site (RBF(a), p. 14). This information is then used in the BMPs contained in the CWQMP.

Therefore, potential impacts from mudflows will be **less than significant**.

5.9.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts upon hydrology/water quality or to reduce to below the level of significance.

MM HYD 1: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes) a detailed Master Drainage Plan (MDP) shall be submitted and approved by the City of Highland. The MDP shall define rates of storm water runoff for pre and post development conditions, identify the size and location of proposed improvements and demonstrate compliance with the latest applicable MS4 permit.

MM HYD 2: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes), a detailed hydrology analysis including basin

routing will be prepared to verify flows from the development being released to the existing conveyance channels west of Emerald Street are at or below the existing condition discharges. The analysis will include target discharge values for the 2, 5, 10, 25 and 100-year storm events to be conveyed from the project to the downstream natural conveyances.

MM HYD 3: Prior to issuance of any grading permit or recordation of the first tentative tract map (excluding a map for finance or conveyance purposes) containing lots which lie within Zone A (100yr flood plain) of the most current FEMA flood zone maps, the applicant shall provide evidence to the City of Highland that a Conditional Letter of Map Revision (CLOMR) has been received from FEMA acknowledging that the proposed improvements remove the subject area from the flood plain.

Prior to issuance of a building permit for any lot previously identified in Zone A of the most current FEMA flood zone maps, the applicant shall provide evidence that a Letter of Map Revision (LOMR) has been issued by FEMA.

MM HYD 4: Design plans and preliminary design reports (PDRs) shall consider the wastewater treatment plant with respect to the dam inundation zone and incorporate design features to reduce flooding, resulting scour, and other inundation-related liabilities.

5.9.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

Through compliance with existing regulations and with implementation of mitigation measures **MM HYD 1** through **MM HYD 5** potential impacts related to hydrology and water quality will be **less than significant**.

5.9.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Additional information about cumulative impacts is provided in Section 7 of this Draft EIR.

5.9.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

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|------------|--|
| Basin Plan | California Regional Water Quality Control Board, Santa Ana Region, <i>Water Quality Control Plan Santa Ana River Basin</i> , February 2008 update. (Available at www.swrcb.ca.gov/rwqcb8/water_issues/programs/basin_plan/index.shtml , accessed December 19, 2013.) |
| DWR(a) | California Department of Water Resources, <i>California's Groundwater Bulletin 118, Hydrologic Region South Coast, Upper Santa Ana Valley Groundwater Basin, Groundwater Basin Number 8-2.06</i> , February 27, 2004. (Available at http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/8-2.06.pdf , accessed December 24, 2013.) |

- DWR(b) California Department of Water Resources, *Groundwater Level Data By Basin*, webpage. (Available at http://www.water.ca.gov/waterdatalibrary/groundwater/hydrographs/basin_wells.cfm, accessed December 24, 2013.)
- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- GP EIR City of Highland, *General Plan Update Draft EIR*, September 2005. (Available at the City of Highland.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- OC Flood OC Public Works, OC Flood Division, Santa Ana River Project. (Available at <http://ocflood.com/sarp/>, accessed March 6, 2014.)
- RBF(a) RBF Consulting, *Hydrology and Sedimentation Technical Study*, Harmony Specific Plan, City of Highland, San Bernardino County California, December 2013. (Appendix I.1)
- RBF(b) RBF Consulting, *Conceptual Water Quality Management Plan for Harmony Tentative Tract No. 18871, March 17, 2014*. (Available at the City of Highland.)
- RBF(c) RBF Consulting, *Harmony Specific Plan, Domestic Water System Technical Study*, November 5, 2013. (Appendix I.2)
- RBF(d) RBF Consulting, *Harmony Specific Plan, Sewer Analysis*, January 8, 2014. (Appendix I.4)
- USACE U.S. Army Corps of Engineers, Los Angeles District, Seven Oaks Dam. (Available at http://198.17.86.43/resreg/htdocs/7oaks_2.html, accessed March 6, 2014.)
- WSA East Valley Water District, *Harmony Water Supply Assessment*, September 2013. (Appendix I.3)
- WSMP East Valley Water District, *2014 Water System Master Plan*, February 2014. (Available at <http://www.eastvalley.org/AgendaCenter/ViewFile/Agenda/02122014-594>, accessed February 22, 2014.)

5.10 Land Use and Planning

The following analysis examines the proposed Project to determine whether it would be consistent with local and regional land use plans, policies, and analyzes potential conflicts between existing and proposed land uses in and around the Specific Plan area. Potential conflicts with any applicable habitat conservation plan or natural community conservation plan are addressed in Section 5.4 (Biological Resources) of this document.

5.10.1 Setting

The Harmony Specific Plan Project is a comprehensive plan for the development of approximately 1,657 acres in the eastern portion of the City. Future development of all land within the City is guided by the City of Highland General Plan which was adopted on March 14, 2006. The General Plan outlines comprehensive, long-term land use policies to guide development within the City. The General Plan was developed in accordance with State law and is comprised of ten elements: Land Use, Circulation, Public Services and Facilities, Conservation and Open Space, Public Health and Safety, Noise, Housing, Economic Development, Community Design and the Airport Element.

5.10.1.1 Existing Land Uses

The Project site is comprised of 1,657 acres of land located at the eastern edge of the City adjacent to the San Bernardino National Forest. The Project site is currently vacant and consists of former and remnant orchards and an area which was used as a borrow site to build the Seven Oaks Dam. There are no structures located on the Project site. The property is mostly flat (less than 10% slopes) with some hills and steep foothills to the north, which range up to about 40%.

The Project site's General Plan land use designation is entirely within an area designated as Planned Development (see **Figure 3-5 – General Plan Land Use Designations**). The General Plan Land Use Element envisions the entire Project site as a "one-of-a-kind, high quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities." In addition, the current zoning across the entire Project site is PD (Planned Development) (See **Figure 3-6 – Zoning Map**). Within the PD-designated areas, all residential land uses are considered to be appropriate, as are support uses (e.g., open space and recreation, public facilities, commercial, and all employment-generating uses) that may be appropriate, subject to applicable General Plan policies and ordinances of the City of Highland. Pursuant to the General Plan, development within PD areas is processed through the use of a specific plan, a planned unit development, a conditional use permit or a similar device.

5.10.1.2 Surrounding Land Uses

As shown in **Figure 3-7 – Existing Setting Map**, features located adjacent to the Project site include the San Bernardino National Forest to the north, the Santa Ana River to the west, agricultural land to the southwest, and Mill Creek to the south. The Seven Oaks Dam is located approximately 0.75 miles northwest of the Project site and several rural residences are located to the east of the Project site. Access to the Project site is limited, given its outlying location within the City. Greenspot Road provides

the sole connection between the City and the Project site. Additional access to the Project site is available via Newport Road from an area of unincorporated San Bernardino County located to the west of the Project site (within the City of Redlands Sphere of Influence).

The Project site is adjacent to the City of Highland to the northwest, and the County of San Bernardino to the north, south, east, and west. In addition, the City of Redlands is located across Mill Creek to the south. The Highland General Plan Land Use Element designates the land uses adjacent to the northwest of the Project site as Agricultural/Equestrian (0-2.0 du/ac) and Open Space. The County of San Bernardino General Plan designates the land uses to the west of the Project site as Rural Living (RL-10-AP) and Resource Conservation-Agricultural Preserve (RC-AP) and land uses to the east as Rural Living (RL-5), Rural Living-Agricultural Preserve (RL-10-AP), and Single Residential (RS). The area north of the Project site that is not part of the San Bernardino National Forest is designated as Resource Conservation by the County of San Bernardino General Plan. Across Mill Creek to the south of the Project site, the City of Redlands General Plan designates the land uses as Flood Control/Construction Aggregates Conservation/Habitat Preservation.

The existing uses surrounding the Project site include the San Bernardino National Forest to the north and north-east of the Project site. Agricultural land (citrus trees) is located to the west along with scattered rural residences. To the south of the Project site is Mill Creek; further south across Mill Creek are areas of open space followed by single family residential units. The area to the east of the Project site is primarily open space with scattered rural residences, and scattered areas of agricultural land (citrus trees).

5.10.1.3 Proposed Project

The adoption of the Harmony Specific Plan will establish the zoning for the Project site and include a land use plan, designation of planning areas, design and landscaping guidelines, and development standards for the development of the Project. Of the Project area's 1,657 acres, approximately 830 acres, or 50% of the entire community, is reserved for parks, recreation and open space. A summary of the Specific Plan's proposed land uses is provided in **Table 5.10-A – Land Use Summary** below. The comprehensive land use plan for the Harmony Specific Plan is illustrated in **Figure 3-8 – Proposed Land Use Plan**.

A 15.9 acre portion of the Specific Plan boundary has been designated with a Neighborhood Commercial (NC) overlay. Areas designated with an NC overlay may develop as their underlying residential land use, as neighborhood commercial, or as a combination of the two uses. If the site designated with an NC overlay develops as residential, its acreage and units are reflected in the "Without NC Overlay" scenario columns of **Table 5.10-A**. If the area designated with an NC overlay develops as neighborhood commercial, its acreage and building square footage are reflected in the "With NC Overlay" scenario of **Table 5.10-A**.

As shown in **Table 5.10-A**, the Harmony Specific Plan is divided in to the following land use categories:

- **Residential:** Residential land use comprises approximately 658 acres of the Project site, providing a variety of residential detached and attached housing types. The following categories of residential land use are planned for Harmony.
 - Estate Residential: 4 planning areas
 - Low Density Residential: 26 planning areas (one planning area is partially covered with a Neighborhood Commercial Overlay)
 - Medium Density Residential: 14 planning areas (two planning areas are entirely covered with a Neighborhood Commercial Overlay)
 - Medium-High Density Residential: 4 planning areas
 - High Density Residential: 1 planning area (partially covered with a Neighborhood Commercial Overlay)
- **Neighborhood Commercial:** Approximately 5.7 acres of the Project site is planned for development of neighborhood commercial land uses to provide retail goods and services to the community.¹ As described above, an additional 15.9 acres of neighborhood commercial are allowed in residential areas designated with a Neighborhood Commercial Overlay.
- **Recreation and Open Space:** The Harmony Specific Plan includes the development of approximately 223 acres of parks and community greenways. Parks will be improved as active and passive recreational areas. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are designed for activities such as walking, hiking and quiet reflection. Harmony offers its residents the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails that meander through the community's greenway system. Approximately one acre of Harmony's community greenway has been designated with an Agriculture Overlay; this area is envisioned to provide space for community gardens, stands for local farmers to sell their produce, and/or potentially recreational amenities for residents. The Harmony Specific Plan also includes the provision of approximately 4.3 acres for "The Parkhouse", a private recreation facility featuring a clubhouse, swimming pool, and other active and passive amenities.

In addition, a total of 535 acres of the Project site will be devoted to natural open space and another 72 acres for manufactured open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved. A majority of the natural open space provides a transition to the San Bernardino National Forest and will be accessible by pedestrian trails.

¹ Permitted and conditionally permitted uses in the Neighborhood Commercial land use areas are: medical, public facilities, religious institutions, educational, liquor sales (with a conditional use permit), offices, retail stores, food and beverage stores, hospitality, business services, financial services, and repair services.

- Community Public Facilities:** The Harmony Specific Plan provides for the development of one elementary school on an 8.3-acre site. The elementary school site is adjacent to a 5.0-acre joint-use neighborhood park at the center of the community to ensure equitable access for all Harmony residents. The elementary school will be accessible by pedestrians and bicyclists via the proposed multipurpose trail network. In addition, the Specific Plan also identifies a 1.5-acre site for the development of a new fire station; an additional 18.5 acres within the Project site are identified for other public facilities, which could include water reservoirs, a water treatment facility, sewage treatment plant, or pump station.

Table 5.10-A – Land Use Summary

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Residential				
Estate Residential, ER (0-2.0 du/ac)	84.4	81	84.4	81
Low Density Residential, LDR (2.1-6.0 du/ac)	382.1	1,630	381.1	1,624
Medium Density Residential, MDR (6.1-12.0 du/ac)	146.4	1,188	132.5	1,049
Medium-High Density Residential, MHDR (12.1-20.0 du/ac)	34.4	518	34.4	518
High Density Residential, HDR (20.1-30.0 du/ac)	10.7	215	9.7	195
Residential Subtotal	658 (40%)	3,632	642.1 (39%)	3,467
Neighborhood Commercial				
Neighborhood Commercial, NC (0.23-0.25 FAR)	5.7	62,073 sf	21.6	225,423 sf
Neighborhood Commercial Subtotal	5.7 (0.3%)	62,073 sf	21.6 (1.5%)	225,423 sf
Recreation and Open Space				
Parks, P	110.7	-	110.7	-
Community Greenway, CG with 1.0 acre Agriculture Overlay (0.20 FAR)	111.8	8,712	111.8	8,712
Private Recreation, PR	4.3	-	4.3	-
Natural Open Space, NOS	535.2	-	535.3	-

Land Use	Without NC Overlay		With NC Overlay	
	Adjusted Gross Acreage	Target Units/Square Footage	Adjusted Gross Acreage	Target Units/Square Footage
Manufactured Open Space, MOS	72.0	-	72.0	-
Recreation And Open Space Subtotal	834.0 (50%)	8,712	834.0 (50%)	8,712
Community Public Facilities				
Elementary School, S (0.20 FAR)	8.3	72,310 sf	8.3	72,310 sf
Public Facilities, PF	20.0	-	20.0	-
Right-of-Way, ROW	131.4	-	131.4	-
Community Public Facilities Subtotal	159.7 (9.5%)	72,310 sf	159.7 (9.5%)	72,310 sf
PROJECT TOTALS	1,657.3	3,632 units and 143,095 sf	1,657.3	3,467 units and 306,445 sf

Source: HSP, March 2014 p. 4.3.

Land Use Applications

The proposed Project includes the following land use applications:

General Plan Amendment: The City will consider a General Plan Amendment No. GPA-011-003 as part of its consideration of the Harmony Specific Plan. This General Plan Amendment would enable the City of Highland to implement General Plan land use and circulation policies within the Specific Plan area in a manner that addresses the physical characteristics of the Specific Plan area. GPA-011-003 includes:

1. General Plan Land Use Element: Amend Land Use Element Table 2.1 Notes to reflect the proposed “assumed density” for the Seven Oaks Planned Development area of 2.2 du/ac.
2. General Plan Circulation Element Amendment: New roadway classification and cross-section and updated Roadway Network Map and Bikeways Map.

Zone Change: The City will consider Zone Change No. ZC 011-003 to change the existing zoning classification from Planned Development to “Harmony Specific Plan SPR 011-001.”

Specific Plan: As authorized by Government Code Section 65450 *et seq.*, Specific Plan No. SPR-011-001 includes a land use plan, designation of planning areas, design and landscape guidelines and development standards associated with the development of the Harmony Specific Plan. The Harmony Specific Plan will serve as the legal document that implements the General Plan land use designation of

Planned Development and the “Harmony Specific Plan (SPR-011-001)” zoning district for the Specific Plan area. The Specific Plan will serve as a blueprint for development by establishing the distribution of land use and the criteria for development of each land use within the Specific Plan area. The Specific Plan establishes the development requirements and guidelines to be applied to each phase of development within the Specific Plan area. In this regard, all future development plans, tentative parcel and/or tract maps, or other similar entitlements shall be consistent with regulations set forth in the Specific Plan and will follow all applicable City regulations.

Tentative Tract Maps: Tentative Tract Map No. 18861 proposes to subdivide 1,657.3 acres into eight lots for financing and conveyance purposes and Tentative Tract Map No. 18871 proposes to subdivide 1,657.3 acres into 73 numbered lots and 79 lettered lots for development.

Development Agreement: The development agreement will provide a framework for the development of the Harmony Specific Plan, establishing provisions related to phasing of development, timing of infrastructure and public facilities, provisions for infrastructure financing, and other development-related issues.

5.10.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to land use and planning may be considered potentially significant if the Project would:

- physically divide an established community;
- 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; or
- conflict with any applicable habitat conservation plan or natural community conservation plan

5.10.3 Related Regulations

5.10.3.1 Federal Regulations

No federal regulations would be applicable to land use and planning with respect to the proposed Project.

5.10.3.2 State Regulations

Article XI, Section 7 of the California State Constitution is the primary authority for cities and counties to regulate land use. California State Planning and Land Use Law (Government Code § 65000 *et seq.*) sets forth minimum standards to be observed in local land use regulatory practices, reserving in cities and counties the maximum degree of control in such matters.

5.10.3.3 Local Regulations

Highland General Plan

The General Plan contains several provisions that relate to land use and planning. The policies contained within the General Plan relevant to the proposed Project, are analyzed in **Table 5.10-B, Project Consistency with General Plan Policies**, in section 5.10.9 below.

City of Highland Land Use and Development Code

Development of the Project site is regulated by the City of Highland Land Use and Development Code (Title 16 of the Highland Municipal Code), a key tool to implement the policies of the General Plan. Many of the goals, policies, and actions in this General Plan are achieved through zoning, which regulates public and private development. The zoning code contains the regulatory framework that specifies allowable uses for real property and development intensities; the technical standards such as site layout, building setbacks, heights, lot coverage, parking, etc.; aesthetics related to physical appearance, landscaping, and lighting; a program that implements policies of the General Plan; and the procedural standards for amending or establishing new zoning regulations.

5.10.4 Project Design Features

Design features refer to ways in which the proposed Project will avoid or minimize potential impacts through the design of the Project. The proposed Project has been planned with sensitivity to adjacent land uses.

Specifically, land use designations within the Specific Plan are arranged to minimize impacts to surrounding land uses. Design guidelines and development standards within the Specific Plan address aesthetic integration of uses within the site and with surrounding areas. The focus is to provide architectural, landscape, streetscape, and site design enhancements to ensure quality development while recognizing the area's unique history and natural resources. Detailed development standards, design guidelines, and use restrictions ensure high quality buildings, public areas, and community facilities for Harmony's residents and visitors to enjoy.

5.10.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project physically divide an established community?*

The Harmony Specific Plan encompasses approximately 1,657 acres of vacant land with some fallow, remnant orange groves. The Project site is bounded by national forest land to the north and a small, very low-density residential area to the northeast. Thus, the Project will not divide an established community and **no impacts** will occur as a result of the Project.

Threshold: *Would the proposed Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

Section 15125(d) of the State *CEQA Guidelines* requires EIRs to “...discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans.” The objective of such a discussion is to find ways to modify the proposed project, if warranted, to reduce any identified inconsistencies with relevant plans and policies. Pursuant to Section 15125(d), this DEIR includes an evaluation of the consistency of the proposed Project with pertinent goals and policies of relevant adopted local and regional plans.

A discussion of the proposed Project’s consistency with any applicable habitat conservation plan or natural community conservation plan is addressed in Section 5.4 (Biological Resources) of this document. The Air Quality Section of this DEIR (Section 5.3) discusses consistency with the applicable Air Quality Management Plan. Section 6.0 of this DEIR, “Consistency with Regional Plans,” discusses the Project’s consistency with the regional and local growth forecasts, the Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan, the SCAG Compass Regional Growth Principles, and provides an analysis of the Project’s impacts on the population, housing, and job projections for the region.

Future development of all land within the City is guided by the City of Highland General Plan which was adopted on March 14, 2006. The General Plan outlines comprehensive, long-term land use policies to guide development within the City. The land use policies implement the General Plan’s land use goals; therefore, if a project is consistent with the policies associated with a goal, such a project is deemed to be consistent with said General Plan goal. The Project includes a general plan amendment to revise the “assumed density” shown in Land Use Element Table 2.1 to 2.2 du/ac and to add and update roadway classifications. The proposed amendment will not revise any of the General Plan policies or objectives. The policies that are contained in the General Plan that are applicable to the proposed Project are analyzed in **Table 5.10-B** below. Policies deemed not relevant to the Project, based on proposed land uses, are not included in this table, but are included in Appendix O of this DEIR. Appendix O contains a complete list of all General Plan policies and their relationship to the Project.

Table 5.10-B – General Plan Consistency

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Land use Element			
Goal 2.1	Create opportunities for a diverse population to interact, exchange ideas, and establish and realize common goals as a unified community.		
Policy 3	Retain and provide a hierarchy of community gathering places, including the Town Center, park lands, a community center and plaza areas within new commercial, office, and industrial complexes.	The Harmony Specific Plan includes the development of approximately 223 acres as parks and community greenway. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are designed for activities such as walking, hiking and quiet reflection. The Harmony Specific Plan also includes the provision of approximately 4.3 acres for “The Parkhouse”, a private recreation facility featuring a clubhouse, swimming pool, and other active and passive amenities. Therefore, the proposed Project provides community gathering places including park lands and plaza areas. The proposed Project is consistent with this policy.	Consistent
Policy 4	Encourage future development to provide functional public spaces that foster social interaction.	See analysis of Policy 3 above. Therefore, the proposed Project is consistent with this policy.	Consistent
Goal 2.2	Preserve and enhance the quality and character of Highland’s existing residential neighborhoods.		
Policy 1	Maintain the integrity of existing residential neighborhoods by preventing through traffic wherever possible, prohibiting encroachment by incompatible uses, and providing appropriate buffers between residential and nonresidential uses, as well as between single- and multiple-family areas.	The Specific Plan Project site is surrounded by national forest land to the north, very-low density residential to the northeast, Mill Creek to the south, and citrus groves and rural estate residential neighborhoods to the southwest. For consistency with surrounding areas, the Project incorporates a variety of land uses into its land use plan. Of the Project’s 1,657 acres, 834 acres or 50% of the entire community is reserved for parks, recreation and open space, creating a buffer between the proposed residential land uses and surrounding	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		open space. Approximately 40% or 658 acres are proposed for residential uses. The diversity of the proposed residential densities, from 1 unit per acre up to 30 units per acre, facilitates development of an assortment of residential product types, including estates and traditional single-family detached homes which are similar to adjacent residential areas. Therefore, the proposed Project is consistent with this policy.	
Policy 3	Ensure that all new development is designed in a manner that preserves the quality of life in existing neighborhoods.	The City of Highland annexed the Project area in 2000 and later designated it Planned Development in its General Plan. In applying the Planned Development designation to the newly annexed area, the City of Highland intended for the property to develop into a high quality master-planned Project, with a greater level of community amenities and cohesiveness, superior design, and a more desirable living environment than could be achieved through conventional subdivision design and requirements. The proposed Project is a comprehensive plan for the development of a community combining environmental stewardship of the natural features within and around the Specific Plan area with development of traditional residential neighborhoods designed at a human scale and located within walking and biking distance to preserved open space, recreation areas, schools, and social gathering places. Therefore the Project is consistent with this policy.	Consistent
Goal 2.3	Provide a variety of urban, suburban and rural housing opportunities that are adequate to meet the City's share of regional housing needs.		
Policy 1	Provide a broad range of, and encourage innovation in, housing types that incorporate high quality design and construction.	The proposed Project is a master planned community that will be planned comprehensively to ensure quality development. The Specific Plan calls for a variety of housing types that are supported by services, in a well-planned environment. The Specific Plan	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		accommodates up to 3,632 residential units on 658 acres within 49 distinct residential planning areas. The Specific Plan incorporates a variety of housing types into its land use plan in order to address lifestyle considerations of singles, families, and empty nesters. The diversity of allowed densities, from 1 unit per acre up to 30 units per acre, facilitates the development of an assortment of residential product types, including estates, traditional single-family detached homes, clustered single-family detached homes, single-family attached condominiums, townhomes, and multifamily homes. Therefore, the proposed Project is consistent with this policy.	
Policy 2	Maintain residential areas that provide for and protect rural lifestyles, and protect natural resources and hillsides in the rural areas of the City.	The Specific Plan includes approximately 834 acres of recreation and open space, including approximately 112 acres of community greenway that provides residents with the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails. In addition, residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. Finally, one acre within the community greenway has been designated with an Agriculture Overlay; this unique area is envisioned to provide space for local farmers to grow and sell their produce. Therefore, the proposed Project is consistent with this policy.	Consistent
Policy 3	Maintain residential areas that provide for a suburban lifestyle, including ownership of single family housing.	Implementation of the Project would provide up to 3,632 residential units that would enhance the City's housing stock and provide homeownership opportunities for single family housing. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 4	Ensure that new residential development provides appropriate community amenities, including common open space and recreation areas.	The Specific Plan’s recreation and open space uses include approximately 111 acres of parkland, 4.3 acres of private recreation space, 112 acres for a community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes. Parks will be improved as active and passive recreational areas; active parks could include soccer fields and baseball fields as well as open play areas, basketball courts, picnic tables, and informal gathering areas, while passive parks will be designed for activities such as walking and hiking. Finally, a system of hiking trails and walking paths will connect Harmony’s neighborhoods to each other and to nearby areas of scenic beauty. Therefore, the Project provides appropriate community amenities and is consistent with this policy.	Consistent
Policy 5	Continue the innovative use of land resources and development of a variety of housing types and sizes within the City by using the Planned Development designation.	The Project site is located within the Seven Oaks policy area in the General Plan and the Project site’s General Plan land use designation is “Planned Development.” The proposed Project is a master planned community. The Project is consistent with this policy.	Consistent
Policy 6	Require the preparation of a specific plan, planned unit development, conditional use permit or similar mechanism for residential development within areas designated Planned Development.	The Project site is located within the Seven Oaks policy area in the General Plan and the Project site’s General Plan land use designation is “Planned Development.” The proposed Project includes implementation of the Harmony Specific Plan to guide development. Therefore, the Project is consistent with this policy.	Consistent
Policy 7	Require that Planned Development projects provide a greater level of community amenities and cohesiveness, achieve superior design and create a more desirable living environment than could be achieved through conventional subdivision design and requirements.	The proposed Project is a master planned community that will be guided by the Harmony Specific Plan to ensure greater levels of community amenities and cohesiveness. For instance, the Specific Plan contains design guidelines and development standards that address aesthetic integration of the Project with the surrounding areas. The focus of the Specific Plan is to provide architectural, landscape, streetscape, and site design enhancements that ensure	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		quality development while recognizing the site’s unique history and natural resources. Detailed development standards, design guidelines, and use restrictions in the Harmony Specific Plan ensure high quality buildings, public areas, and community facilities for Harmony’s residents and visitors to enjoy. Therefore, the Project is consistent with this policy.	
Policy 8	Encourage provision of low- and moderate-cost housing, as well housing for other identified special housing needs groups, consistent with the other provisions of the General Plan and the City’s Redevelopment Agency Plan and housing goals.	The Specific Plan accommodates 3,632 residential units on 658 acres within 49 distinct residential planning areas. The Specific Plan incorporates a variety of housing types into its land use plan that can help the City meet state housing requirements. Although the majority of the Project is single family, there is a range of housing types that gives Harmony the potential to serve numerous segments of the Highland community. State law assumes that higher density housing, provided by right on sites that can accommodate at least 16 units, has the potential to be affordable to lower and moderate income households at the market rate (without financial assistance from the City or other public agency). Single-family attached and multi-family homes in Harmony could contribute to the City’s efforts to identify adequate sites to meet the Regional Housing Needs Assessment in the next housing element, which has to be adopted and certified by October 2013, per state requirements. Therefore, the Project is consistent with this policy.	Consistent
Goal 2.4	Provide lands for retail and service commercial uses in sufficient quantity to meet the needs of Highland residents.		
Policy 1	Maximize sales-tax-generating uses through the strategic location of commercial areas, particularly at freeway interchanges, at major intersections, and within the Town Center and Golden Triangle (see also Town Center, Golden Triangle and Victoria Avenue Corridor Community Policy	The proposed Project is not located at a freeway interchange, or within the Town Center, Golden Triangle or Victoria Avenue Corridor Community Policy Areas. However, the Project designates a 5.7-acre site in the community’s southwest area for neighborhood commercial uses; this site allows up to 62,073 square feet of	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	Areas).	neighborhood commercial building space. In addition, to allow for flexibility to adapt to future market conditions, the Project also designates 15.9 acres with a Neighborhood Commercial Overlay which would allow for an additional 163,350 square feet of neighborhood commercial building space. These commercial uses will provide neighborhood serving retail goods and services to Harmony and the surrounding community. Therefore, the Project is consistent with this policy.	
Goal 2.6	Maintain an organized pattern of land use that minimizes conflicts between adjacent land uses.		
Policy 1	Require that new development be at an appropriate density or intensity based upon compatibility with surrounding existing and planned land uses	The Specific Plan Project site is surrounded by national forest land to the north, very-low density residential to the northeast, Mill Creek to the south, and citrus groves and rural estate residential neighborhoods to the southwest. For consistency with surrounding areas, the Project incorporates a variety of land uses into its land use plan. Of the Project's 1,657 acres, 834 acres or 50% of the entire community is reserved for parks, recreation and open space, creating a buffer between the proposed residential land uses and surrounding open space. Approximately 40% or 658 acres are proposed for residential uses. The diversity of the proposed residential densities, from 1 unit per acre up to 30 units per acre, facilitates development of an assortment of residential product types, including estates and traditional single-family detached homes which are similar to adjacent residential areas. Therefore, the proposed Project is consistent with this policy.	Consistent
Policy 4	Ensure that land uses develop in accordance with the Land Use Plan and Development Code in an effort to attain land use compatibility.	The Project site is designated in the General Plan Land Use Plan as the Seven Oaks Dam Policy Area, which is envisioned in the General Plan as the City's most significant prime master-planned residential opportunity to be planned comprehensively to ensure a quality	Consistent

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level
	<p>development that functions as a whole. The General Plan states that the Seven Oaks Policy Area could accommodate hundreds or even thousands of residential housing units depending upon a variety of natural and infrastructure constraints.</p> <p>The General Plan states that within the Planned Development designated areas, all residential land uses are considered to be appropriate, as are support uses (i.e., open space and recreation, public facilities, commercial, and all employment generating uses), subject to applicable General Plan policies and City ordinances. Development within areas designated Planned Development are processed through the use of a specific plan, a planned unit development, a conditional use permit or a similar device.</p> <p>Planned Development projects must provide a greater level of community amenities and cohesiveness, achieve superior design and create a more desirable living environment than could be achieved through conventional subdivision design and requirements.</p> <p>As set forth in Highland’s Development Code, the purpose of the Planned Development (PD) District is to: (i) provide for superior development by allowing a greater degree of design and land use flexibility within the framework of a site specific development plan; (ii) provide for large scaled, multi-phased residential ,commercial, or industrial mixed use developments; (iii) allow formulation of specific development standards and design criteria to respond to the particular features of conditions of a given site. (HMC, Section 16.12.010 A)</p> <p>The Harmony Specific Plan is consistent with the Planned Development Land Use designation in that it provides for the development of a new community of traditional residential</p>	

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		<p>neighborhoods combined with parks and recreation areas, neighborhood gathering places, neighborhood commercial services, and community facilities within an open space setting. (HSP, p. 1.1) The vision of the Harmony Specific Plan is for a community to knit together the natural setting of the Project site with its agrarian landscape, restoration and stewardship of the land, and a community lifestyle that embraces healthy living and lifelong learning. (HSP, p. 1-2) The Harmony Specific Plan incorporates sustainable design strategies in addition to residential and commercial design guidelines.</p> <p>As described in Section 5.10.1.3, the Project includes the following applications: a General Plan Amendment No. GPA 011-003, Zone Change No. ZC 011-003, Specific Plan No. SPR 011-001, and Tentative Tract Maps Nos. 18861 and 18871. These applications have been prepared and submitted to the City for review as set forth in Section 16.08.020 of the Highland Municipal Code.</p> <p>For the reasons set forth above, the proposed Project is consistent with this policy.</p>	
Policy 5	Promote compatible development through adherence to Community Design Element policies and guidelines.	See response to Goal 2.6 Policy 1 and Policy 4 above.	Consistent
Policy 6	Require developers to consider and address project impacts upon surrounding neighborhoods during the design and development process.	See response to Goal 2.6 Policy 1 and Policy 4 above.	Consistent
Policy 7	Require new or expanded uses to provide mitigation or buffers, including greenbelts or landscaping, between dissimilar uses or existing uses where potential adverse impacts could occur.	See response to Goal 2.6 Policy 1 and Policy 4 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 8	Prohibit future multiple-family development in existing single-family designated neighborhoods.	See response to Goal 2.6 Policy 1 and Policy 4 above.	Consistent
Policy 9	Require landscape and/or open space buffers to maintain a natural edge for proposed private development directly adjacent to natural, public open space areas.	The Specific Plan contains design guidelines and development standards that address aesthetic integration of the Project with the surrounding areas. The focus of the Specific Plan is to provide architectural, landscape, streetscape, and site design enhancements that ensure quality development while recognizing the site’s unique history and natural resources. For instance, the Specific Plan includes approximately 112 acres of community greenway that provides residents with the opportunity to connect with the natural topography of adjacent mountains and the site’s drainage features along its multipurpose trails. In addition, residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 2.7	Encourage natural resource and open space preservation through appropriate land use policies that recognize their value and through the conservation of areas required for the protection of public health and safety.		
Policy 1	Within the eastern portions of the City, utilize lower densities to protect agricultural lands, scenic resources and topographic features.	The overall density for the Specific Plan is 2.2 du/ac. Residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. In addition, the Specific Plan includes approximately 535 acres of natural open space which will preserve in perpetuity scenic resources and topographic features. Finally, design guidelines and development standards within the Specific Plan address aesthetic integration of uses within the site and with surrounding areas. The focus is to provide architectural, landscape, streetscape, and site design enhancements to ensure quality development while recognizing the area’s unique history and natural resources. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Preserve agricultural lands within the eastern portions of the City as commercial operations if possible, or within residential developments if not. Utilize Planned Developments with joint ownership or agricultural uses or placement of low density housing within an overall grove setting.	The Project site is zoned for Planned Development (PD) and the proposed Project is consistent with this designation through implementation of a Specific Plan. Of the Project area’s 1,657 acres, approximately 830 acres, or 50% of the entire community, is reserved for parks, recreation and open space and residential land use comprises approximately 658 acres, providing a variety of residential detached and attached housing types. In addition, one acre within the Community Parkway (PA 66) has been designated with an Agriculture Overlay; this area is envisioned to provide space for community gardens, stands for local farmers to sell their produce, and/or potentially recreational amenities for residents and complement the neighborhood commercial uses. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 4	Preserve areas designated as Open Space to provide for recreation, preservation of scenic and environmental values, managed production of resources (agriculture, water reclamation and conservation, mineral extraction) and protection of public safety.	See analysis of Goal 2.7, Policy 1 above. Therefore, the Project is consistent with this policy.	Consistent
Goal 2.15	Create a one-of-a-kind, high-quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities		
Policy 1	Ensure trail connections to existing or planned local and regional open space and trail systems	<p>Within the Project’s designated natural open space areas, a network of multipurpose trails are planned, largely based on existing trails that have been forged over the years. The proposed trail system is designed to link the planned community to the City of Highland, the natural forest and other adjacent land uses. Harmony’s trail network will also provide additional recreational opportunities for bicyclists, hikers, and equestrians. Various types of trails offer a wide range of experiences, from hiking/trekking equestrian trails in the natural areas to paved sidewalks and multipurpose trails in urban areas. The Specific Plan states that Trails that are in the City of Highland shall be designed and constructed to be consistent with the City of Highland General Plan Conservation and Open Space Element policies and the Multi-Use Trail Master Plan, as well as the Community Trails Committee (CTC) Trail Guidelines. Trails that connect to the San Bernardino National Forest shall be consistent with the San Bernardino National Forest Land and Resource Management Plan and coordinated with San Bernardino National Forest Service. Therefore, the Project is consistent with this policy.</p>	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 2	Provide extensive open space linkages within the site to connect to adjacent open space resources.	The Harmony Specific Plan includes the development of approximately 223 acres of parks, community greenways, parks and trails, connecting the proposed community to adjacent open space resources, see analysis of Policy 1 above. Therefore, the Project is consistent with this policy.	Consistent
Policy 4	Ensure that sufficient access, including emergency access, is provided to support future development.	The Project’s circulation system has been carefully planned to address both on- and off-site circulation requirements. The layout of the backbone circulation system provides direct, safe, and convenient access to and within the community. Emergency access will be maintained at all times. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Ensure that adequate public services and facilities keep pace with future development.	The Harmony Specific Plan provides for the development of a new elementary school and a new fire station. Additional public facilities totaling 18.5 acres can include water reservoirs, water treatment sites, and other similar facilities. In addition, the developers of the Harmony Specific Plan will pay the City applicable development impact fees established by the City Council. Therefore, the Project is consistent with this policy.	Consistent
Policy 6	Provide appropriate habitat corridor linkages in collaboration with applicable habitat conservation planning.	The Project site is not within the boundaries of an adopted habitat conservation plan that identified linkages. Therefore the Project is consistent with this policy.	Consistent
Policy 7	Implement future development guidance of the Seven Oaks area by means of a specific plan or similar mechanism.	The proposed Harmony Specific Plan serves as a mechanism to ensure that the development of the new community is accomplished in a cohesive manner and that the community is served by adequate infrastructure, open space, parks, and public facilities. This Project and implementation of the Specific Plan is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 8	Require that hillside development minimize alteration of the natural landforms and natural vegetation, while maximizing viewshed protection.	Residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. The Specific Plan also contains a conceptual grading plan that has been developed to ensure that grading is focused in the flatter terrain so that the steeper terrain is preserved as natural open space, and that critical sensitive environmental habitat is protected. Therefore, the Project is consistent with this policy	Consistent
Policy 9	Limit grading to the amount necessary to provide stable areas for structural foundations, street rights-of-way, parking facilities and other intended uses.	See analysis of Policy 6 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 10	Minimize import/export associated with grading.	See analysis of Policy 6 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 11	Consider clustered development, especially in connection with such recreational amenities as a golf course, in future planning activities for the site.	The Harmony Specific Plan incorporates a diversity of allowed densities, from 1 unit per acre up to 30 units per acre in order to facilitate the development of an assortment of residential product types including: estates, traditional single-family detached homes, clustered single-family detached homes, single-family attached condominiums, townhomes, and multi-family homes. By providing for a variety of housing opportunities the Specific Plan will address lifestyle considerations of singles, families, and empty nesters in addition to helping the City meet state housing requirements. (HSP, 12-2)	Consistent
Policy 12	Maintain the Greenport Agricultural Preserve until such time future development is proposed or more detailed planning is initiated. In the event that proposed development would impact the Agricultural Preserve, the City shall evaluate the feasibility of incorporating the Preserve into the development, consistent with the City	To ascertain the applicability of Policy 12 to the Project, a preliminary title report was obtained for the Project site. According to the preliminary title report, the Project site is not within the boundary of any agricultural preserve. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	adopted <i>Rules and Procedures for the Administration of Agricultural Preserves and Contracts</i> .	Nonetheless, in recognition of the agricultural history of San Bernardino County and the past uses of the Project site, the Harmony Specific Plan has designated a one acre Agriculture Overlay within the Community Greenway (Planning Area 66). The Agriculture Overlay will provide a space for local farmers to grow and sell their produce. (HSP, p. 12-2)	
Circulation Element			
Goal 3.1	Provide a comprehensive transportation system that facilitates current and long-term circulation in and through the City.		
Policy 1	Require new development proposals to ensure that all mid-block street segments operate at LOS “D” or better during the peak hours of traffic. (Note: Because of the location of the Palm Avenue/Pacific Street intersection within the Historic District, consideration will be given to alternatives to traffic signal mitigation. Alternatively, the City may elect to accept a lower LOS to retain the historic character of the District).	The proposed Project’s Traffic Study (See Appendix M and Section 5.16 Transportation and Traffic of this DEIR) was prepared in accordance with the City’s traffic study guidelines. Potential impacts to traffic and circulation have been mitigated to the extent feasible. As a part of the Project, the necessary traffic control measures would be installed to ensure that the City’s roadways function as intended. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Ensure that all intersections operate at LOS “D” or better during the peak hours of traffic.	See analysis of Policy 1 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Design and employ traffic control measures (e.g., install traffic signals, provide access restrictions, etc.) to ensure city streets and roads function as intended.	See analysis of Policy 1 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 8	Require development proposals with the potential to generate traffic volumes or other impacts not adequately evaluated in the Circulation Element and the General Plan Program EIR to prepare a traffic analysis consistent and compatible with the City’s Master General Plan Traffic Model.	Development within the Harmony Specific Plan will be served by a network of major highways, secondary highways, and collector roads, all of which have been modified from the typical sections provided in the City of Highland’s General Plan. Street typologies (i.e., cross-sections) and development standards are provided in the circulation plan of the Specific Plan. The General Plan Circulation	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		Element Roadway Network Map will be amended to show the final alignment of Greenspot Road through the Project. Therefore, the Project is consistent with this policy.	
Goal 3.3	Preserve and enhance uniquely scenic or special visual resource areas along appropriate routes for the enjoyment of all travelers		
Policy 2	Attractively landscape and maintain Highland’s Secondary Highways, Special Secondary Highways, Major Highways, Primary Arterials, and Modified Primary Arterials and prepare/ implement distinctive streetscape improvement plans.	Streetscape design guidelines, consistent with the City of Highland criteria, have been developed as part of the Specific Plan for the following elements: Perimeter Streetscapes (Modified Major Highways, Modified Special Highways, Modified Alternative Highways, Modified Collectors, and local collectors) and Neighborhood Streetscapes (neighborhood streets). The perimeter streets provide overall circulation surrounding the Harmony community, as well as to individual neighborhoods and neighborhood streets. The perimeter streetscapes/street-tree patterns are designed in a manner to complement and blend into the existing surroundings and shall also adhere to the criteria set forth by the City of Highland. The neighborhood streetscapes are designed to provide a cohesive and hierarchal element that ties the community together as a whole. Implementation of the streetscape design guidelines included in the specific plan will establish the projects character, while maintaining consistency with the City of Highland. Therefore, the Project is consistent with this policy.	Consistent
Goal 3.4	Provide a safe circulation system		
Policy 2	Require new development to install and maintain streets within planned residential areas as private streets and in accordance with development standards set forth in the Development Code and other applicable standards and guidelines.	The Harmony Specific Plan allows for one or more homeowner associations to be established for the maintenance of private common area improvements within residential developments of the Specific Plan area. Private improvements to be maintained by the homeowner association(s) include private streets, drives and lanes.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		Therefore, the Project is consistent with this policy.	
Policy 3	Promote the principle that streets have multiple uses and users, and protect the safety of all users.	On- and off-street pedestrian and bicycle circulation will be available throughout the Project by means of interconnected sidewalk paths and trails. A comprehensive system of off-road trails connects to and complements the Class I Bikeway/Pedestrian Path network provided within the road right-of-way. In addition, the proposed Project includes provisions for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Therefore, the Project is consistent with this policy.	Consistent
Policy 4	Require new development to provide pedestrian paths and linkages through projects, locating linkages to avoid conflicts with motorized traffic.	The circulation plan for the Harmony Specific Plan was carefully designed to ensure safety for all modes of transportation in the Specific Plan area. The network of sidewalks and multi-use trails planned for Harmony create a pedestrian- and bicycle friendly circulation system that encourages walking and biking while providing for the safe and efficient movement of automobiles through the community. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 5	Discourage high-speed, through traffic on local streets with appropriate traffic-calming measures (e.g., traffic enforcement, bulb-outs, lane striping, chokers, etc).	The circulation plan for the Harmony Specific Plan addresses both on and off-site circulation requirements. The circulation plan also reinforces the goal of creating a pedestrian friendly environment. Provision is made for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Reducing reliance on the automobile as a primary means of travel throughout the Specific Plan is a fundamental objective of the circulation plan. The Project includes development of an internal circulation system. The roadways that will be developed on site will be built to applicable roadway design standards including traffic-calming measures as required by the City.	Consistent
Policy 6	Design access onto major arterial streets in an orderly and controlled manner.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 7	Utilize shared driveways in common areas to minimize disruptions to traffic and pedestrian/bicycle flow.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 8	Implement street design features such as the use of medians, bus turnouts and consolidated driveways to minimize mid-block traffic congestion.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 10	Provide adequate sight distances for safe vehicular movement on roadways and at intersections.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 11	Encourage and improve pedestrian connections from residential neighborhoods to retail activity centers, employment centers, schools, parks, open space areas and community centers.	The proposed Project includes on- and off-street pedestrian and bicycle circulation by means of interconnected sidewalk paths and trails. These elements work together to seamlessly link residential neighborhoods to parks, neighborhood commercial, open space and community facilities. Therefore the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 13	Support the planning of sidewalks of appropriate width to allow the provision of buffers to shield nonmotorized traffic from vehicles.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 14	Add raised, landscaped medians and bulb-outs, where appropriate, to reduce exposure to cross traffic at street crossings.	See response to Goal 3.4, Policy 5 above.	Consistent
Policy 15	When feasible, walkways should include pedestrian amenities such as shade trees and/or plantings, trash bins, benches and shelters.	The Specific Plan contains Landscape Design Guidelines which guide the design of streetscapes and incorporates landscaping. Streetscape connects neighborhoods, allowing a smooth circulation of both vehicular and pedestrian traffic. The guidelines address comfort, safety, security, and accessibility for residents and visitors. Streets in neighborhoods will be designed to be more enjoyable, walkable, and interactive to pedestrians. The streetscape hierarchy consists of two levels of streetscape design: perimeter streets, which provide overall circulation surrounding the Harmony community as well as neighborhoods, and neighborhood streets, which provide circulation within residential neighborhoods.	Consistent
Goal 3.5	Promote bus service and paratransit improvements		
Policy 3	Work with Omnitrans to ensure that transit services are extended to serve residents in the eastern portion of the study area.	Currently the Project proponent is coordinating with Omnitrans. Bus service within the Project will be provided by Omnitrans. The initial bus route will enter the Project at Greenspot Road in the Project area's northwest corner and exit the Project at Newport Avenue. Two bus stops have generally been identified in coordination with the transit agency. The first stop will be located along Greenspot Road, near the Project's northwest entrance. The second will also be located along Greenspot Road, near the Community Park and Neighborhood Commercial node. The bus stops will be curb-adjacent and may be designed as pull out stops. The timing of bus service will	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		be determined by Omnitrans based on demand within the Project. As the Project develops over time, bus service may be expanded within the community. Therefore the Project is consistent with this policy.	
Policy 4	Coordinate with Omnitrans to provide safe, clean and attractive bus shelters at bus stops and transfer stations.	The Landscape Design Guidelines as part of the Specific Plan provide guidance for safe and attractive bus stops/shelters, in coordination with Omnitrans.	Consistent
Policy 5	Ensure accessibility of disabled persons to public transportation.	See response to Goal 3.5, Policy 3 above. The Project proponent is currently coordinating with Omnitrans.	Consistent
Goal 3.7	Protect and encourage bicycle travel.		
Policy 1	Develop a system of continuous and convenient bicycle routes to places of employment, shopping centers, schools, and other high activity areas with potential for increased bicycle use.	The circulation plan for the Harmony Specific Plan provides a comprehensive network for bicyclists, pedestrians, as well as motorists. Side paths connecting residential neighborhoods with parks and community facilities are planned within the public rights-of-way of roadways within the Specific Plan area. An off-street multi-use trail connects residential areas to open space areas within the community and to outside regional trails and natural amenities. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Encourage new development to provide reasonable and secure space for bicycle storage.	In 2011 the City adopted CALGreen as its own municipal green building code. Among the various requirements of CALGreen, a Project developer is required to provide permanently anchored bicycle racks, the requirements of which are set forth in the nonresidential sustainable design standards of CALGreen. The Project proponent is committed to adhering to the mandatory requirements of CALGreen. Therefore, the Project is consistent with this policy.	Consistent
Policy 3	Provide bicycle racks at all public facilities and along major	See analysis of Goal 3.7, Policy 2 directly above. Therefore, the	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	public streets.	Project is consistent with this policy.	
Policy 4	Assure that local bicycle routes will complement regional systems and be compatible with routes of neighboring municipalities.	See analysis of Goal 3.7, Policy 1 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Provide linkages between bicycle routes and other trails, such as the Santa Ana River Trail, within the City as appropriate.	See analysis of Goal 3.7, Policy 1 and 2 above. The Hiking, Biking and Equestrian trail along Mill Creek is designed to connect to the Santa Ana River Trail further west. Therefore, the Project is consistent with this policy.	Consistent
Public Services and Facilities Element			
Goal 4.1	Coordinate and balance the provision of public services with development activity to eliminate service gaps, maximize the use of public facilities, provide efficient and economical public services, achieve the equitable and legally defensible sharing of costs of such services and facilities, and maintain adequate service systems capable of meeting the needs of Highland residents.		
Policy 1	Prior to permitting, ensure that all major extensions of services, facilities and utilities are comprehensively reviewed for related social, economic and environmental impacts and identify mitigation measures as appropriate.	A specific plan is a tool for ensuring the coordinated development of a site so that it has appropriate and timely public services, community facilities, and infrastructure. The Harmony Specific Plan calls for the creation of public services and facilities to meet the needs of future residents. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Ensure that proposed development, which requires the extension of public services and facilities, will generate sufficient municipal income to pay for the operations, maintenance and replacement of those services and facilities by the City.	The proposed development will generate sufficient income through increased property tax and sales tax for the City. Therefore, the Project is consistent with this policy.	Consistent
Policy 3	Ensure that existing residents and businesses are not burdened with the cost of financing infrastructure aimed at supporting new development or the intensification of	Final determination as to the facilities to be financed and as to maintenance responsibilities, whether publicly or privately maintained, will be made prior to recordation of final maps and/or	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	existing development.	included in the Development Agreement. Private capital investment, a Community Facilities District established pursuant to the Mello-Roos Community Facilities District Act of 1982, or an Assessment District established for the purpose of funding the construction of public facilities are all potential financing options for the Project which will be determined and included in the Development Agreement, to alleviate any potential burden to existing residents and business owners. Therefore, the Project is consistent with this policy.	
Policy 4	Continue to ensure that public water, sewer, drainage and other facilities needed for a project phase are constructed prior to or concurrent with initial development within that phase, unless otherwise approved by the City.	The Harmony Specific Plan includes a phasing plan which ensures that infrastructure improvements adequately serve the types and amount of development described in the Specific Plan. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Continue to make the project sponsor of a proposed development ultimately responsible for ensuring the timely availability of all infrastructure improvements (including system wide improvements) needed to support the development.	See analysis of Policy 4 directly above. Therefore, the Project is consistent with this policy.	Consistent
Policy 15	Require the construction of public facilities as a condition of approval for a proposed development if the development exceeds the capacity of existing public facilities to support such development.	The Harmony Specific Plan provides for the development of a new elementary school and a new fire station. Additional public facilities totaling 18.5 acres can include water reservoirs, water treatment sites, and other similar facilities. Therefore, the Project is consistent with this policy.	Consistent
Policy 17	Continue to require that all new development pay the applicable Development Impact Fees established by the City Council.	The developers of the Harmony Specific Plan will pay the City applicable development impact fees established by the City Council. Therefore, the Project is consistent with this policy.	Consistent
Policy	Continue to require that planned communities participate	Infrastructure improvements are proposed in the Specific Plan to	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
22	<p>in the development of public infrastructure, in addition to the payment of development impact fees, through the following methods:</p> <ul style="list-style-type: none"> • An approved development agreement for all new specific plan or planned unit development projects that specifies the timing of infrastructure improvements in relation to project development. • An annual review of improvements conducted for all new specific plans and an annual report in a format that can be easily included in the City’s infrastructure assessment and reporting system. 	<p>adequately serve the types and amount of development described in the Specific Plan. As a part of the Project a development agreement will be prepared; this will provide a framework for the development of the Harmony Specific Plan, establish provisions related to phasing of development, timing of infrastructure and public facilities, and provisions for infrastructure financing. Therefore, the Project is consistent with this policy.</p>	
Goal 4.3	Provide a safe and effective sewer system that meets the needs of Highland residents, businesses and visitors.		
Policy 3	<p>Encourage Grey Water Recycling, especially for residential use irrigation.</p>	<p>Recycled water will be supplied to the Harmony Specific Plan by EVWD. Currently there are no recycled water facilities within the EVWD service area. However, as discussed in the Specific Plan section regarding sewer service (3.5.2 C), Harmony will provide an on-site wastewater treatment plant that in turn will produce recycled water for use within the Project area. Therefore, the Project is consistent with this policy.</p>	Consistent
Goal 4.4	Maintain an effective drainage system that protects people and property from overflows and flood disasters.		
Policy 2	<p>Minimize the impact of development on the City’s drainage system by reducing the amount of impervious surface associated with new development and encouraging site design features or landscaping that capture runoff. Encourage on-site retention of stormwater and compliance with requirements of the National Pollutant Discharge Elimination System.</p>	<p>Infrastructure improvements are proposed to adequately serve the types and amount of development described in the Specific Plan. The stormwater management system generally consists of inlets, outlets, underground conduits, and soft-bottom channels to collect, convey, and deliver storm flows in accordance with City of Highland requirements to prevent flooding. The Specific Plan includes requirements for drainage plan approval, including a detailed Master</p>	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		Drainage Plan, and compliance with the latest County of San Bernardino MS4 permit. Therefore, the Project is consistent with this policy.	
Goal 4.5	Minimize, recycle, and dispose of solid waste in an efficient and environmentally sound manner.		
Policy 3	Reduce the volume of solid waste material sent to landfills by continuing source reduction, recycling and composting programs in compliance with State law and encouraging the participation of all residents and businesses in these programs.	Pursuant to Highland Municipal Code Sections 8.12.010 <i>et seq.</i> (Integrated Waste Management), the City provides for or furnishes integrated waste management services relating to collection of refuse, recyclable, and compostables within and throughout the City. Under the Municipal Code, franchisees are required to implement measures to achieve the City's solid waste and recycling goals mandated by the California Integrated Waste Management Act of 1989. All single-family residences in the City are provided with three 95-gallon waste carts for trash, recycling, and green waste. ² All residential and commercial uses within the Project will participate in the City's recycling program, and franchisees serving the Project will be required to implement measures to support the City's waste reduction and recycling goals. For attached units, recycling bins will be located within common areas.	Consistent
Goal 4.8	Ensure the provision of adequate staffing, equipment and facilities to support effective fire protection and emergency medical services that keep pace with growth.		
Policy 1	Work with the fire department to ensure that response time standards and a high level of service are maintained.	A site for a fire station is proposed on 1.5-acres to meet emergency response and fire suppression demand in Harmony and the surrounding area. It has been strategically located to serve the entire community as well as provide emergency back-up service to nearby rural areas. The fire station is proposed along Newport Avenue which will be centrally-located at Project build out This 1.5-acre site is	Consistent

² See <http://publicservices.cityofhighland.org/Trash/> (accessed September 28, 2013).

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		strategically located at the center of the community to ensure that all areas of Harmony can be reached from the fire station within a four-minute driving time at 35 miles per hour, which is a typical industry standard for fire response times. Therefore, the Project is consistent with this policy.	
Policy 3	Coordinate and cooperate with the East Valley Water District to maintain and/or upgrade water facilities to ensure adequate water supply is available for fire suppression operations.	As a requirement of the Specific Plan, the design of all water facilities proposed for the Project shall provide fire protection to the satisfaction of the Fire Department. Therefore, the Project is consistent with this policy.	Consistent
Policy 4	Ensure the availability of adequate fire flow prior to the recordation of residential tracts or parcel maps and prior to the issuance of commercial building permits by requiring the testing of all fire hydrants in the vicinity of the project at the applicant’s expense. In the absence of adequate flow, require either the installation of onsite fire protection devices or improvements that upgrade the area’s water system to accommodate an adequate flow.	The Project proponent is required to ensure the availability of adequate fire flow prior to the recordation of residential tracts or parcel maps and prior to the issuance of commercial building permits. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Ensure that development in Fire Hazard Zones comply with adequate fire safety standards (e.g., fuel modification zones, perimeter roads, greenbelts, etc.).	One of the Goals of the Specific Plan is to develop a land use plan responding to the unique environmental conditions of the area. Fire hazards were considered during the land use planning process. The Project site is located on the wildland-urban interface, an area with unique fire protection needs. Fuel modification zones—landscape areas that reduce the threat of fire through vegetation and maintenance—are required in Harmony and are called Fire Modification Zones. The Specific Plan requires a 200-foot Fire Modification Zone on the northwest, north, northeast, and east perimeter exposures, as well as any slopes with a grade of 10 percent or more, and a 150-foot zone on the west, southwest, south,	Consistent

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		<p>and southeast perimeter exposures and any slopes in those areas with a grade of 10 percent or more. The first 100 feet of a fuel modification area must be irrigated, and plantings must be selected from the master plant palette fuel modification list.</p> <p>A Conceptual Fire Protection Plan was prepared for the Project site. Implementation of the plan, which identifies the locations of required Fire Protection Zones and Fuel Modification Zones, will ensure that detailed fuel modification zone location plans, landscape plans, and vegetation management plans will be submitted to the Fire Marshal for approval prior to construction; thus, demonstrating compliance with the Conceptual Fire Protection Plan and with all applicable Fire Department and Building Safety Requirements. Therefore, the Project is consistent with this policy.</p>	
Goal 4.9	Maintain cooperative school and public facility planning to ensure the provision of adequate school facilities and quality educational programs in a manner consistent with other City goals and policies on facility location, use, timing, funding, recreational and social joint use programs.		
Policy 1	Continue to coordinate with local school districts on resolving issues such as joint use facilities, new facility locations and alternative use of vacant or underutilized sites in the City.	An 8.3-acre site adjacent to a 5-acre park is planned for a public elementary school. The park is proposed to be joint-use so that students and community at large will benefit. The Specific Plan directs the developer to collaborate with the school district in the planning of school facilities. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Require that new development provide the necessary funding and/or resources to establish school facilities commensurate with the impact of development on school services. In cases where existing school capacity does not support new development, require the implementation of appropriate funding mechanisms, as permitted by law, to	See response to Goal 4.9, Policy 1 above. Schools will be provided in the proposed Project and school impact fees will be paid as required. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	<p>ensure the availability of adequate school facilities. Potential financing avenues include:</p> <ul style="list-style-type: none"> • A contract with the developer to provide funds for schools • Land dedications • Lease back turnkey program <p>Special assessment district financing, such as Mello Roos Community Facilities Districts, for the proposed area of development</p>		
Conservation and Open Space Element			
Goal 5.1	Preserve, maintain and create views and vistas throughout the community to enhance the visual experience of Highland.		
Policy 1	Incorporate view corridor planning in related development efforts and capital improvement programs.	The Harmony Specific Plan includes neighborhood design principles which promote the natural vistas that the community has to offer. The neighborhood planning design guidelines call for careful building placement and street orientation to protect views and visual quality. The guidelines also state that where feasible, lotting and building placement shall consider views of the mountains, as well as creating vistas to Mill Creek and adjacent valleys. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Along roadway-based view corridors, frame views of attractive features of the natural and built environment with appropriately placed median and street tree landscaping. Use of fire-resistant vegetation and ample spacing between trees and shrubs is encouraged to reduce the spread of fires.	The backbone circulation system is laid out along natural contours, thereby creating views of natural landforms. Street typologies (i.e., cross-sections) and development standards are provided in the circulation plan of the Specific Plan which require among other things, attractively landscaped streets and the use of fire resistant and drought tolerant landscaping. In addition, the landscape guidelines provide several strategies to enhance view corridors	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		through strategic plantings. Lastly, the design features for Harmony include the use of Fire Protection Zones, which includes trail rights-of-way and fire-resistant plantings that create a buffer between the community and the mountains. All tree and plant materials must correspond with the Fire Protection Plan. Therefore, the Project is consistent with this policy.	
Policy 3	Enforce hillside development standards that call for natural contour grading, environmentally sensitive design, shape and siting techniques, and fire-retardant building materials.	Residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. The Specific Plan also contains a conceptual grading plan that has been developed to ensure that grading is focused in the flatter terrain so that the steeper terrain is preserved as natural open space, and that critical sensitive environmental habitat is protected. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Require that all excess excavated material (waste materials) be properly removed and disposed of or otherwise reincorporated into the development plan without compromising natural contours or aesthetic qualities of the site.	See analysis of Policy 3 directly above. The Project will require that excavated material be disposed of pursuant to all applicable laws and regulations. Therefore, the Project is consistent with this policy.	Consistent
Policy 7	Encourage developers in high slope gradient areas to use raised floor systems and stepped footages to leave slope contours in a more natural state.	The Harmony Specific Plan includes a conceptual grading plan. The grading plan takes into account four major considerations: 1) the site generally slopes upward from the west to the east starting at 7% to 10% until reaching a hinge point where the slope rapidly steepens, 2) grading for development is focused in the flatter terrain, 3) steeper terrain (>25% slopes) is preserved as natural open space and 4) critical sensitive environmental habitat is protected. Following these provisions will allow future grading plans to be developed that minimize alteration of the landform. Therefore, the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level						
Policy 8	Retain existing vegetation within or alongside hillside development areas except where such vegetation poses a risk to buildings in high fire hazard zones (see Goal 6.5, Public Health and Safety Element). Use native, fire resistant, drought-tolerant plant material in fuel modification areas when existing vegetation can not be retained.	See response to Goal 4.8, Policy 5 above.	Consistent						
Policy 9	Preserve mature trees, natural hydrology, native plant materials and areas of visual interest.	<p>Approximately 530 acres of the site (or 32%) will remain as natural open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved. All trees and vegetation in the natural open space areas will be preserved. The majority of the natural open space provides a transition to the San Bernardino National Forest and as such offers some protection of the view shed. The portions of the Project site to be developed will have the majority of the existing vegetation removed, including the former orchards because the trees are aging and no longer productive. The Landscape Design Guidelines for the Harmony Specific Plan identified three landscape districts, each of which possesses a distinctive character that will contribute to the overall agricultural theming of the community. Each district includes a fruiting tree and a native tree. The districts and their trees are: (HSP, pp. 9-3-9-6)</p> <table border="0"> <tr> <td>Citrus District</td> <td>Agricultural Tree: Orange Tree Native Tree: California Bay</td> </tr> <tr> <td>Walnut District</td> <td>Agricultural Tree: English Walnut Native Tree: Coast Live Oak</td> </tr> <tr> <td>Apple District</td> <td>Agricultural Tree: Apple Native Tree: California Sycamore</td> </tr> </table>	Citrus District	Agricultural Tree: Orange Tree Native Tree: California Bay	Walnut District	Agricultural Tree: English Walnut Native Tree: Coast Live Oak	Apple District	Agricultural Tree: Apple Native Tree: California Sycamore	Consistent
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Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		Although the Project will entail the removal of mature trees and some native plant materials, because areas of visual interest, i.e., the view of the mountains, are being preserved and the landscape plan includes native plant species and trees that will mature over time, the Project is considered consistent with this policy.	
Goal 5.2	Achieve an orderly transition from agricultural uses to low density residential/equestrian uses.		
Policy 1	Ensure that farmlands converted to other uses are consistent with the East Highlands Ranch Planned Development.	The transition from agricultural use to residential is managed by the provisions of the Harmony Specific Plan, which has land uses similar to the East Highlands Ranch Planning Development. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Incorporate appropriate land use transitions and buffering techniques into new development	The transition from agricultural use to residential is managed by the provisions of the Harmony Specific Plan to ensure that development is orderly; adequately served by services, facilities, and infrastructure; and respects critical areas of natural resources. The Harmony Specific Plan specifies that the agriculture character of the community will be apparent from the landscape and street design that uses agricultural themes in an aesthetic portrayal of agricultural character. The Specific Plan provides general standards for the agriculture landscape to minimize conflicts between agriculture and other adjacent uses by establishing buffers and using fencing appropriate, and by broadly disseminating information about seasonal agricultural uses. Therefore, the Project is consistent with this policy.	Consistent
Policy 3	Incorporate appropriate edge treatment between the agricultural/equestrian uses and higher density residential uses through landscaped buffers, greenbelts, view fencing and parkways.	The Specific Plan provides general standards for the agriculture landscape of the community to minimize conflicts between agriculture and other adjacent uses by establishing buffers and using fencing appropriate, and by broadly disseminating information about seasonal agricultural uses. Therefore, the Project is consistent with	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		this policy. The Specific Plan incorporates edge treatments between land uses and contains standards for ag-inspired streets, and ag-inspired plantings in parks and transition zones. Therefore, the proposed Project is consistent with this policy.	
Policy 4	Preserve visual reminders of the City’s agricultural heritage in park design, buffer zones, public use areas and landscape plans.	As part of the design and landscape design guidelines of the Specific Plan, the agricultural character of the community will be apparent by the landscape from the agriculture-inspired streets that will portray an agricultural character only in aesthetics. In addition, selective entries and slope areas will incorporate agricultural plantings where feasible. Therefore, the proposed Project is consistent with this policy.	Consistent
Goal 5.5	Continue to reduce urban runoff.		
Policy 1	Use water quality best management practices (BMPs) in land planning, project-level site planning and procedural requirements as part of the Storm Water Quality Management Plan.	A Conceptual Water Quality Management Plan (CWQMP) has been prepared for the Harmony Specific Plan defining requirements and options for treatment of surface runoff in a manner to comply with requirements of City of Highland. The Project will be required to comply with requirements of the National Pollutant Discharge Management Elimination System (NPDES) permit. As part of the CWQMP prepared for the Project, Best Management Practices (BMPs) have been identified to control discharges of pollutants into receiving waters. The CWQMP shall be approved by City of Highland. Therefore, the proposed Project is consistent with this policy.	Consistent
Policy 3	Require site design practices that capture and channel specified percentages of rainfall and other runoff to permeable surfaces.	The Harmony Specific Plan drainage concept collects a portion of natural runoff from the foothills on the northeast in a separate “bypass” storm drain system then safely conveys this runoff in a separate storm drain system to the adjacent Mill Creek. The remaining project runoff is conveyed in a separate storm drain system to both Mill Creek and the Santa Ana River. The collection	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		and routing of on-site storm flow will primarily rely on a new network of storm drains. In most instances, the proposed storm drains will parallel or cross low-flow water quality features that are consistent with the San Bernardino WQMP requirements. This creates the opportunity to release nuisance flows and lower rate storm flows into the low-flow water quality features. Low-flow swales promote capture and recharge of storm water. (RBF (a), p. 15) Therefore, the proposed Project is consistent with this policy.	
Policy 6	Retain water on site through the use of attractively landscaped retention basins and other measures to replenish aquifers.	See analysis of Goal 5.5, Policy 3 above.	Consistent
Goal 5.6	Monitor and strengthen Highland’s water conservation practices.		
Policy 3	Continue to specify and install water-conserving plumbing fixtures and fittings in public facilities such as parks, community centers and government buildings in accordance with Title 24 of the California Code of Regulations.	This is a municipal measure. Nonetheless, the Project is consistent with this policy because it reduces potable water use by 20 percent compared to baseline water use levels through the use of water saving fixtures and or flow restrictors and uses 37 percent non-potable water for outdoor usage. Additionally, the CALGreen Code requires the use of weather-based automatic irrigation systems, and efficient plumbing fixtures.	Consistent
Policy 5	Ensure that the latest water-saving technologies for domestic and landscaping uses are incorporated into new developments or retrofitted into existing developments where intensification is proposed.	See response to Goal 5.6, Policy 3 above.	Consistent
Policy 6	Encourage the use of drought-tolerant plants and water-efficient landscape design.	The Master Plant Palette provided in the Specific Plan incorporates species are considered drought tolerant. Additionally, the CALGreen Code requires the use of weather-based automatic irrigation systems, and the Project proponent is committed to adhering to the	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		mandatory requirements of CALGreen.	
Policy 7	Encourage alternatives to lawns and turf uses, except for parks, playing fields, children’s play areas and other specialized uses.	As part of the landscape design guidelines in the Specific Plan, the use of turf grass is encouraged in active use and residential areas only. Groundcovers and drought-tolerant grasses that require less water are encouraged in nonactive areas. Therefore, the proposed Project is consistent with this policy.	Consistent
Policy 8	In general, work to reduce turf landscaping. Where domestic water supplies are used in the irrigation of turf areas, encourage the use of tall fescue varieties or other warm season turf.	See response to Goal 5.6, Policy 7 above.	Consistent
Policy 9	Consider underground irrigation techniques to conserve water.	See response to Goal 5.6, Policy 3 above.	Consistent
Policy 10	To the extent possible, require the preservation of existing native trees and shrubs.	There are few native trees and shrubs on the Project site because most of the Project boundary consisted of citrus groves. Several groves remain in the northwest portion of the Project site, but the rest have been abandoned. The proposed Project contains landscape and design guidelines which incorporate native species and require landscaped streets as part of the streetscape program. Therefore, the Project is consistent with this policy. See response to Goal 5.7 Policy 12 below.	Consistent
Policy 11	Within each model home complex, require that homes incorporate a specified amount of drought-tolerant landscaping.	The Landscape Design Guidelines of the Specific Plan includes provisions on drought-tolerant plant types, planting methods and water irrigation recommendations. In addition, each single-family lot shall be provided with front-yard landscaping with a permanent automatic irrigation system. At a minimum, appropriate size shrubs and trees shall be provided as landscaping materials. A variety of typical landscape designs shall be provided based upon each building	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		type within the subdivision. Conceptual landscape and irrigation drawings for each development shall be submitted in conjunction with house construction plans. The plans shall be approved by the City of Highland,	
Policy 12	Require residential builders to provide information, including a plant palette of xeriscape species, to prospective buyers of new homes within the City of Highland regarding drought-tolerant planting concepts.	See response to Goal 5.6, Policy 11 above.	Consistent
Policy 13	Where possible, require the extensive use of mulch in landscape areas to improve the water-holding capacity of the soil by reducing evaporation and soil compaction.	As part of the Specific Plan, the use of drought tolerant plants, mulch, installation of drip irrigation systems, minimizing of impervious areas, and the designing of landscaped areas as shallow swales to retain irrigation water is encouraged, where feasible, to reduce water use.	Consistent
Policy 14	In new developments require, and in existing uses encourage, the installation of efficient irrigation systems that minimize runoff and evaporation. Such systems include: <ul style="list-style-type: none"> • Drip irrigation • Soil moisture sensors • Automatic irrigation systems with appropriate timing devices to minimize evaporation. • Subsurface, or underground, irrigation. 	See response to Goal 5.6, Policy 14 above.	Consistent
Policy 15	Establish landscape maintenance districts along streets for water conservation purposes.	The Project will include a Landscape and Lighting Maintenance District. Therefore, the proposed Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 5.7	Maintain, protect and preserve biologically significant habitats, including riparian areas, woodlands and other areas of natural significance.		
Policy 2	Ensure that all development, including roads proposed adjacent to riparian and other biologically sensitive habitat; avoid significant impacts to such areas.	For a complete list of impacts to biological resources, please refer to Section 5.4 (Biological Resources) of the DEIR. The Santa Ana River woolly star is the only federally and state listed plant species observed during biological resources monitoring of the Specific Plan area in 2011 and 2012. Other sensitive species were observed in generally concentrated areas. The developable areas were generally sited to avoid sensitive habitat areas. However, some sensitive habitat is planned to be developed. Through compliance with the mitigation measures listed in Section 5.4 (Biological Resources) of this DEIR, impacts will be less than significant. Therefore, the proposed Project is consistent with this policy.	Consistent
Policy 3	Require that new development proposed in such locations be designed to: <ul style="list-style-type: none"> • Minimize or eliminate the potential for unauthorized entry into the sensitive area; • Create buffer areas adjacent to the sensitive area, incorporating the most passive uses of the adjacent property; • Protect the visual seclusion of forage areas from road intrusion by providing vegetative buffering; • Provide wildlife movement linkages to water sources and other habitat areas; • Provide native vegetation that can be used by wildlife for cover along roadsides; and 	See analysis of Goal 5.7, Policy 2 directly above. The Harmony Specific Plan includes approximately 834 acres of recreation and open space, including 535 acres which will remain in natural open space, creating a buffer from development and the adjacent natural open space areas. The 535 acres of natural open space includes approximately 47 acres of Riversidean Alluvial Fan Sage Scrub that supports the Santa Ana River woolly star which will remain preserved. Within the natural open space areas to the north, a network of multipurpose trails are planned, largely based on the existing trails that have been forged over the years. (HSP, p. 4-8) In concert with the passive recreational trails, educational and interpretive stations and signs, including the woolly star set aside area, are sited to capture the interest of users and promote an understanding and stewardship of the land, to further help protect this sensitive area and prevent unauthorized entrance (HSP, p 1-4).	Consistent

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level
	<ul style="list-style-type: none"> • Protect wildlife crossings and corridors. 	Therefore, the proposed Project is consistent with this policy.
Policy 4	Design lighting systems so as to avoid intrusion of night lighting into the sensitive area.	The proposed Project will be required to comply with all applicable codes and ordinances which require that lighting systems avoid intrusion of night lighting into sensitive areas. Therefore, the proposed Project is consistent with this policy.
Policy 5	As part of the environmental review process, require that projects determined to be located within a biologically sensitive area prepare documentation on the impacts of such development along with mitigation and mitigation monitoring programs.	For a complete list of impacts to biological resources, including a list of mitigation measures related to biological resources, please refer to Section 5.4 (Biological Resources) of the DEIR. As required by CEQA, a mitigation monitoring and reporting program will be included as part of the Final EIR. For these reasons the proposed Project is consistent with policy.
Policy 6	Ensure that required biological assessments are conducted in cooperation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.	Biological resources monitoring of the Specific Plan area was conducted in 2011 and 2012. A copy of the Habitat Assessment is included as Appendix D of this DEIR. The biological monitoring was conducted in accordance with the protocols established by the resource agencies for the species being monitored. The biologists conducting the monitoring and the focused surveys possess the requisite permits from the California Fish and Wildlife and the U.S. Fish and Wildlife Service. Additionally, staff from the resource agencies were present during some of the biological surveys. In this manner, the Project's Habitat Assessment was conducted in cooperation with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. Therefore, the proposed Project is consistent with this policy.
Policy 7	Within existing natural and naturalized areas, preserve existing mature trees and vegetation.	Approximately 530 acres of the site (or 32%) will be devoted to natural open space. These areas generally contain steeper slopes and canyons, and sensitive wildlife and habitat areas to be preserved. The majority of the natural open space provides a transition to the

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		San Bernardino National Forest. Therefore, the Project is consistent with this policy.	
Policy 8	Within rural and hillside residential areas, permit only such natural vegetation to be removed as is necessary to locate home sites, construct access roads and ensure fire safety.	See response to Goal 5.7 Policy 7 above.	Consistent
Policy 9	Enforce requirements that healthy, mature individual specimen trees be preserved in place, as per the City Municipal Code.	<p>This is a municipal measure intended to retain, to the extent feasible, significant heritage trees within the City. Historically most of the Project site consisted of citrus groves. Several groves remain in the northwest portion of the Project, but are no longer harvested and the rest have been long abandoned. Elderberry trees, an invasive and ubiquitous species also are located within the Project site. Any tree not located on natural open space will need to be removed as part of Project implementation and the applicant will obtain a tree removal permit if necessary.</p> <p>The proposed Project will implement this policy through the planting through the implementation of tree lined streets. The Harmony Landscape Plan identifies a fruiting tree, a native tree, and street trees for each of the Project's three landscape districts.</p>	Consistent
Policy 12	Require replacement at a 2:1 ratio of all mature trees (those with 24-inch diameters or greater measured 4½ feet above the ground) that are removed.	The proposed Project contains landscape and design guidelines which require tree lined streets as part of the streetscape program, trees planted as part of monumentation, and trees planted throughout the Project to define separate landscape districts, which should meet the requirement of replacing all trees 24-inch diameters or greater that are removed. Therefore, the Project is consistent with this policy.	Consistent
Goal 5.8	Protect, document and minimize disruption of sites that have archaeological significance.		
Policy 1	Avoid significant impacts in all new developments within	The <i>Phase I Cultural Resources Investigation</i> prepared for the Project	Consistent

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level
<p>areas determined to be archaeologically sensitive through the following measures:</p> <ul style="list-style-type: none"> • Conduct an archaeological records search with the • Archaeological Information Center in order to identify • Potential on-site sensitivities; • In cooperation with a qualified archaeologist, develop • Mitigation measures for projects found to be located in or near sensitive areas or sites; and <p>Require that environmental review be conducted for all applications within the area designated as archaeologically sensitive, including but not limited to grading, earth moving and stockpiling, and building and demolition permits.</p>	<p>(Appendix E) identifies mitigation measures, which are described in Section 5.5.6, to reduce potential impacts to cultural resources to less than significant. Therefore, the Project has complied with this policy.</p>	
<p>Policy 3</p> <p>Coordinate with the San Manuel Band of Mission Indians when proposals for development projects are filed within the Areas of Sensitivity for Archaeological Resources (illustrated in Figure 5.2) through the following actions:</p> <ul style="list-style-type: none"> • Notify the San Manuel Band of Mission Indians via notification mailings about proposed projects in archaeologically sensitive areas; and <p>Invite comments and suggestions to be forwarded to City staff and appropriate decision makers to aid the preservation and development review processes.</p>	<p>In accordance with SB 18, the City initiated consultation with six Native American Tribes and Interested parties provided by NAHC. Therefore, the Project has complied with this policy.</p>	<p>Consistent</p>

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 5.10	Maintain a high-quality system of parks that meet the needs of all segments of the community.		
Policy 7	Provide handicap access to all parks.	Handicap access would be provided to all parks via sidewalks and trails designed to Title 24 ADA standards. Compliance with all applicable accessibility requirements would be evaluated during the City's building plan check review for all improvement plans.	Consistent
Policy 8	Develop a multi-dimensional recreation program for all citizen groups in Highland including exercise, arts and crafts and cultural enrichment.	The Harmony Specific Plan includes the development of approximately 211 acres as parks and a community greenway. Parks will be improved as active and passive recreational areas. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are design for activities such as walking, hiking and quiet reflection. Harmony offers its residents the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails that meander through the community's greenway system.	Consistent
Policy 9	Provide a variety of activity options, including active and passive uses, within each park.	See response to Goal 5.10, Policy 9 above.	Consistent
Policy 17	Require that new specific plans and planned unit developments (PUDs) incorporate sufficient park and recreation facilities along with natural open space areas, where appropriate, to serve the needs of their future residents.	Parks within Harmony are planned to provide a range of activities and passive spaces to meet the needs of a diverse community. Approximately 834 acres of Harmony are reserved for parks, recreation, and open space combined. This represents over 50 percent of the entire community. Parkland alone includes 111 acres for both active and passive recreation. Active park amenities could include sports fields, ball courts, informal playing fields, playgrounds, tot lots, picnic and barbecue areas, a dog park, and restrooms and parking. Passive parks will focus on providing spaces for relaxing, walking, and appreciating scenic beauty. Therefore, the Project is	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		consistent with this policy.	
Policy 19	Connect newly developed parks, wherever practical, to the existing and future bicycle and recreational trail system.	A system of hiking trails, bike trails, and walking paths will connect Harmony’s neighborhoods to each other and to nearby open space areas. Therefore, the Project is consistent with this policy.	Consistent
Policy 22	Develop recreational opportunities within the Greenspot area.	See response to Goal 5.10, Policy 17 above.	Consistent
Policy 23	Design parks in accordance with contemporary safety standards and “CPTED” (Crime Prevention Through Environmental Design) principles.	<p>There are four main principles to CPTED:</p> <ol style="list-style-type: none"> 1. Natural Surveillance: Keeping the environment maintained so park users are easily seen by other users, park staff, and anyone passing by the park, trail, or playground. 2. Natural Access Control: Something in the park design, e.g., fence, landscaping, paths, that provides natural ingress and egress and clearly indicates areas for users to walk, jog, and/or bicycle. 3. Territoriality. Reinforcement to distinguish public vs., private spaces and to show that someone owns and cares about the space. 4. Maintenance: Parks should only build what can be maintained. Without maintenance a public area is inviting to criminal behavior <p>Exhibits 9-9 through 9-11 of the Specific Plan illustrate how Harmony’s parks incorporate principles 1 through 3. Maintenance of Harmony’s public and private parks (principle 4) will be the responsibility of the City and/or the HOA(s). Therefore, the Project is consistent with this policy.</p>	Consistent
Policy	Pursue joint public/private development of recreation facilities, especially in areas where joint development	An 8.3- acre site adjacent to a 5-acre park is planned for a public elementary school. The park is proposed to be joint-use so that	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
26	would maximize use of existing facilities, as well as add new land to the facility.	students and community at large will benefit. The Specific Plan directs the developer to collaborate with the school district in the planning of school facilities. In addition to this traditional educational facility, the Specific Plan also calls for nature and agricultural education through a series of interpretive signs along the trail network and at the Santa Ana River woolly star set aside area. Therefore, the Project is consistent with this policy.	
Goal 5.11	Provide excellent opportunities and facilities for hiking, equestrian and bicycle use through the Multi-Use Trail Master Plan.		
Policy 1	Require, where appropriate, that residential, commercial and industrial developments within the City dedicate and construct trail links within their boundaries as part of the Multi-Use Trail Master Plan.	Harmony’s trail network will provide additional recreational opportunities for bicyclists, hikers, and equestrians. Various types of trails offer a wide range of experiences, from hiking/trekking equestrian trails in the natural areas to paved sidewalks and multipurpose trails in urban areas. The Specific Plan states that Trails that are in the City of Highland shall be designed and constructed to be consistent with the City of Highland General Plan Conservation and Open Space Element policies and the Multi-Use Trail Master Plan, as well as the Community Trails Committee (CTC) Trail Guidelines. Trails that connect to the San Bernardino National Forest shall be consistent with the San Bernardino National Forest Land and Resource Management Plan and coordinated with San Bernardino National Forest Service. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Provide equestrian, bicycling and pedestrian staging areas consistent with plan standards.	See response to Goal 5.11 Policy 1 above.	Consistent
Policy 11	Locate trail linkages to minimize conflicts with motorized traffic.	See response to Goal 5.11 Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 5.12	Develop and maintain trail and bikeway connections to recreational facilities, schools, existing transportation routes, natural features and regional trail systems.		
Policy 1	Provide trail connections between and/or along the major city and surrounding regional facilities, sites and features indicated on the Multi-Use Trails Master Plan.	The Specific Plan states that trails in Harmony will connect to existing and planned trail systems where possible, including regional trails. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Provide bicycle and pedestrian trails along major home-to-work, home-to-school and other travel routes, where appropriate.	Harmony’s trail network will provide additional recreational opportunities for bicyclists, hikers, and equestrians. Various types of trails offer a wide range of experiences, from hiking/trekking equestrian trails in the natural areas to paved multi-use trails in urban areas. To that end, the Specific Plan proposes a network of roads, pedestrian paths, and multi-use trails will connect commercial centers to residential neighborhoods, recreational facilities, and open spaces. In addition, the Specific Plan states that trails in Harmony will connect to existing and planned trail systems where possible. Therefore, the Project is consistent with this policy.	Consistent
Policy 5	Where possible, designate and design new trail development near transit routes or heavily traveled areas.	The Project contains an integrated system of pedestrian pathways and bikeways which allow people to access the Project's neighborhood commercial center, which provides basic retail goods and services such as drug stores, dry cleaners, and gas stations. Pedestrian accessibility is provided via a system of green streets that incorporate pathways adjacent to swales, natural drainage, and distinctive landscaping. Bicycle access is provided via a system of on-street and off-street bicycle trails and lanes. Additionally, the Project site is located within the Omnitrans service area. The Project's specific plan includes two designated bus locations for Omnitrans bus stops, which are designed to promote transit ridership to and from the Project. The bus stops are strategically located and planned to be incorporated within an extensive network of bike trails and	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		pedestrian walkways connecting core commercial areas with residential, schools, parks, and open space. Reduced auto trips will result from the inclusion of these alternate modes of travel.	
Goal 5.13	Ensure the maximum safety and enjoyment of all trail system users.		
Policy 2	Access should be provided to the maximum extent feasible to trail users of all abilities and all ages.	See response to Goal 5.12 Policy 2 above.	Consistent
Policy 4	<p>Implement two general levels of trail use:</p> <ul style="list-style-type: none"> • Low Use and Natural Area: Standards shall apply to sections of the trail where terrain, remoteness, expected low usage, easement, or other restrictions make larger, multiple trails infeasible. • Urban (Maximum Accessibility): Standards define a relative flat, wide trail for use where little physical challenge is required and where wheelchair access can be accomplished. The grades are low, and the trail is wide and compacted or surfaced. 	See response to Goal 5.12 Policy 2 above.	Consistent
Policy 8	Incorporate, where feasible and without compromising safety, all compatible multiple uses on a single trail.	See response to Goal 5.12 Policy 2 above.	Consistent
Policy 9	Where a single trail is not feasible or there is heavy use, provide alternate or parallel routes and/or design separate, dual trails.	Harmony’s Master Plan of Parks, Trails, and Open Space, (Specific Plan Exhibit 9-8) identifies sidewalk paths, multipurpose trails, and a hiking, trekking, and equestrian trail. Therefore the Project is consistent with this policy.	Consistent
Policy 10	Allow ample space in right-of-way for safe passage of users, for signing, fencing, separation of trails, trailheads	See response to Goal 5.12, Policy 2 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	and where appropriate, landscaping.		
Policy 12	Along narrow equestrian/hiking trails (less than 6 feet wide) with steep side slopes (greater than 30 percent), provide passing areas at regular intervals to allow hikers and other equestrians to pass.	See response to Goal 5.12 Policy 2 above.	Consistent
Policy 13	Inform all trail users of the system’s etiquette requirements through trailhead signs.	Harmony’s Master Plan of Parks, Trails, and Open Space, (Specific Plan Exhibit 9-8) identifies conceptual locations for staging areas/trailheads and interpretative stations. These locales provide opportunities for signage regarding the trail use and etiquette. Therefore the Project is consistent with this policy.	Consistent
Goal 5.14	Maintain and enhance the trail system’s clear and informative signage.		
Policy 1	Continue to use consistent and established sign styles and other symbols, for the trails system.	Any proposed signs will be reviewed by the City during the Highland design review process for their consistency with the Master Sign Program guidelines, and the Harmony Specific Plan as a whole. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	To the extent possible, develop signs that use easily identifiable symbols, natural materials and colors, and vandal-resistant construction.	See response to Goal 5.14, Policy 1 above.	Consistent
Policy 3	Place signs in clearly visible areas such as at access points, trail heads, rest facilities and road crossings.	See response to Goal 5.14, Policy 1 above.	Consistent
Policy 4	Use positive rather than negative language, emphasizing permitted activities rather than extensive “No!” signing, where appropriate.	See response to Goal 5.14, Policy 1 above.	Consistent
Policy 5	Relate the number of signs to trail usage. More signage is appropriate in urban or high-use areas rather than natural	See response to Goal 5.14, Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	or low-use areas.		
Policy 6	<p>Develop a highly informative sign program incorporating such information as:</p> <ul style="list-style-type: none"> • Destinations and mileage indicators along the trail route; • Connections to other trails and community facilities; • Areas where access is hazardous or restricted; • Areas in which dogs or other animals are not allowed; • Educational exhibits and informational displays; • Delineation of private property adjacent to trails; • Habitat restoration along or near trails; • Recognition of areas dedicated to or sponsored by an organization or individual; • Vista points, pullouts, or rest stops; • Etiquette or permitted and non-permitted uses; and • Speed limits for bicyclists and equestrians. 	See response to Goal 5.14, Policy 1 above.	Consistent
Goal 5.15	Develop a multi-faceted program of trail maintenance with public and private participation.		
Policy 4	Locate trailheads in areas of high visibility and access.	Harmony’s Master Plan of Parks, Trails, and Open Space, (Specific Plan Exhibit 9-8) identifies conceptual locations for staging areas/trailheads that are accessible from area streets/ Therefore the Project is consistent with this policy.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 5.17	Encourage site design practices that reduce and conserve energy use.		
Policy 1	Encourage energy and environmentally sustainable designs— such as “Green Development standards”—in the design and approval of new projects.	In 2011 the City adopted CALGreen as its own municipal green building code. The Specific Plan pursuant to CALGreen standards and with sustainable principles in mind to reduce potential impacts. One of the goals of the Harmony Specific Plan is to incorporate sustainable features into all aspects of the community. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Orient buildings on the site to maximize the natural ventilation provided by prevailing breezes.	Development within Project is focused on integrating principles and best practices of sustainability and green design, including orienting buildings on the site to maximize the natural ventilation provided by prevailing breezes. In 2011, the City of Highland adopted the 2010 California Green Building Standards Code (CALGreen) as its own municipal green building code. CALGreen is California’s first green building standards code and a first-in-the nation state-mandated green building code. The purpose of CALGreen is to improve public health, safety and general welfare through design enhancement, through construction of buildings that either reduce negative impacts or have positive environmental impacts, and by encouraging sustainable construction practices. Mandatory measures are identified within each of CALGreen’s five divisions to ensure that all projects meet minimum green building thresholds. In addition to the mandatory measures, the Code includes two voluntary packages of above-minimum green practices, referred to as Tiers 1 and 2, for projects aiming to exceed minimal thresholds. The Project has developed a comprehensive list of sustainable design strategies for residential and nonresidential development within the Specific Plan area. In addition to implementing all of CALGreen’s residential and nonresidential mandatory measures (2010), Harmony has identified	Consistent

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		specific strategies from the two tier packages to be implemented that exceed the minimum standards in the community. Moreover, Harmony goes beyond the measures outlined in CALGreen (2010) and includes some sustainable best practices from exemplary communities that are applicable to Harmony. These strategies are largely focused on neighborhood design, site planning, and infrastructure and are complementary to the CALGreen measures. Taken together, the application of these strategies demonstrates Harmony’s commitment to creating a long-lasting sustainable and environmentally responsible community for generations. Tables 10.1 and 10.2 of the Specific Plan summarize these strategies. Therefore, the Project is consistent with this policy.	
Policy 3	Incorporate passive solar design techniques including building orientation, energy-saving materials, roof overhangs, and window and door placement.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 4	Increase minimum building insulation standards.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 5	Encourage landscape design that cools buildings and blocks solar rays, such as the planting of deciduous trees on south and west facing elevations, and give Title 24 credit for landscaping.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 6	Channel runoff to permeable surfaces through the design of roofs and rain gutter systems and drainage courses.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 8	Distribute and participate in incentive programs for incorporation of solar and photovoltaic panels (active solar) into existing or new buildings.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 12	Encourage a grey water recycling plan.	Recycled (non-potable) water will be supplied to the Harmony Specific Plan by EVWD by a wastewater treatment plant within the	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		Project limits. Currently there are no recycled water facilities within the EVWD service area. An on-site sewage treatment plant will produce recycled water for use within Harmony.	
Goal 5.19	Continue to support air quality planning through land use policies, outreach efforts and coordination with regional air quality agencies.		
Policy 3	Encourage land use planning and urban design that reduces vehicle trips through mixed and multi-use development, consolidation of commercial development along major arterials, provision of pedestrian connections from residential to retail areas, and development of a multi-use Town Center.	The land use plan was designed as being oriented to pedestrian activities, with connectivity provided within the community through a comprehensive network of green streets, sidewalk paths, and multipurpose trails, which will reduce vehicle trips. Therefore, the Project is consistent with this policy.	Consistent
Policy 10	Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands to the maximum extent practical through dust suppression, street cleaning and other practices.	As discussed in Section 5.3 Air Quality, the Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. Therefore, the Project is consistent with this policy.	Consistent
Policy 13	Continue comprehensive efforts to reduce energy consumption.	The Project includes a design feature of constructing more energy efficient buildings (residential and non-residential) by exceeding the 2008 Title 24 standards in part 6 of the building code by 35 percent. Therefore, the Project is consistent with this policy.	Consistent
Public Health and Safety Element			
Goal 6.1	Minimize the risk to public health and safety and disruption to social, economic, and environmental welfare resulting from seismic and geologic activities.		
Policy 1	Ensure that all new development, including facilities required for the provision of emergency services following a seismic or geologic event, adhere to proper construction design criteria.	Development of the proposed Project would be required to comply with all applicable City codes and regulations regarding construction design criteria, including the California Building Code. Therefore, the Project is consistent with this policy.	Consistent

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Policy 2	Enforce the requirements of the Alquist-Priolo Earthquake Fault Zoning Act and require the preparation of reports pursuant to the Act as part of the development review process for all new projects.	Section 5.6, Geology and Soils discusses the potential for geological and seismic hazards to occur in or around the Harmony Specific Plan area. Issues of concern include rupture of a known earthquake fault; strong seismic ground shaking; seismic related ground failure, including liquefaction; landslides; soil erosion; and, suitability of soils for development. Potential impacts related to expansive soils and unstable soils for septic tanks were also analyzed. A <i>Preliminary Geotechnical Investigation Report</i> and <i>Fault Investigation Report</i> were prepared for the Project and are discussed in the section. All potential impacts and proposed mitigation are provided to ensure all impacts are less than significant. Therefore, the Project is consistent with this policy.	Consistent
Policy 4	Continue to evaluate all new development within the Alquist-Priolo Earthquake Fault Zone.	See response to Goal 6.1, Policy 2 above.	Consistent
Policy 5	Continue to evaluate the compatibility of critical, essential, high occupancy, and normal to low risk uses in areas of potential liquefaction during the review of all discretionary and ministerial actions.	See response to Goal 6.1, Policy 2 above.	Consistent
Policy 9	Continue to enforce as part of the development review process site-specific analysis of soils and other conditions related to the onsite impact of maximum credible seismic and geologic events.	See response to Goal 6.1, Policy 2 above.	Consistent
Goal 6.2	Protect people and property from hazards related to slope instability.		
Policy 1	Continue to enforce hillside development guidelines for proposed development within or nearby slope instability areas of the City.	See response to Goal 6.1, Policy 2 above.	Consistent
Policy 2	Require appropriate structural design measures for	See response to Goal 6.1, Policy 2 above.	Consistent

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level	
	proposed development within hillside or steep slope areas.		
Goal 6.3	Reduce the risk to life and minimize physical injury, property damage, and public health hazards from the effects of a 100-year storm or 500-year storm and associated flooding.		
Policy 1	Review all proposed development to ensure that structures designed for human occupancy are accessible in the event of a 100-year storm and are protected from the 100-year storm to a point one foot above the floodplain.	Section 5.9 Hydrology discusses impacts within flood hazard areas. Approximately 68 acres in the southern boundary of the Project site is located within FEMA Zone A (100-year floodplain) designation along Mill Creek. As a part of the Project any proposed residential or commercial land use that is within the Zone A flood plain will be required to be graded and elevated so that they are removed from the flood plain. Therefore, the Project is consistent with this policy.	Consistent
Policy 2	Continue to evaluate the compatibility of critical, essential, high occupancy, and normal to low risk uses in areas within the 100-year floodplain during the review of all discretionary and ministerial actions.	See response to Goal 6.3, Policy 1 above.	Consistent
Policy 3	Require a drainage study be completed by a qualified engineer prior to all proposed development to certify that the proposed development will be adequately protected and that implementation of the development will not create new downstream flood hazards.	The Project will comply with the policy through preparation of the <i>Hydrology and Sedimentation Technical Study</i> (included as Appendix I.1 of this DEIR), the Master Drainage Plan (MDP) required by mitigation measure MM HYD 1 , and the detailed hydrology analysis required by MM HYD 2 , and the CLOMR required by mitigation measure MM HYD 3 . Therefore the Project is consistent with this policy.	Consistent
Policy 4	Require all development in the City and its sphere of influence comply with discharge permit requirements established by the Regional Water Quality Control Board.	Development of the proposed Project would be required to comply with the discharge permit requirements established under the National Pollutant Discharge Elimination System municipal separate storm sewer system MS4 permit, which is enforced by the City of Highland Engineering Department and the Santa Ana Regional Water Quality Control Board. Refer to Section 5.9 Hydrology, for a detailed	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		analysis of the proposed Project’s consistency and compliance with the discharge permit requirements. Therefore, the Project is consistent with this policy.	
Policy 5	Encourage proposed development to balance or enhance the natural landscape features of a site in order to reduce the amount of impervious surfaces built within the City.	Part of the Landscape Design Guidelines of the Specific Plan recommend the use of drought tolerant plants, mulch, installation of drip irrigation systems, minimizing of impervious areas, and the designing of landscaped areas as shallow swales to retain irrigation water is encouraged, where feasible, to reduce water use. Therefore, the Project is consistent with this policy.	Consistent
Policy 7	Utilize flood control methods that are consistent with Regional Water Quality Control Board Policies and Best Management Practices(BMPs).	See Response to Goal 6.3, Policy 4 above.	Consistent
Goal 6.4	Protect life and property from the potential short- and long-term risks of transporting, storing, treating, and disposing of hazardous materials and wastes in the City.		
Policy 1	Ensure compliance with current federal, state, and local regulations governing hazardous materials transport, storage, treatment, and disposal by working with appropriate agencies.	Section 5.8 Hazards and Hazardous Materials describes compliance with existing laws and regulations. Therefore the Project is consistent with this policy.	Consistent
Policy 2	Require that new facilities involved in the production, use, storage, transport or disposal of hazardous materials locate a safe distance from land uses that may be adversely impacted by such activities. Conversely, do not allow new sensitive facilities, such as schools, child-care centers, and senior centers, to be located near existing sites that use, store or generate hazardous materials.	Section 5.8 Hazards and Hazardous Materials describes that the Project will not include land uses which result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. In addition, the proposed schools are not within quarter mile of such facilities. Therefore the Project is consistent with this policy.	Consistent

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Goal 6.5	Protect life and property from wildland–urban interface fires.		
Policy 1	Review the vulnerability of new development in areas with the potential for wildland-urban interface fires and incorporate appropriate mitigation measures in the conditions of approval.	<p>Section 5.8 Hazards and Hazardous Materials describes potential fire risks. One of the Goals of the Harmony Specific Plan is to develop a land use plan responding to the unique environmental conditions of the area. Fire hazards were considered during the land use planning process. The Project site is located on the wildland-urban interface, an area with unique fire protection needs. Fuel modification zones—landscape areas that reduce the threat of fire through vegetation and maintenance—are required in Harmony and are called Fire Modification Zones. The Specific Plan requires a 200-foot Fire Modification Zone on the northwest, north, northeast, and east perimeter exposures, as well as any slopes with a grade of 10 percent or more, and a 150-foot zone on the west, southwest, south, and southeast perimeter exposures and any slopes in those areas with a grade of 10 percent or more. The first 100 feet of a fuel modification area must be irrigated, and plantings must be selected from the master plant palette fuel modification list.</p> <p>A Conceptual Fire Protection Plan was prepared for the Project, which identifies the locations of required Fire Protection Zones and Fuel Modification Zones, and will ensure that detailed fuel modification zone location plans, landscape plans, and vegetation management plans will be submitted to the Fire Marshal for approval prior to construction; thus, demonstrating compliance with the Conceptual Fire Protection Plan and with all applicable Fire Department and Building Safety Requirements. Therefore, the Project is consistent with this policy.</p>	Consistent
Policy 2	Ensure the adequate protection of proposed and existing development in areas subject to wildland-urban interface	See response to Goal 6.5, Policy 1 above.	Consistent

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	fires and balance the need for fire prevention measures with the need to preserve significant biological resources.	
Policy 3	<p>In areas designated as Fire Hazard Zone I and Fire Hazard Zone II, and as set forth in the Municipal Code, continue to incorporate additional fire safety standards, such as:</p> <ul style="list-style-type: none"> • Secondary or alternative access for all new development in a fire safety review area; • Increased setbacks from fuel modification areas and fire hazard areas; • Perimeter roads adjacent to development; or <p>Maintained fuel modification zones.</p>	Consistent.
Policy 7	Enforce the Fire Sprinkler ordinance for all newly constructed buildings.	Consistent
Policy 8	Require all development to meet the emergency water service standards established by the East Valley Water District.	Consistent
Policy 9	Encourage the use of fire proof construction materials.	Consistent
Goal 6.8	Reduce mobile and stationary source air pollutant emissions through cooperation and endorsement of the San Bernardino Regional Air Quality Plan and support of feasible techniques, incentives, and regulatory measures to achieve significant air quality improvements and any necessary air quality related lifestyle and economic changes while sustaining continued economic growth.	
Policy 10	Reduce vehicle emissions by supporting the design and implementation of the Citywide system of bikeways and pedestrian trails as a non-polluting circulation alternative by requiring as part of the development review process the installation of planned bicycle routes, paths, and lanes	Consistent

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	<p>where designated; and the construction of necessary bicycle parking and storage areas within convenient commercial, employment and recreation activity areas.</p>	<p>network of sidewalks and multi-use trails planned for Harmony provides bicycle and pedestrian connectivity to all areas within the community and between Harmony and surrounding parks, recreational trails, open space, and activity centers. Therefore the Project is consistent with this policy.</p>	
<p>Policy 11</p>	<p>Reduce the number of vehicles driven to work by requiring as part of the development review process that preferential parking be included in parking lot designs to high occupancy vehicles, vanpools, and shuttle services, if applicable.</p>	<p>The Project is not an employment project, however the Project site is located within the Omnitrans service area. The Project's specific plan includes two designated bus locations for Omnitrans bus stops, which are designed to promote transit ridership to and from the Project. The bus stops are strategically located and planned to be incorporated within an extensive network of bike trails and pedestrian walkways connecting core commercial areas with residential, schools, parks, and open space. Reduced auto trips will result from the inclusion of these alternate modes of travel.</p> <p>The Project will provide residents with information about public transit when they move into the Project, through the Homeowners Association. Additionally, educational materials about public transit and advantages of ride sharing will be distributed in the Project's community center. Therefore the Project is consistent with this policy.</p>	<p>Consistent</p>
<p>Policy 12</p>	<p>Continue to encourage the integration of air quality planning with land use and transportation planning in the design, review, and development processes by:</p> <ul style="list-style-type: none"> • Ensuring that site designs facilitate rather than discourage pedestrian movement between commercial development and residential or office uses (e.g., locate buildings adjacent to the street with parking behind such that pedestrians need 	<p>According to Section 5.3 Air Quality, the Project includes the following design features, which are designed to reduce the Project's air quality emissions and are incorporated into the Project's emissions analysis:</p> <ul style="list-style-type: none"> • The Project will include a system of bikeways integrated into the design of the community to encourage bicycle travel as an alternative to automobile; 	<p>Consistent</p>

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level
<p>not walk through parking lots to reach their destination; provide clear pedestrian paths and connections, etc.).</p> <ul style="list-style-type: none"> Supporting the mixed use overlay in the zoning ordinance as a means to enhance pedestrian movement throughout the City. Providing for increased intensity of development in designated locations along existing and proposed transit corridors. Supporting location and operational standards in the development code for ancillary employee services, including but not limited to child care, restaurants, banking facilities, convenience markets, at major employment centers for the purpose of reducing midday vehicle trips. Continuing to develop interconnected traffic signal control system in all new projects, roadway improvements. Move forward with programs to retrofit existing signals on all streets where traffic volume and delay time is significant. Enforcing parking lot design guidelines that encourage reciprocal parking designs and/or agreements between adjacent developments, provide for the consolidation of driveways along major commercial corridors such as Base Line, and require parking areas be efficiently designed so as to minimize internal circulation conflicts. 	<ul style="list-style-type: none"> The Project will include a system of pedestrian access integrated into the design of the community to encourage pedestrian travel as an alternative to automobile; The Project will include traffic calming features, such as - roundabouts, chokers, etc. into the design of the community to further encourage non-automobile travel; The Project includes a mix of residential and non-residential land uses; The total number of dwelling units with fireplaces will not exceed 57.8 percent of all dwelling units. Residential and non-residential building will be 35 percent more efficient than the 2008 Title 24 part 6 building code. Where appliances are offered by homebuilders, Energy Star appliances will be installed in the residences; The Project will incorporate third party HVAC commissioning for all residential and non-residential land uses; and The Project will include radiant (white) roofs for residential land uses. <p>Specifically, the Specific Plan will implement sustainable design strategies that will reduce emissions and improve air quality, which are as follows (HSP, p. 1-8):</p> <ul style="list-style-type: none"> Equip residential development with appropriate wiring for Internet access for residents to shop and work online, reducing vehicle trips. 	

Applicable City of Highland General Plan Goals and Policies	Relationship of the Project to the Policy	Consistency Level
<ul style="list-style-type: none"> Integrating, where appropriate and feasible, traffic improvements (e.g., dedicated turn lanes and pockets, bus turnouts and shelters, restripe traffic lands for optimal traffic flow) into capital improvement projects that improve the efficiency of transportation systems. Continuing to ensure that all new development applications include an air quality improvement summary per SCAQMD and SCAG Air Quality Handbook Guidelines, which describe the general methods used in development design to reduce air emissions. 	<ul style="list-style-type: none"> Sustainable development practices consistent with the 2010 California Green Building Code standards, which incorporates several sustainable features including building-level sustainability practices related to indoor/outdoor air quality. Reduced automobile trips through the construction of alternative modes of travel including an extensive network of biking trails and walkways connecting residential areas, schools, parks, open space, and commercial services, reducing reliance on the automobile for access to these facilities. <p>Therefore the Project is consistent with this policy.</p>	
<p>Policy 13</p> <p>Regulate the location and design of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions to air pollution, and continue to support site plans that separate and/or buffer residential and sensitive receptors from freeways, arterials, point sources, and hazardous material locations.</p>	<p>The proposed Project includes development of residences, schools, parks, and limited commercial uses on vacant land. The Project site is approximately 6 miles east of the I-210 freeway, 4.5 miles north of the I-10 freeway and there are no adjacent hazardous material locations. Therefore the Project is consistent with this policy.</p> <p>Therefore the Project is consistent with this policy.</p>	<p>Consistent</p>
<p>Policy 14</p> <p>Reduce particulate emissions from construction sites, grading activities, temporary roads and parking lots, and agricultural operations by enforcing requirements that minimize fugitive dust.</p>	<p>An air quality analysis/modeling was prepared for this Project and is discussed in Section 5.3 Air Quality. Mitigation measures derived from the air quality analysis, including measures for the suppression of fugitive dust, are incorporated within the section. Therefore the Project is consistent with this policy.</p>	<p>Consistent</p>

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Noise Element			
Goal 7.1	Protect sensitive land uses and the citizens of Highland from annoying and excessive noise through diligent planning and regulation.		
Policy 1	Enforce the City’s Noise Control Ordinance consistent with health and quality of life goals and employ effective techniques of noise abatement through such means as a noise ordinance, building codes and subdivision and zoning regulations.	Section 5.12 Noise includes a discussion of the Noise Impact Analysis, which evaluated the potential noise impacts of the Project and has proposed mitigation measures for those impacts. The report examined short-term and long-term impacts from on-site and adjacent noise-sensitive uses. Therefore the Project is consistent with this policy.	Consistent
Policy 2	Encourage the use of site planning and architectural techniques such as alternative building orientation and walls combined with landscaping to mitigate noise to levels consistent with interior and exterior noise standards.	See response to Goal 7.1, Policy 1 above.	Consistent
Policy 3	Require mitigation where sensitive uses are to be placed along transportation routes to ensure compliance with interior and exterior noise standards.	See response to Goal 7.1, Policy 1 above.	Consistent
Policy 4	Consider the compatibility of proposed land uses with the noise environment when preparing, revising or reviewing development proposals.	See response to Goal 7.1, Policy 1 above.	Consistent
Policy 5	Prevent the siting of sensitive uses in areas in excess of established 65 dBA CNEL without appropriate mitigation. Special attention should be paid to potential development within the 65 dBA CNEL noise contour of the San Bernardino International Airport and mining operations of the Santa Ana River.	The Project is not within the San Bernardino International Airport Future Noise Contours. Additionally, the Project would not site sensitive uses near any mining operations. Therefore the Project is consistent with this policy.	Consistent
Policy 7	Require that site-specific noise studies be conducted by a	As discussed in Section 5.12 Noise, prior to approval of final design	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	qualified acoustic consultant utilizing acceptable methodologies while reviewing the development of sensitive land uses or development that has the potential to impact sensitive land uses. Also require a site-specific noise study if the proposed development could potentially violate the noise provisions of the General Plan or City ordinance.	plans for individual developments within the Harmony Specific Plan, a Final Noise Impact Analysis shall be prepared for each development based on precise grading plans and architectural plans that will allow for detailed noise modeling. Therefore the Project is consistent with this policy.	
Goal 7.2	Encourage the reduction of noise from transportation-related noise sources such as automobile and truck traffic.		
Policy 2	Employ noise mitigation practices, as necessary, when designing future streets and highways, and when improvements occur along existing road segments. Mitigation measures should emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.	Section 5.12 Noise analyzes impacts of noise from construction and operation of the Project and identifies mitigation measures to address these potential impacts. Therefore the Project is consistent with this policy.	Consistent
Policy 3	Require that development generating increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses provide appropriate mitigation measures.	See response to Goal 7.2, Policy 3 above.	Consistent
Policy 5	Encourage the development of alternative transportation modes such as bicycle paths and pedestrian walkways to minimize the number of automobile trips and noise.	The Project’s circulation plan reinforces the goal of creating a pedestrian friendly environment. Reducing reliance on the automobile as a primary means of travel throughout the Specific Plan is a fundamental objective of the circulation plan. Therefore the Project is consistent with this policy.	Consistent
Goal 7.3	Protect residents from the effects of “spill over” or nuisance noise.		
Policy 3	Require that construction activities employ feasible and practical techniques to minimize noise impacts on adjacent uses. Particular emphasis shall be placed on the restriction	See response to Goal 7.1, Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	of hours in which work other than emergency work may occur.		
Policy 4	Require that the hours of truck deliveries to commercial properties abutting residential uses be limited unless there is no feasible alternative or there are overriding transportation benefits by scheduling deliveries at another hour.	See response to Goal 7.1, Policy 1 above.	Consistent
Policy 5	Ensure that buildings are constructed to prevent adverse noise transmission between differing uses located in the same structure and individual residences in multi-family buildings.	See response to Goal 7.1, Policy 1 above.	Consistent
Economic Development Element			
Goal 9.1	Maintain a balance of land uses that generates consistent and sufficient revenue for public services now and in the future.		
Policy 5	Promote a mix of housing types and range of prices necessary to provide a diverse labor force.	A goal of the Project will be to provide diverse housing types and opportunities for a variety of lifestyles and economic segments; therefore the Project is consistent with this policy.	Consistent
Community Design Element			
Goal 10.5	Encourage the development of attractive, vibrant and convenient commercial centers through careful application of design policies and development standards.		
Policy 1	Design highly visible entrances to retail activity centers through accent landscaping and lighting, enhanced intersection features, monument signs and other design amenities.	A specific plan provides unique standards tailored to a specific site and a specific vision. One of the Harmony Specific Plan's goals is to create a strong community identity. The Specific Plan establishes unique development standards and design guidelines to ensure the aesthetic quality and appropriate scale of future Neighborhood Commercial development. The standards and guidelines created for commercial development in Harmony are intended to facilitate	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		architectural compatibility between a variety of buildings and tenants. The guidelines are comprehensive, covering building orientation, visible edges, mechanical and functional equipment, massing and articulation, building entries, pedestrian access, architectural detailing, material and color use, landscaping, signage, bus shelters, walls and fences, and lighting. These and other standards for Harmony will create an aesthetically pleasing community identity with a distinct “sense of place” and internal community connectivity. Neighborhood Commercial uses are planned to provide convenient access for residents, thus becoming hubs of neighborhood activity. Therefore, the Project is consistent with this policy.	
Policy 2	Design commercial centers with a unifying design theme, but add visual interest through rich architectural detailing, varied massing and rooflines, and accent lighting and landscaping.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 3	Locate buildings and building frontages close to the street and street corners with parking behind or to the side of the buildings. Where this is not possible or practical, ensure that street-facing parking is shielded through landscaping or berms.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 4	Provide ample landscaping for internal parking areas using landscaped bays and overstory shade trees.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 5	Clearly delineate pedestrian routes from parking areas to retail uses to allow easy and safe pedestrian movement.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 6	Encourage pedestrian-scale features such as shaded sitting areas, fountains, arcades, canopies and/or awnings,	See response to Goal 10.5, Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	customized signage and strategically located secondary entrances.		
Policy 7	Provide people-gathering places and amenities such as miniplazas, courtyards, benches, outdoor eating areas, specialized landscaping, accent lighting, public art, shade, trash receptacles and water fountains.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 8	Link newly developed retail activity centers, where practical, to surrounding residential or office uses through clear and safe pedestrian and bicycle connections.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 9	Encourage internal access between adjacent properties in order to minimize curb cuts along major thoroughfares.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 10	Provide walls when necessary for security and/or privacy from adjoining residential uses. When walls are necessary, pedestrian breaks should be provided for access to commercial uses.	See response to Goal 10.5, Policy 1 above.	Consistent
Policy 11	Encourage creative wall design to avoid a blank appearance and utilize landscape buffers as an alternative to walls to facilitate pedestrian linkages to commercial areas.	See response to Goal 10.5 Policy 1 above.	Consistent
Goal 10.6	Continue to support air quality planning through land use policies, outreach efforts and coordination with regional air quality agencies.		
Policy 1	Incorporate landscaped parkways, consistently spaced street trees, continuous sidewalks and pedestrian-scale streetlights, wherever possible.	The Specific Plan includes Design and Landscape Design Guidelines. The location of Harmony provides a key opportunity to connect the rich heritage of Highland’s past with its future, providing a strong framework for compatibility between new and existing development, and enabling the City of Highland to realize its overall	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
		General Plan vision. The design guidelines have been prepared to ensure that this vision is achieved and implemented throughout the Project site. This is achieved by providing planning, architectural, and landscape design criteria for the land uses and facilities within Harmony which will promote a quality development and an aesthetically pleasing living environment, while promoting environmental stewardship. Therefore the Project is consistent with this policy.	
Policy 2	Require new and infill development to be of compatible scale, materials and massing relative to existing development.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 3	Encourage a variety of architectural styles, massing, floor plans, façade treatment and elevations to create visual interest along the street.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 4	Encourage street facing architecture by placing entries and porches at the front of the residence and connecting them to the sidewalk by a pathway.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 5	Encourage a blend of compatible architectural styles that contain rich façade detailing, varied rooflines and quality materials incorporated on all four sides of the residence.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 6	Site garages back from the street and minimize street frontage devoted to driveways and vehicular access.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 7	Consider small lot developments with rear allies that position the garage and driveway to the back of the site to avoid garage-dominated streetscapes.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 8	Maintain, improve and/or develop parkways with canopy	See response to Goal 10.6, Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	street trees, providing shade, beauty and a unifying element to residential streets.		
Policy 9	Encourage maximum landscape coverage of the front yard area as defined by the front setback.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 10	Where desirable, encourage traffic-calming measures such as the actual or visual narrowing of streets through widened parkways, canopy trees and neck-down curbs at intersections.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 11	Design front-yard fencing that is low-scale, partially transparent and of compatible color, style and materials as the primary residence. Long and solid fences and walls are discouraged unless placed along the side or rear yards.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 12	In areas of small lot development, incorporate design features that connect it with adjoining areas such as consistent setbacks, building height and pedestrian connections.	See response to Goal 10.6, Policy 1 above.	Consistent
Policy 13	Establish design and development standards for entire single-family developments from the start—remain consistent with enforcing requirements and standards.	See response to Goal 10.6, Policy 1 above.	Consistent
Goal 10.10	Guide the development of a variety of attractive, engaging and convenient public spaces, including plazas, pedestrian areas and recreational open space.		
Policy 1	Design plazas with: <ul style="list-style-type: none"> • Ample seating space; • A central focal point or amenity of interest such as public art or fountain; 	The Specific Plan proposes several opportunities for public gathering spaces, primarily oriented around recreation. A network of roads, pedestrian paths, and multi-use trails will connect commercial centers to residential neighborhoods, recreational facilities, and open spaces. Potential attractive, engaging, and convenient public	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
	<ul style="list-style-type: none"> Proximity to and visibility to and from the street; Combinations of sun and shade; All age groups in mind; and Public space framed by surrounding buildings. 	<p>spaces include shopping center plazas, enhanced entries, courtyards, picnic areas, or even a farmer’s market at the agriculture park (PA66). These types of spaces serve all segments of the population, from young to old, and create opportunities for social interaction.</p> <p>Public gathering spaces, whether in the Neighborhood Commercial area, residential neighborhoods, or at recreational facilities, foster a greater sense of community and therefore pride in living in Harmony and the City of Highland. Therefore the Project is consistent with this policy.</p>	
Policy 2	Locate plazas in areas of high visibility such as near streets or along sidewalks or pedestrian paths.	See response to Goal 10.10, Policy 1 above.	Consistent
Policy 3	In areas of heavy pedestrian use, provide wide sidewalks that allow room for window shopping, pedestrian passage, outdoor dining and landscape buffers.	See response to Goal 10.10, Policy 1 above.	Consistent
Policy 4	Incorporate civic, regional or vernacular design elements such as historical markers and educational exhibits, where appropriate.	See response to Goal 10.10, Policy 1 above.	Consistent
Policy 5	Incorporate pedestrian scaled, distinctive lighting fixtures in community facilities and other public places with occasional or frequent evening use.	See response to Goal 10.10, Policy 1 above.	Consistent
Policy 6	Design recreational amenities and parks with all age groups in mind and incorporate architectural and landscape elements consistent with City or regional design themes.	See response to Goal 10.10, Policy 1 above.	Consistent
Policy 7	Incorporate small sitting areas and/or shaded courtyards close to shopping areas but buffered from parking and traffic impacts.	See response to Goal 10.10, Policy 1 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Goal 10.11	Promote attractive, appropriately scaled and well-coordinated signs.		
Policy 2	For commercial centers along arterial corridors, encourage monument signs that are clearly visible, identify key uses and reflect the design theme of the development.	A Master Sign Program, approved by the City of Highland, has been developed as part of the Project. All proposed signs will need to be consistent to the sign program and reviewed by the City. Therefore the Project is consistent with this policy.	Consistent
Policy 3	Within commercial centers, use complementary, yet distinctive, sign styles.	See response to Goal 10.11, Policy 2 above.	Consistent
Policy 4	Within commercial centers, encourage high quality signage, including wall signs, raised letter signs, projecting double-faced signs and customized logos, which complement the architecture of the building or center of which it is a part.	See response to Goal 10.11, Policy 2 above.	Consistent
Policy 5	Discourage signs that incorporate blinking or flashing elements, pole structures, roof signs or the use of temporary lettering or structures.	See response to Goal 10.11, Policy 2 above.	Consistent
Goal 10.12	Encourage development that is energy efficient and environmentally sustainable.		
Policy 1	Encourage landscaping practices that increase energy efficiency and conserve natural resources such as:	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 2	Planting trees and incorporating landscaped berms to provide shade and wind buffering	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 3	Using native and drought-tolerant landscaping (“xeriscaping”) and drip irrigation to conserve water resources.	See response to Goal 5.17, Policy 2 above.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 4	Encourage designs that channel runoff to permeable surfaces.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 5	Encourage transit-oriented, infill development to make efficient use of existing land.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 6	Encourage site planning and building orientation that maximizes solar and wind resources for cooling and heating.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 7	Encourage the use of ecologically sound building materials such as those made of recycled content and contain low amounts of volatile organic compounds (VOCs).	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 8	During construction, require developers and builders to protect topsoil in order to reduce dust and runoff impacts.	See response to Goal 5.17, Policy 2 above.	Consistent
Policy 9	Encourage local recycling and composting initiatives at the neighborhood level.	See response to Goal 5.17, Policy 2 above.	Consistent
Goal 10.13	Appropriately buffer the boundaries between differing land uses and provide transitions where necessary.		
Policy 1	Encourage the use of landscaped walls or fences that buffer residential areas from commercial uses to allow privacy and noise absorption.	As described in the Specific Plan, open space areas will be established to adequately serve as buffers and transition spaces that separate different uses and enhance visual character. In addition, buffer areas are proposed to physically separate land uses from one another and to shield noise, light and other possible nuisances. Therefore the Project is consistent with this policy.	Consistent
Policy 2	Reduce the visual impact of freestanding walls by varying their alignment, adding landscaping and/or berms, incorporating decorative surface detailing and choosing materials similar to adjacent residential uses.	The Specific Plan Design Guidelines encourage enhancements to walls including siding, and accents. In addition, there will be an integration of elevation style with vertical and/or horizontal stagger which will limit the bulk of the building elevations.	Consistent

Applicable City of Highland General Plan Goals and Policies		Relationship of the Project to the Policy	Consistency Level
Policy 4	Link newly developed commercial centers, where practical, to adjoining residential uses.	The proposed trail system is designed to link the planned community to the City of Highland, the natural forest and other adjacent land uses. Therefore the Project is consistent with this policy.	Consistent
Policy 5	Encourage transitions that define boundaries but that also preserve a sense of openness and connectivity. For example, perimeter subdivision walls can contain occasional breaks to provide access to open space and adjoining areas.	See response to Goal 10.13, Policy 1 above.	Consistent
Policy 7	Encourage use of landscaped trellises and accent landscaping at development entries rather than walls or structures.	The Specific Plan’s Landscape Design Guidelines include a section on neighborhood entries and monumentation, guiding development of entry points to include enhanced accents, changes in height and texture, and landscaping. Therefore the Project is consistent with this policy.	Consistent

As reflected above, the proposed Harmony Specific Plan is consistent with all the applicable Land Use Policies of the General Plan. Therefore, impacts from the Project would be **less than significant**.

Threshold: *Would the proposed Project conflict with any applicable habitat conservation plan or natural community conservation plan?*

Potential conflicts with any applicable habitat conservation plan or natural community conservation plan are addressed in Section 5.4 (Biological Resources) of this document. Impacts are considered **less than significant and no mitigation is required in this regard**.

5.10.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Less than significant environmental impacts to land use and planning are anticipated to result from implementation of the Project and thus no mitigation measures are required.

5.10.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The Project does not result in any significant impact to land use and planning, and no mitigation is required.

5.10.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

As discussed in Section 7.1.12, the proposed Project's contribution to land use and planning impacts is not cumulatively considerable. Therefore, cumulative impacts are **less than significant**.

5.10.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- | | |
|---------|---|
| GP | City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed on August 17, 2012.) |
| HSP | City of Highland, <i>Harmony Draft Specific Plan</i> , March 2014. (Available at the City of Highland.) |
| HMC | City of Highland, Highland Municipal Code, current through August 13, 2013. (Available at http://www.codepublishing.com/ca/highland/ , accessed October 21, 2013.) |
| RBF (a) | RBF Consulting, <i>Hydrology and Sedimentation Technical Study</i> , Harmony Specific Plan, City of Highland, San Bernardino County California, December 2013. (Appendix I.1) |

5.11 Mineral Resources

This section evaluates the Project's impacts related to the loss of availability of known mineral resources.

The following discussion of potential impacts to mineral resources is based on the *County of San Bernardino Mining Reclamation Plan (93M-02), April 27, 1993* and *Evaluation of Mineral Resources* prepared by Converse Consultants (Converse) on November 30, 2011 and included as Appendix J.1 and Appendix J.2 of this DEIR.

5.11.1 Setting

A mineral is a naturally occurring solid that has a definite chemical composition and that forms crystals. According to the General Plan EIR, minable minerals or an "ore deposit" is defined as 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 (GP EIR, p. 5.10-1).

Overall, the City due to its large washes and stream channels contains regionally significant construction aggregate and mineral resources. The primary minerals found in the area are iron, decorative rocks, clay, limestone, sand and gravel (GP, p.5.27).

5.11.1.1 Mineral Resource Classifications

The California Geological Survey Mineral Resources Project provides information about California's non-fuel mineral resources. The Mineral Resources Project classifies lands throughout the State that contain regionally significant mineral resources as mandated by the Surface Mining and Reclamation Act (SMARA) of 1975. Non-fuel 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. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the SMARA which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

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 (MRZs), Scientific Resource Zones (SZ), or Identified Resource Areas (IRAs), described below.

- **MRZ-1:** A Mineral Resource Zone where adequate information indicates that no significant mineral deposits are present or likely to be present.

- **MRZ-2:** A Mineral Resource Zone where adequate information indicates that significant mineral deposits are present, or a likelihood of their presence and development should be controlled.
- **MRZ-3:** A Mineral Resource Zone where the significance of mineral deposits cannot be determined from the available data.
- **MRZ-4:** A Mineral Resource Zone where there is insufficient data to assign any other MRZ designation.
- **SZ Areas:** Containing unique or rare occurrences of rocks, minerals or fossils that are of outstanding scientific significance shall be classified in this zone.
- **IRA Areas:** County or State Division of Mines and Geology Identified Areas where adequate production and information indicates that significant minerals are present (GP EIR, p. 5.10-1).

5.11.1.2 Existing Conditions

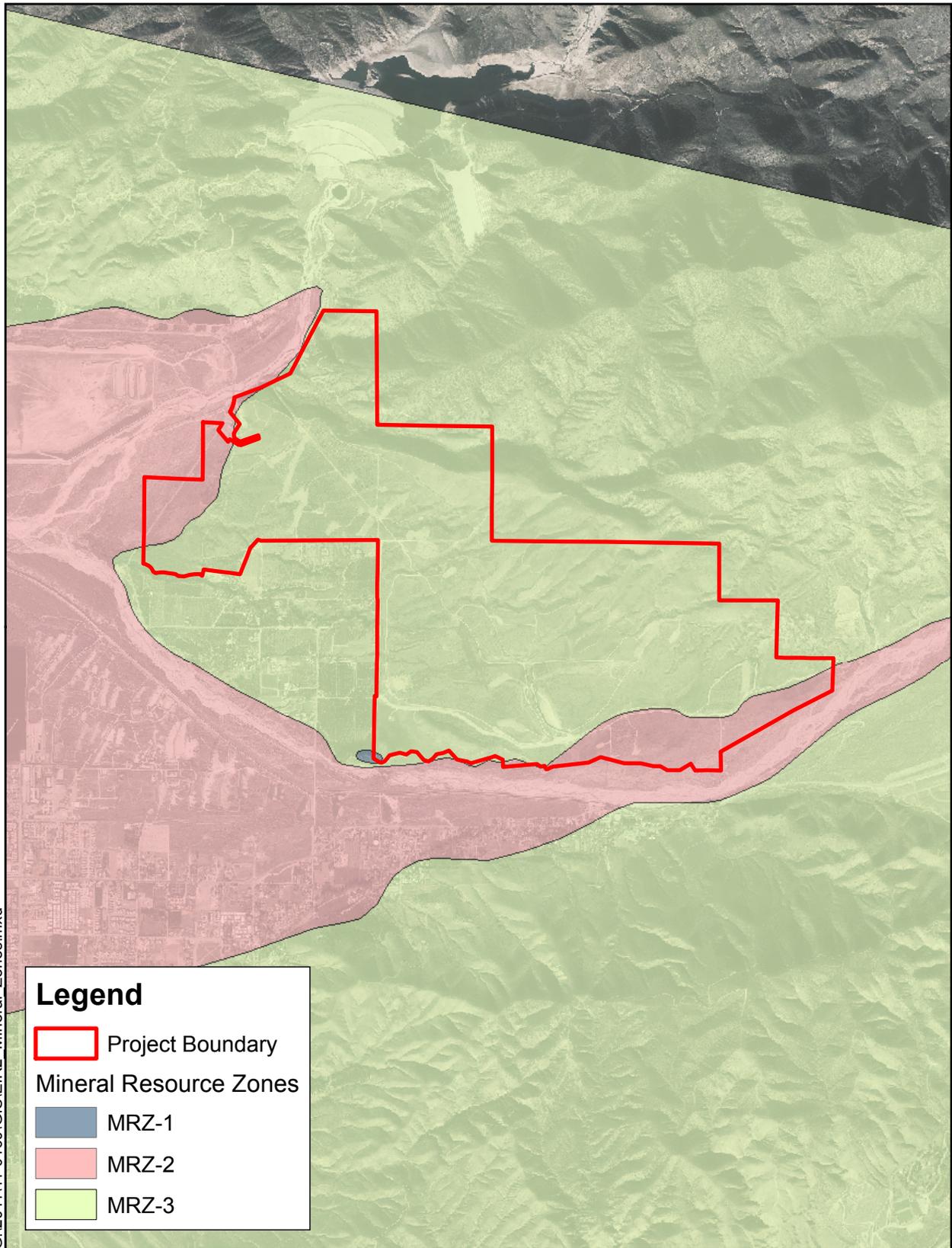
The City of Highland is located in the San Bernardino Production-Consumption (P-C) Region of the Greater Los Angeles Sand and Gravel Resource Area. This P-C region covers approximately 1,098 square miles and includes the large urbanizing portions of southwestern San Bernardino County and northwestern Riverside County. It approximately covers an area from Fontana on the west to Cabazon on the east, Devore on the north and Lake Elsinore and Hemet on the south. The most prominent geographic features 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. The drainages and alluvial fans are important sources of aggregate (sand and gravel) resources (GP EIR, p 5.10-2).

As shown in **Figure 5.11.1 – Mineral Resource Zones**, more than half of the City is underlain by MRZ-2 rated mineral resources, which means that significant mineral deposits are likely. The remaining portions of the City are underlain by MRZ-3 rated mineral resources, meaning that significant mineral resources cannot be determined from available data. In addition, approximately 189 acres of the Project site is classified as MRZ-2, meaning that significant mineral deposits are likely and approximately 1,464 acres is classified as MRZ-3, meaning that significant mineral deposits cannot be determined from available data.

According to the *Evaluation of Mineral Resources* prepared by Converse Consultants on November 30, 2011, (included as Appendix J.2), a large majority of the Project site is underlain by older alluvium. Bedrock is not present near the surface. The older alluvium underlying most of the Project site consists primarily of clayey sand and silty sand and it is unlikely that significant deposits of high quality clay or sand are present. The older alluvium contains localized deposits of gravel, cobbles and boulders; however these clasts are significantly weathered. The highly weathered and partially decomposed rocks in the older alluvium are not generally suitable for use as construction aggregate due to their low hardness and durability. The Evaluation of Mineral Resources notes that the Santa Ana River channel and the Mill Creek Channel both contain large amounts of sand, gravel, cobbles, and boulders. The rocks

in these areas are potentially suitable for use as construction aggregate or for decorative purposes. However, both creek channels are generally located along the west and south borders of the Project site and outside of the potential development area of the Project.

G:\2011\11-0160\GIS\EIR2 Mineral_Zones.mxd



Legend

-  Project Boundary
- Mineral Resource Zones**
-  MRZ-1
-  MRZ-2
-  MRZ-3

Sources: San Bernardino Co. GIS, 2008;
San Bernardino County ISD, 2012

Figure 5.11-1 – Mineral Resource Zones
Harmony Specific Plan Draft EIR



5.11.1.3 Historical Mining Operations of the Project site

The Project site was acquired by the local sponsors of the Santa Ana River Project (Orange County Flood Control District, San Bernardino County Flood Control District, and Riverside Flood Control and Water Conservation Districts) in 1993 to provide impervious materials for the Seven Oaks Dam Project. To that end, in 1993 a Mining and Land Reclamation Plan (93M-02) was approved by the San Bernardino County Transportation and Flood Control Department. The Mining and Land Reclamation Plan (93M-02) identified the operations of two borrow sites occurring on or near the Project site: the Santa Ana Wash borrow site and the Mill Creek borrow site. The Mill Creek borrow site is within the Project boundaries and the Santa Ana Wash borrow site is located west of the Project site. The location of the borrow site within the Project site is shown on **Figure 5.11-2 – Borrow Site Location**

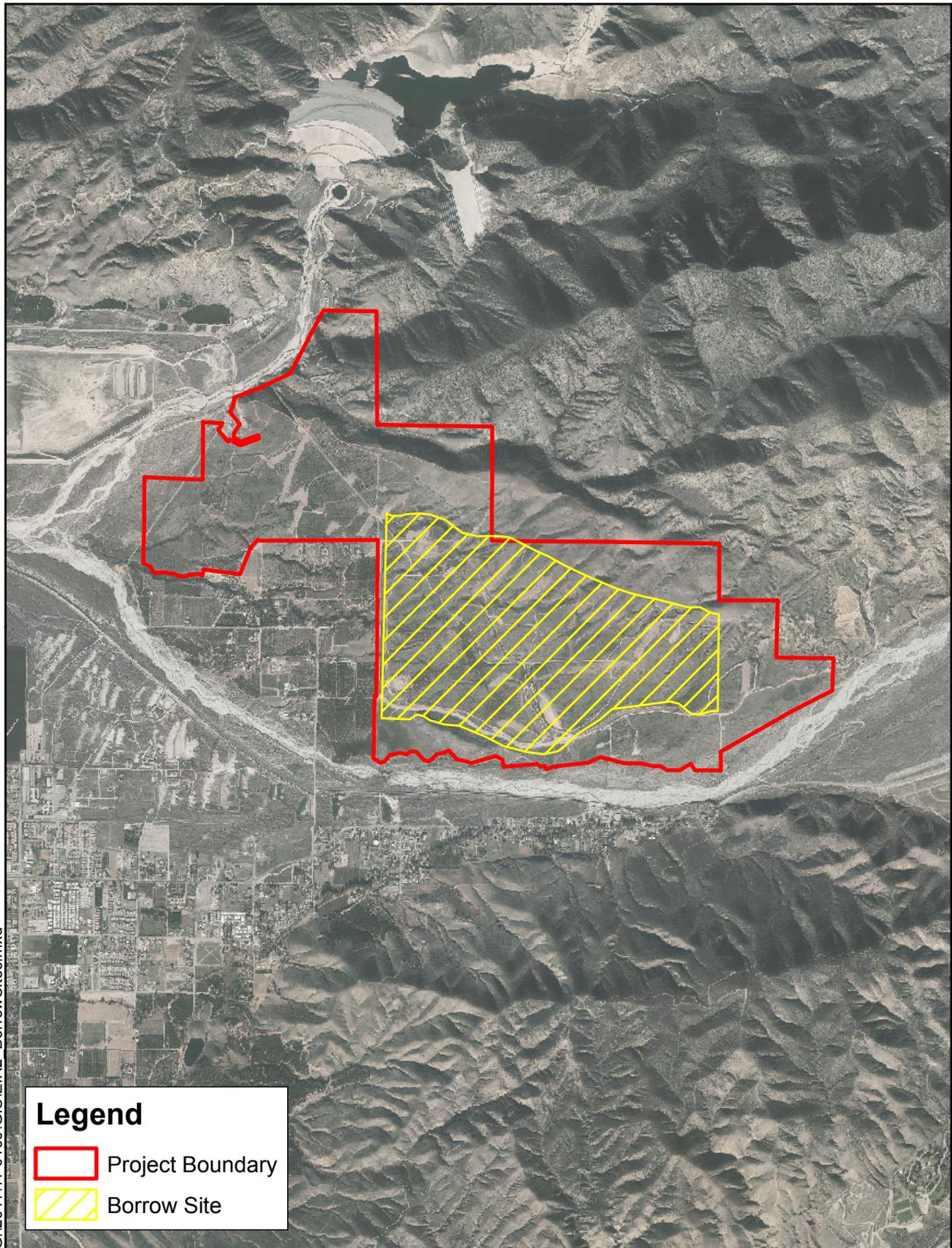
Approved operations of the Mill Creek borrow site consisted of excavating sand, gravel and clay material and transporting it in off-road haul trucks to the dam site via a three mile haul road. The material was extracted up to a depth of 40 feet using similar methods as those used in the Santa Ana Wash borrow site. Excavation was approved for only a five year period, beginning in 1993, with an estimated annual production of 2,000,000 cubic yards. Pursuant to the approved Mining and Land Reclamation Plan (93M-02), operations have ceased, and the need for mineral extraction onsite is no longer warranted as construction of the dam has already been completed (SBCTFCD, p.2).

Construction of the 550-foot high Seven Oaks Dam began in May of 1994 and was completed in November of 1999. Approximately six million cubic yards of material was removed or “scraped” from the Project site and hauled to the Seven Oaks Dam site via a conveyor system (The Planning Center, p.1-4).

5.11.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to mineral resources may be considered potentially significant if the Project would:

- 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; or
- 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.



G:\2011\11-0160\GIS\IEIR2 BorrowSites.mxd

Legend

- Project Boundary
- Borrow Site

Sources: VCS Environmental, June 2013;
San Bernardino County ISD, 2012

Figure 5.11-2 – Borrow Site Location
Harmony Specific Plan Draft EIR

0 1,500 3,000 4,500 6,000
Feet



5.11.3 Related Regulations

5.11.3.1 Federal

There are no federal policies or mandates related to mineral resources.

5.11.3.2 State

Surface and Mining and Reclamation Act

California's Surface Mining and Reclamation Act (SMARA) of 1975 declares mineral extraction as essential to the state to meet the needs of society and for continued economic welfare. SMARA 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

California's Mineral Resources and Mineral Hazards Mapping Program (MRMHMP) provides data about nonfuel mineral resources, naturally occurring mineral hazards (such as asbestos, radon, and mercury), and historic 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.

5.11.3.3 Local

City of Highland General Plan

The City of Highland adopted its General Plan in March 2006. The Conservation and Open Space Element and Land Use Element contain policies pertaining to mineral resources.

Conservation and Open Space Element

Goals and polices related to managing the City's mineral resources and extraction policies for short- and long-term safety, and economic and land use compatibility include:

- **Goal 5.9** Manage mineral resources and extraction policies for short and long term safety, economic and land use compatibility considerations.
 - **Policy 5.9.1:** Identify any significant mineral resources within the City and, as feasible, protect them from encroachment by residential or other incompatible development, for future use.
 - **Policy 5.9.2:** Adopt policies and procedures for mining and processing of mineral resources.
 - **Policy 5.9.3:** Develop criteria for location and operation of mineral processing to minimize adverse impacts to the environment, watersheds, wildlife, aesthetic resources, public health and safety, and adjacent land uses.
 - **Policy 5.9.4:** Establish and implement Mining Reclamation Plans for any proposed mining operations in compliance with existing local, state and federal policies and statutes. Review

- land development proposals near resource areas or mining operations for land use compatibility.
- **Policy 5.9.5:** Require that mining plans include, but not be limited to, the following:
 - Effects on terrain, natural and man-made slopes, permeability of soil, groundwater quality;
 - Protection of water quality through erosion, run-off and sedimentation control;
 - Protection of wildlife;
 - Control of noise, dust, vibration, smoke, odors, and lighting;
 - Plans for rehabilitation and reclamation of lands; and
 - Proposed timing of extraction and reclamation activities.
 - Offsite routes of travel.
 - **Policy 5.9.6:** Investigate the adoption of a reclamation fee program designed to mitigate remaining scars from previous quarry operations.
 - **Policy 5.9.7:** Pursue and implement a joint-powers agreement with adjacent cities and involved agencies for the management of natural resources located in the Santa Ana River Wash.
 - **Policy 5.9.8:** Permit non-mining uses within the designated Open Space District only if a finding is made that no significant impacts on future regional mineral resources will result from project approval.

Land Use Element

Land use goals and policies that recognize the value of mineral resources and encourage the preservation of natural resources and open space include:

- **Goal 2.7** Encourage natural resource and open space preservation through appropriate land use policies that recognize their value and through the conservation of areas required for the protection of public health and safety.
 - Policy 2.7.3: Permit new mineral extraction areas and expansion of existing operations only where the following findings can be made:
 - Potential significant impacts related to loss of significant biological resources have been mitigated to an acceptable level, as have potential significant impacts of noise, air pollutant emissions, dust, and hazardous materials;
 - Significant impacts will not be created on lands used or planned for residential use;
 - Public health and safety will be protected;

- Haul routes have been identified, and will be utilized, which will not create significant impacts within residential areas, and which will not negatively impact access into commercial/industrial areas;
 - The municipal revenue-generating characteristics of the proposed operation are such that a positive fiscal benefit will accrue to the City of Highland and to its residents; and
 - The analysis of fiscal benefits shall account for the incremental capital and maintenance costs for the area circulation system created by the high intensity of truck use associated with the operation.
- **Policy 2.7.4:** Preserve areas designated as Open Space to provide for recreation, preservation of scenic and environmental values, managed production of resources (agriculture, water reclamation and conservation, mineral extraction), and protection of public safety.

5.11.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts to mineral resources through the design of the Project. There are no Project design features related to mineral resources.

5.11.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

As shown in **Figure 5.11.1**, approximately 189 acres of the Project site is classified as MRZ-2, meaning that significant mineral deposits are likely and approximately 1,464 acres is classified as MRZ-3, meaning that significant mineral deposits cannot be determined from available data.

As discussed earlier, the Project site was previously used a borrow site to build the Seven Oaks Dam. Construction of the 550-foot high Seven Oaks Dam began in May of 1994 and was completed in November of 1999. Approximately six million cubic yards of material was removed or “scraped” from the Project site and hauled to the Seven Oaks Dam site via a conveyor system (The Planning Center p.1-4). Pursuant to the approved Mining and Land Reclamation Plan (93M-02), mining operations were only approved for a five year period, beginning in 1993. Therefore, mining operations onsite have ceased, and the need for mineral extraction onsite is not warranted as construction of the Seven Oaks Dam has already been completed.

The Project site is not currently used for mineral mining, and future extraction of the area is unlikely, as the area is designated in the General Plan as PD (Planned Development). The General Plan Land Use Element envisions the entire Project site as a “one-of-a-kind, high quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities.” Thus, future mining operations are not envisioned for the Project site in the City General Plan.

In November, 2011 Converse Consultants conducted an evaluation of the mineral resources potentially present on the Project site (Appendix J.2). The investigation concluded that a majority of the Project site is underlain by older alluvium. Bedrock is not present near the surface. Therefore, it is unlikely that iron or limestone resources, which are associated with bedrock formations, are present at depths that will be disturbed during development. The older alluvium underlying most of the Project site consists primarily of clayey sand and silty sand. It is also unlikely that significant deposits of high quality clay or sand are present. The evaluation does note however that the Santa Ana River channel and the Mill Creek Channel both contain large amounts of sand, gravel, cobbles, and boulders. The rocks in these areas are potentially suitable for use as construction aggregate or for decorative purposes. However these areas are generally outside of the proposed development area and it is not anticipated that the associated mineral resources would be impacted by the Project. The Evaluation of Mineral Resources prepared by Converse Consultants concludes that it is unlikely that significant quantities of economically valuable mineral resources are present within the potential development area of the Project site. Therefore, implementation of the Project would not 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 and **impacts will be less than significant.**

***Threshold:** Would the proposed Project 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.*

As shown in **Figure 5.11.1**, approximately 189 acres of the Project site is located within a MRZ-2 area, while approximately 1,464 acres of the subject property is within a MRZ-3 area. The Project site was previously used as a borrow site to build the Seven Oaks Dam. Construction of the 550-foot high Seven Oaks Dam began in May of 1994 and was completed in November of 1999. Approximately six million cubic yards of material was removed or “scraped” from the Project site and hauled to the Seven Oaks Dam site via a conveyor system.

The Project site is not currently used for mineral mining, and future extraction of the area is unlikely, as the area is designated in the General Plan as PD (Planned Development). The General Plan Land Use Element envisions the entire Project site as a “one-of-a-kind, high quality, master-planned estate community in the Seven Oaks area that incorporates substantial scenic, open space, recreation and trail amenities.” Thus, future mining operations are not envisioned for the Project site in the City General Plan. Furthermore, the City General Plan does not identify any locally important mineral resource recovery sites within the Project site. Therefore, the development of the Project, consistent with General Plan land use designations, will not result in the loss of availability of a locally important mineral resource recovery site. Potential impacts related to the loss of availability of a locally important mineral resource recovery site are considered **less than significant.**

5.11.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). There are no impacts related to mineral resources resulting from implementation of the Project and thus no mitigation measures are required.

5.11.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

There are no environmental impacts to mineral resources that are anticipated from implementation of the Project and no mitigation measures are required.

5.11.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The geographic scope for mineral resources is the state. Since a portion of the Project site was previously mined for the construction of the Seven Oaks Dam and it was determined that it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site, implementation of the proposed Project will not contribute to a cumulative loss of known or locally important mineral resources. Therefore, impacts are not cumulatively considerable or significant.

5.11.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- | | |
|-----------------|---|
| Converse | Converse Consultants, <i>Evaluation of Mineral Resources-Greenspot Property, City of Highland, San Bernardino County, California, Converse Project No. 10-81-214-01</i> , November 30, 2011 (Appendix J.2). |
| GP | City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed September 8, 2012.) |
| GP EIR | City of Highland, <i>General Plan Update Draft EIR</i> , September 2005. (Available at the City of Highland.) |
| Planning Center | The Planning Center, <i>Greenspot Property Development Feasibility Analysis</i> , February 2008. (Available at the City of Highland.) |
| SBCTFCD | San Bernardino County Transportation/Flood Control Department, <i>Mill Creek Impervious Borrow Site, Mineral Reclamation Plan (93M-02)</i> April 8, 1993 (Appendix J.1) |

5.12 Noise

This section evaluates the Project's impacts from temporary and permanent increase in noise as well as groundborne vibration.

The following section is based on the *Noise Impact Analysis, Harmony, City of Highland, California* prepared by LSA Associates, March 2014 (cited as LSA), and included as Appendix K to this DEIR.

5.12.1 Setting

This section presents a discussion of noise fundamentals applicable to the Project, together with an assessment of existing ambient noise levels and noise sources in the Project vicinity.

5.12.1.1 Characteristics of Sound

Noise is most often defined as unwanted sound. Although sound can be easily measured with instruments, the perceptibility is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound in subjective terms such as "noisy" or "loud." To the human ear, sound has two significant characteristics: pitch and loudness (LSA, p. 1). Pitch is generally an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment, and is determined in combination with the reception characteristics of the human ear (LSA, pp. 1, 4). The analysis of a project's noise impact defines the noise environment of that project area in terms of sound intensity and its effect on adjacent land uses and receivers.

5.12.1.2 Quantification of Sound

Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which defines the level of sound in decibels (dB). Because human hearing is not equally sensitive to sound at all frequencies, the A-weighting system is used to adjust quantified or measured sound levels to approximate this frequency-dependent response. An A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's (LSA, p. 4). Sound measured in A-weighted decibels is expressed as dBA. Additionally, as decibels are measured on a logarithmic scale representing points on a sharply rising curve, doubling the energy of a noise source increases the noise level by 3 dBA and halving the energy results in a 3 dBA decrease (LSA, p. 4). For example, an increase of 10 dBA represents a 10-fold increase in sound intensity; a 20 dBA change is a 100-fold difference; and 30 dBA change is a 1,000-fold difference, etc. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately six decibels for each doubling of distance from the source (e.g. 25 feet to 50 feet). This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source,¹ such as highway traffic or railroad operations, the sound decreases

¹ A source of noise spread out into a line, such as approximated by the combined traffic on a roadway.

three decibels for each doubling of distance in a hard site environment.² Line source noise, when produced within a relatively flat environment with absorptive vegetation, decreases four and one-half decibels for each doubling of distance. (LSA, p. 4)

Duration of the noise is also an aspect that must be considered along with a noise's pitch and loudness. As a result, it is difficult to describe noise with a single unit of measure. An appropriate rating of ambient noise affecting humans also accounts for the annoyance effects of sound (LSA, p. 4). Federal and state agencies have established noise and land use compatibility guidelines that use averaging methods to noise measurement. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period (LSA, p. 4). Two measurement scales commonly used in California are the Community Noise Equivalent Level (CNEL) and the day-night level (DNL or L_{dn}) based on A-weighted decibels. CNEL is the time-varying noise over 24-hour period, which to account for increased human sensitivity at night, the scale includes a 5 dBA weighting penalty applied to the hourly L_{eq} for noises occurring during 7:00 p.m. and 10:00 p.m. time period, and a 10 dBA weighting penalty applied to the hourly L_{eq} for noises occurring during 10:00 p.m. to 7:00 a.m. (LSA, p. 4). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable (LSA, p. 4). The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the peak or maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated period and reflects acoustical peaks and the annoying aspects of intermittent noise (LSA, p. 4). The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts.

Noise analysis methodology is accurate only to the nearest whole decibel and most people only notice a change in the noise environment when the difference in noise levels is greater than 3 dBA. However, it is widely accepted that the average healthy human ear can barely perceive changes of 3 dBA and that a change of 5 dBA is readily perceptible. Changes in noise levels between 1 and 3 dBA is potentially audible, but this range has been found to be noticeable only in laboratory environments (LSA, p. 5). Also, changes in noise levels less than 1 dBA is inaudible to the human ear (LSA, p. 5).

5.12.1.3 Psychological 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 the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell 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

² Hard site is a term used for reflective characteristics of the ground surface between a noise source and receivers where the ground does not absorb sound energy and reflects back most of the energy (e.g. paved surfaces or hard-packed soils). Alternatively, soft sites refer to types of ground, such as normal earth and most grounds with vegetation that are absorptive to sound energy.

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 and loss of equilibrium.

The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas. (LSA, p. 5) Noise can be particularly problematic when noise-sensitive land uses are affected. Noise-sensitive land uses are defined as uses where one would typically find activities that are interrupted by noise, such as residential uses, schools, hospitals, churches, performing arts facilities, and hotels and motels. The following table shows common sound levels and their noise sources.

Table 5.12-A – Common Sound Levels and their Noise Sources

Noise Source	Sound Level (dBA)	Noise Environments	Subjective Evaluations
Near jet engine	140	Deafening	128 times as loud
Civil defense siren	130	Threshold of pain	64 times as loud
Hard rock band	120	Threshold of feeling	32 times as loud
Accelerating motorcycle at a few feet away	110	Very Loud	16 times as loud
Pile driver; noisy urban street/heavy city traffic	100	Very Loud	8 times as loud
Ambulance siren; food blender	95	Very Loud	
Garbage disposal	90	Very Loud	4 times as loud
Freight cars; living room music	85	Loud	
Pneumatic drill; vacuum cleaner	80	Loud	2 times as loud
Busy restaurant	75	Moderately loud	
Near freeway auto traffic	70	Moderately loud	Reference level
Average office	60	Quiet	1/2 as loud
Suburban street	55	Quiet	
Light traffic; soft radio music in apartment	50	Quiet	1/4 as loud
Large transformer	45	Quiet	
Average residence without stereo playing	40	Faint	1/8 as loud
Soft whisper	30	Faint	
Rustling leaves	20	Very faint	
Human breathing	10	Very faint	Threshold of hearing

Source: LSA, p. 7, Table B.

5.12.1.4 Ground-borne Vibration

Ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment.

Vibration is an oscillatory motion which can be described in terms of the displacement, velocity, or acceleration. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed.

Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. Most transducers used for measuring ground-borne vibration use either velocity or acceleration. Furthermore, the response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration. The effects of ground-borne vibration include “feelable” movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The rumble is the noise radiated from the motion of the room surfaces. In essence, the room surfaces act like a giant loudspeaker causing what is called ground-borne noise. In extreme cases, the vibration can cause damage to buildings.

There are several different methods used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is typically measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the squared amplitude of the signal. The PPV and RMS velocity are normally described in inches per second in the United States and meters per second in the rest of the world. Although it is not universally accepted, decibel notation (VdB) is in common use for vibration.

Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore, usually confined to short distances (i.e., 500 feet or less) from the source. Sensitive receptors for vibration include structures (especially older masonry structures); people (especially residents, the elderly, and the sick) and vibration sensitive equipment.

5.12.1.5 Airport and Aircraft Noise

There are no public airports and private airstrips in the City. The nearest airports are San Bernardino International Airport (SBIA) located in the city of San Bernardino approximately 6.1 miles away, and Redlands Municipal Airport (RMA) located in the city of Redlands (Google Maps), approximately 1.6 miles away. SBIA is located in the southeastern portion of the city of San Bernardino, adjacent to the western boundary of the City. RMA is located in the northeastern portion of the city of Redlands, south of the City across the Santa Ana River. Airport noise generated from large aircraft contributes to the noise environment within the City. Noise from aircraft is produced from takeoff, flyovers/overflights, and approaches/landings. Each of these events results in noise exposure to populations living in proximity to the airport.

SBIA is operated under a Joint Powers Authority with the Inland Valley Development Agency (IVDA) and San Bernardino International Airport Authority (SBIAA). Currently, IVDA and SBIAA are in the process of preparing the Airport Master Plan and the Comprehensive Land Use Plan (GP EIR, p. 5.11-19). As a consequence, the airport noise contours are not yet available. RMA is operated by the city of Redlands and generally serves small single-engine airplanes, thus, its associated noise contours do not enter or otherwise affect the City (RGP, Figure 9.1). Although, a small portion of the City’s south-central area is within RMA’s Area of Special Compatibility Concern and a small portion of the City’s southeastern area is within RMA’s Airport Influence Area; the Project site is not within any airport influence areas and is not subject to any airport land use plans (GP, Figure 6-7). Noise impacts from RMA to these areas are regulated by the City Municipal Code (GP EIR, p. 5.11-32).

In addition to aircraft noise from SBIA or RMA, local helicopter air traffic occurs within the City. News and other helicopters (e.g., freeway traffic report helicopters) fly through the area. Helicopter use for fire and police and at hospitals is considered as an emergency activity and is addressed by Federal Aviation Administration regulations. The noise exposure generated by helicopter activity varies dependant on flight path which is determined by wind direction and terrain. There are currently no heliports in the City; thus, intermittent flyovers by helicopters are not considered to be a substantial source of noise within the City. (GP EIR, p. 5.11-19)

5.12.1.6 Existing Site and Surrounding Conditions

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to noise. There are no noise-sensitive receptors existing on site. Off site, there are existing single-family residences to the south of the Project site along Tres Lagos Street and Sapphire Avenue, along Florida Street and Garnet Avenue, as well as single-family residences east of the Project site at the eastern terminus of Newport Avenue and along Redlands Heights Ranch Road (see **Figure 3-2 – Location Map**). The closest sensitive receptors are greater than 150 feet from the Project boundary (LSA, p. 13). These sensitive land uses would be potentially affected by the noise generated during construction and operation on site. (LSA, p. 9)

5.12.1.7 Existing Noise Levels

Overview of the Existing Noise Environment

The primary existing noise sources in the Project area is sourced from vehicular traffic (LSA, p. 9). Specifically, traffic on Greenspot Road, Garnet Avenue, Florida Street, and other local streets in the Project vicinity is the dominant source contributing to the ambient noise levels in the Project area. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. Noise levels on and in the vicinity of the Project site will change as a result of the proposed Project. Potential noise impacts associated with the Project include road noise due to increases in vehicular traffic and construction noise. (LSA, p. 9)

Existing Traffic Noise

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along roadways in the Project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Traffic volumes from the traffic study prepared for this Project, which is included in Appendix M, were used for the traffic noise analysis. **Table 5.12-B** lists the existing traffic noise levels on these roadways in the Project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between traffic and the locations where the noise contours are drawn. (LSA, p. 9)

Table 5.12-B – Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Baseline Rd. west of Boulder Ave.	21,100	62	124	264	68.6
Baseline Rd. between Boulder Ave. and Highland Ave./Weaver St.	8,800	< 50	72	149	64.8
Baseline Rd. east of Highland Ave./Weaver St.	2,300	< 50	< 50	65	59.0
Boulder Ave. north of Baseline Rd.	12,600	< 50	90	188	66.4
Boulder Ave. between Baseline Rd. and Greenspot Rd.	5,900	< 50	57	115	63.1
Orange St. between Greenspot Rd. and SR-38	10,700	< 50	< 50	87	62.9
Orange St. between SR-38 and Colton Ave.	10,800	< 50	< 50	87	62.9
Orange St. south of Colton Ave.	11,400	< 50	< 50	91	63.2
Highland Ave. north of Baseline Rd.	2,400	< 50	< 50	< 50	56.4
Weaver St. between Baseline Rd. and Water St.	2,900	< 50	< 50	< 50	57.2
Weaver St. between Water St. and Greenspot Rd.	3,900	< 50	< 50	< 50	58.5
5th St. west of Palm Ave.	10,300	< 50	< 50	85	62.7
5th St./Greenspot Rd. between Palm Ave. and Boulder Ave.	18,800	58	116	245	68.1
Greenspot Rd. between Boulder Ave. and Church St.	21,400	62	125	266	68.7
Greenspot Rd. between Church St. and Weaver St.	13,500	< 50	94	197	66.7
Greenspot Rd. between Weaver St. and Alta Vista	8,000	< 50	56	115	63.6
Greenspot Rd. between Alta Vista and New Greenspot Rd.	4,700	< 50	< 50	50	59.3
SR-38 west of Orange St.	11,100	< 50	83	173	65.8
SR-38 between Orange St. and Judson St.	12,900	< 50	91	191	66.5
SR-38 between Judson St. and Wabash St.	13,000	< 50	92	192	66.5
SR-38 between Wabash St. and Crafton Ave.	11,400	< 50	84	176	65.9
SR-38 between Crafton Ave. and Garnet Ave.	8,500	< 50	< 50	75	61.9

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
SR-38 between Garnet Ave. and Newport Ave.	7,900	< 50	< 50	71	61.6
SR-38 between Newport Ave. and Bryant St.	7,400	< 50	< 50	68	61.3
Bryant St. between SR-38 and Oak Glen Rd.	6,800	< 50	< 50	64	60.9
Bryant St. between Oak Glen Rd. and Yucaipa Blvd.	7,600	< 50	66	135	64.2
Bryant St. south of Yucaipa Blvd.	5,900	< 50	57	115	63.1
Yucaipa Blvd. west of 14th St.	7,800	< 50	67	138	64.3
Yucaipa Blvd. between 14th St. and Bryant St.	5,000	< 50	< 50	104	62.4
14th St south of Yucaipa Blvd.	15,300	< 50	51	110	64.4
Garnet Ave. between Newport Ave. and SR-38	3,200	< 50	< 50	< 50	57.6

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

Source: LSA, p. 10, Table D.

As shown, the existing traffic noise levels in the Project vicinity are moderate to high along roadway segments adjacent to the Project site, with the 70 dBA CNEL contour line extending to 62 feet from the roadway centerline along Baseline Road and the 70 dBA CNEL contour lines extending to 58 feet from the roadway centerline along Greenspot Road. Along 5th Street/Greenspot Road between Palm Avenue and Boulder Avenue, the 70 dBA CNEL contour extends to 56 feet from the roadway centerline. (LSA, p. 9)

5.12.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts from noise may be considered potentially significant if the Project would result in:

- 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;
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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; and/or
- 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.

5.12.3 Related Regulations

5.12.3.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting State and local abatement efforts; and
- Promoting noise education and research.

The federal Office of Noise Abatement and Control was initially tasked with implementing the Noise Control Act. However, the Office of Noise Abatement and Control has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The United States Department of Transportation assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration and FHWA. Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the local agency, in this instance the city of Highland, is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

The proposed Project will comply with the appropriate OSHA regulations relative to worker exposure to noise during Project construction and operation.

Vibration Standards

The United States Department of Transportation 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 structural 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, p. 7-3). This is because it takes time for the human body to respond to vibration signals. In a sense, the human body responds to an average vibration amplitude; thus, human perception of groundborne vibration is expressed as a vibration velocity level (L_v) which is expressed in terms of one micro-inch/second (VdB) (FTA 2006, p. 7-4)). **Table 5.12-C** 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 and equipment.

Table 5.12-C – Groundborne Vibration and Noise Impact Criteria – Human Annoyance

Land Use Category	Max L_v (VdB) ^a	Description
Workshop	90	Distinctly feelable vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Feelable vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely feelable vibration. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential – Nighttime	72	Vibration not feelable, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.

Notes

Source: FTA 2006, p. 8-8, Table 8-3.

^a As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.

The level at which groundborne vibration is strong enough to cause structural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown on **Table 5.12-D**. 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 5.12-D – Groundborne Vibration and Noise Impact Criteria – Structural Damage^a

Building Category	PPV (in/sec)	VdB ^b
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Notes

^a FTA 2006, p. 12-13, Table 12-3.

^b RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch/second

5.12.3.2 State Regulations

California Government Code

California Government Code Section 65302 mandates the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. The General Plan contains a noise element that ranks land use compatibility as required by the California Government Code. The City's General Plan Noise Element is discussed in Section 5.12.3.3, below.

5.12.3.3 Local Regulations

City of Highland General Plan

The City of Highland's Noise Element of its General Plan established land use compatibility guidelines and exterior and interior noise standards from vehicular traffic for the evaluation of compatibility between land uses in the City. However, the City has determined that the state recommended guidelines are to be used to determine the potential traffic noise impacts associated with the proposed Project (LSA, p. 11). The California Department of Public Health Office of Noise Control recommends that noise sensitive outdoor living areas exposed to exterior noise levels of 60 dBA CNEL or greater have an acoustical study conducted to confirm that the 45 dBA CNEL interior noise standard will be met. However, an exterior noise level of up to 65 dBA CNEL will be allowed, provided that exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA CNEL with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation. (LSA, p. 11)

City of Highland Municipal Code

The City Municipal Code, Chapter 15.48, Hours of Operation for Construction Activities, limits the hours of construction to one-half hour before sunrise and one-half hour after sunset Monday through Sunday. However, emergency construction activities performed either by or on behalf of the City shall be exempt from this requirement. Chapter 8.50, Noise Control, of the City's Municipal Code exempt construction activity and associated noise for construction, repair or excavation work performed pursuant to a valid written agreement with the city or any of its political subdivisions, which agreement provides for noise mitigation measures. (LSA, p. 11)

City Vibration Standards

The City does not have specific limits or thresholds for vibration. Instead, see the vibration standards enumerated in Section 5.12.3.1, above.

5.12.4 Project Design Features

Design features refer to ways in which the proposed Project will avoid or minimize potential impacts through the design of the Project. There are no specific design features regarding noise.

5.12.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project result in 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?*

Due to the duplicative nature of the analysis the discussion for this threshold is included with the analysis under the threshold *Would the proposed Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project?*

Threshold: *Would the proposed Project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Construction activities can generate varying degrees of groundborne vibration depending on the construction procedures and equipment used. Construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings near 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 levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Groundborne vibration from construction activities rarely reaches levels that can damage structures, but it can achieve the audible and perceptible ranges in buildings close to a construction site. (FTA, p. 12-10) Groundborne vibration will be generated by the Project during construction activities, primarily during grading and foundation phases. Unless there are extremely large generators of vibration, such as pile drivers, or receptors in proximity to construction equipment, vibration is generally only perceptible at structures when vibration rattles windows, picture frames, and other objects.

Construction of individual land uses per phase are anticipated to occur from 2015 (Phase 1) to 2023 (Phase 5). While the majority of heavy construction equipment will not be in operation directly at the property line, aforementioned single-family residences in the Project area will be exposed to construction-related vibration during phases nearest their property.

The nearest off-site vibration-sensitive uses from the Project site are the existing residences along Tres Lagos Street, Sapphire Avenue, and at the eastern terminus of Newport Avenue. One of the single-family residences along Sapphire Avenue abuts the Project site at Planning Area (PA) 60 where community greenway is proposed, and the habitable structure is approximately 150 feet from PA 3 where medium-density residential is proposed. The single-family residential structures along Tres Lagos Street are approximately 170 feet from the Project site at PA 60 where community greenway is proposed and approximately 500 feet from PA 7 and PA 11 where low-density residential is proposed. Moreover, the single-family residences near the eastern terminus of Newport Ave vary from 230 feet to 550 feet from the Project site at PA 70 where natural open space is proposed and construction is not necessary. One of these residences is approximately 475 feet from PA 42 where low-density residential is proposed. Refer to **Figure 3-2 – Location Map** and **Figure 3-8 – Proposed Land Use Plan**.

Various types of construction equipment have been measured under a wide variety of construction activities with an average of vibration levels reported in terms of velocity as shown on **Table 5.12-E – Vibration Source Levels for Construction Equipment**. Although the table gives one level for each piece

of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provide a reasonable estimate for a wide range of soil conditions.

Table 5.12-E – Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (inches/second)	VdB at 25 ft ^b
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: FTA 2006.

^b RMS velocity in decibels (VdB) re 1 micro-inch/second. A crest factor of 4, which represents a PPV to RMS difference of 12 VdB was applied to the PPV to determine the VdB.

Relative to impacts from groundborne vibration, the FTA has published guidance in their document titled *Transit Noise and Vibration Impact Assessment*. For the purpose of quantifying groundborne vibration in relation to the development of the Project, reference to this document is incorporated herein. According to the FTA, buildings can be exposed to groundborne vibration levels of 0.5 PPV without experiencing structural damage. Additionally, it has been determined that humans can experience vibration levels up to 80 VdB (RMS) before becoming annoyed by the vibration (FTA, p. 7-7). When vibration levels reach 85 VdB, most people become strongly annoyed by the vibration. (FTA, p. 7-6).

As stated, the nearest habitable structure is approximately 150 feet away from the nearest PA that will require construction potentially capable of producing vibratory impacts. As shown above on **Table 5.12-E**, use of heavy construction equipment (e.g., a large bulldozer) generates vibration levels of 0.089 PPV or 87 VdB at a distance of 25 feet. Because vibration levels dissipate rapidly over distance, vibration from a large bulldozer is not anticipated to not exceed the annoyance threshold of 80 VdB at the closest sensitive receptor, which is 150 feet away. Assuming the source of vibration is steady-state or continuous, vibration from a large bulldozer at the closest sensitive receptor is estimated to be 0.012 PPV,³ which is less than the potential building damage threshold of 0.5 PPV and equivalent to a level considered barely perceptible by humans⁴ (Jones & Stokes, p. 14). At 50 feet from a large bulldozer, the PPV is estimated to be 0.042,⁵ which is slightly higher than the level considered distinctly perceptible (0.035), and lower than the level considered distinctly perceptible (Jones and Stokes, p. 14).

Additionally, construction activity associated with the Project will comply with City Municipal Code, which restricts the hours that construction may occur within the City. Compliance with this regulatory

³ Estimated using the formula $PPV_{\text{Equipment}} = PPV_{\text{Ref}}(25/D)^n$ where $PPV_{\text{Ref}} = 0.089$; $D = 150$ feet (this distance to the nearest sensitive receptor); and $n = 1.1$. (Jones & Stokes, p. 26)

⁴ Steady State Vibration at 0.012 PPV is considered barely perceptible by humans; 0.035 PPV is considered distinctly perceptible by humans; and 0.10 PPV is considered distinctly perceptible by humans. (Jones & Stokes, p. 14)

⁵ Estimated using the formula $PPV_{\text{Equipment}} = PPV_{\text{Ref}}(25/D)^n$ where $PPV_{\text{Ref}} = 0.089$; $D = 50$ feet; and $n = 1.1$. (Jones & Stokes, p. 26)

requirement will further ensure potential vibratory impacts do not become substantial. Further, the proposed land uses of the Project are not associated with substantial vibration-generation uses, and operation-related vibratory impacts are not anticipated. Therefore, potential impacts upon persons or structures due to vibration will be **less than significant**.

Threshold: *Would the proposed Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project and/or would the proposed Project result in 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?*

Neither the State *CEQA Guidelines* nor the City has established criteria for what is considered to be a “substantial increase” in noise levels. As discussed above, the average healthy ear can barely perceive changes of 3 dBA, a change of 5 dBA is readily perceptible, and an increase (or decrease) of 10 dBA sounds twice (or half) as loud to the human ear. For the purposes of this analysis, a permanent increase in ambient noise of 3 dBA will be considered significant.

Traffic Noise

The proposed residential/commercial/community public facilities uses may be impacted by future traffic noise along major arterials in the Project area. In addition, existing residential uses may be impacted by large traffic noise level increases as a result of the proposed Project. Based on the daily traffic volumes projected in the Project’s Traffic Impact Analysis (see Section 5.16 – Transportation/Traffic in this DEIR), future traffic noise levels along roadway segments in the Project area have been calculated. It should be noted that except for the Existing with Project condition, all future conditions include traffic from cumulative projects that were provided by the various cities within the Project study area.

The traffic study prepared for the proposed Project analyzed two different scenarios: “Without a Newport Avenue/SR-38 Connection” and “With a Newport Avenue/SR-38 Connection.” The Without a Newport Avenue/SR 38 Connection scenario was analyzed for the Project Phase 1 through Phase 5 and the 2035 Buildout Year conditions. The With a Newport Avenue/SR-38 connection scenario assumes the connection would be built by the end of Phase 4; therefore this scenario was only analyzed for Project Phase 4, Phase 5, and the 2035 Buildout Year conditions.

Traffic Noise Impacts to Off-Site Land Uses

The increases in CNEL at 50 feet from the centerline of the outermost lane resulting from Project-related traffic for each of the roadway segments analyzed for each condition and scenario are summarized in **Table 5.12-F - Increase in CNEL (dBA) 50 Feet from Centerline of Outermost Lane from Project-Related Traffic** (on page 5.12-16). Since an increase in 3 dBA is considered significant, increases of 3 dBA or greater are in **bold**. It is important to note that the results in **Table 5.12-F** do not take into account any existing walls, berms, or topographic conditions that could attenuate traffic noise.

Along these roadway segments are existing single-family residences, one mobile home park, apartment buildings, and vacant land. Most of the existing single-family homes have a perimeter wall/noise barrier that is effectively 7 feet to 8 feet aboveground (i.e., 3 feet to 4 feet of earthen berm plus 3 feet to 4 feet of concrete block wall). This combination of earthen berm plus concrete block wall provides

approximately 8 dBA of noise attenuation (RCNM, Appendix A); thus, the existing single family homes will not be significantly affected by this increase in traffic noise levels.

Many of these single-family residences do not have active outdoor living areas, such as backyards or balconies, between the structures and the road. The mobile home park south of State Route 38 between Alderwood Lane and Palmwood Lane (or between Crafton Avenue and Garnet Avenue) has an existing wall that ranges from 4 feet to 5 feet aboveground. Further, these mobile homes will only experience traffic noise level increases greater than 3 dBA in the existing plus Project condition. The existing perimeter wall/noise barrier will provide approximately 5 dBA of noise attenuation (RCNM, Appendix A) and will reduce the traffic noise at these receivers to below 65 dBA CNEL (projected to extend to 60 feet from the roadway centerline under the existing plus Project condition). No Project-related traffic noise level increases will exceed 3 dBA at this location under all other future with Project conditions. There are no existing noise-sensitive land uses along the New Greenspot Road south of Greenspot Road or along Newport Avenue between Garnet Avenue and SR-38. Therefore, no significant Project-related traffic noise impacts will occur for off-site land uses, and no mitigation measures are required.

As shown in **Table 5.12-F**, the following seven roadway segments will have a 3 dBA or greater increase in one or more traffic scenarios and/or conditions:

- Greenspot Road between Church Street and Weaver Street
- Greenspot Road between Weaver Street and Alta Vista
- Greenspot Road between Alta Vista and New Greenspot Road
- State Route 38/Mill Creek Road between Crafton Avenue and Garnet Avenue
- Garnet Avenue between Newport Avenue and State Route 38/Mill Creek Road
- New Greenspot Road south of Greenspot Road
- Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road

Table 5.12-G through **Table 5.12-P**, on the pages following **Table 5.12-F** presents, for each of these seven roadway segments for the with and without project condition: the average daily trips (ADT) used in the analysis; the distance from the centerline to the 70 CNEL, 65 CNEL, and 60 CNEL noise contours; the CNEL at 50 feet from the centerline of the outermost lane; and the Project-related increase in the CNEL at 50 feet from the centerline of the outermost lane.⁶

⁶ The noise study is included in Appendix K to the Draft EIR. The data from which the information in Table 5.12-F through Table 5.12-P was compiled is contained in Table F through Table X. The modeling printouts for the roadway traffic noise levels are included in Appendix A of the noise study.

Table 5.12-F – Increase in CNEL (dBA) 50 Feet from Centerline of Outermost Lane from Project-Related Traffic

Phase Year	Without Newport Avenue/SR-38 Connection							With Newport Avenue/SR-38 Connection		
	E+P	1	2	3	4	5	Buildout	4	5	Buildout
	NA	2015	2017	2019	2021	2023	2035	2021	2023	2035
Roadway Segment										
Baseline Rd. west of Boulder Ave.	0.4	0.2	0.2	0.4	0.3	0.4	0.3	0.3	0.4	0.3
Baseline Rd. between Boulder Ave. and Highland Ave./Weaver St.	0.3	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2
Baseline Rd. east of Highland Ave./Weaver St.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Boulder Ave. north of Baseline Rd.	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Boulder Ave. between Baseline Rd. and Greenspot Rd.	1.6	0.4	0.7	0.9	0.9	0.9	0.7	0.9	1.0	0.7
Orange St. between Greenspot Rd. and SR-38	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1
Orange St. between SR-38 and Colton Ave.	1.0	0.3	0.6	0.9	0.7	0.8	0.0	1.0	1.0	0.0
Orange St. south of Colton Ave.	0.8	0.3	0.5	0.9	0.7	0.7	0.0	0.8	0.9	0.0
Highland Ave. north of Baseline Rd.	0.7	0.2	0.3	0.4	0.4	0.4	0.3	0.4	0.5	0.3
Weaver St. between Baseline Rd. and Water St.	0.9	0.3	0.5	0.6	0.7	0.8	0.7	0.7	0.8	0.7
Weaver St. between Water St. and Greenspot Rd.	1.1	0.2	0.5	0.8	0.8	0.9	0.8	0.8	1.0	0.7
5th St. west of Palm Ave.	0.7	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.5
5th St./Greenspot Rd. between Palm Ave. and Boulder Ave.	1.4	0.4	0.7	1.1	1.1	1.1	1.1	1.0	1.0	1.0
Greenspot Rd. between Boulder Ave. and Church St.	2.4	0.7	1.2	1.7	1.8	2.0	1.7	1.6	1.7	1.5
Greenspot Rd. between Church St. and Weaver St.	3.5	1.1	1.7	2.5	2.6	2.8	2.4	2.3	2.5	2.1
Greenspot Rd. between Weaver St. and Alta Vista	5.1	1.6	2.5	3.5	3.4	3.7	2.9	3.2	3.4	2.7
Greenspot Rd. between Alta Vista and New Greenspot Rd.	7.0	2.5	3.6	4.7	4.8	5.0	4.2	4.4	4.7	3.7
SR-38 west of Orange St.	0.3	0.0	0.1	0.2	0.2	0.2	0.0	0.3	0.3	0.0
SR-38 between Orange St. and Judson St.	1.3	0.4	0.7	1.1	1.0	1.1	0.0	1.2	1.5	0.0
SR-38 between Judson St. and Wabash St.	1.6	0.5	0.9	1.4	1.3	1.5	0.0	1.5	1.8	0.0
SR-38 between Wabash St. and Crafton Ave.	1.9	0.7	1.1	1.6	1.4	1.6	0.0	1.8	2.0	0.0
SR-38 between Crafton Ave. and Garnet Ave.	3.6	1.2	2.0	2.9	3.0	3.3	1.7	3.1	3.4	1.8
SR-38 between Garnet Ave. and Newport Ave.	1.8	0.5	0.8	1.2	1.4	1.5	1.3	1.4	1.6	1.4
SR-38 between Newport Ave. and Bryant St.	1.9	0.4	0.9	1.3	1.4	1.6	1.3	1.8	1.9	0.9
Bryant St. between SR-38 and Oak Glen Rd.	1.1	0.2	0.4	0.7	0.7	0.8	0.5	0.8	0.9	0.0
Bryant St. between Oak Glen Rd. and Yucaipa Blvd.	1.3	0.4	0.6	1.0	1.0	1.0	0.9	1.1	1.2	0.0
Bryant St. south of Yucaipa Blvd.	1.3	0.2	0.4	0.7	1.0	1.2	1.0	1.4	1.6	0.0

Table 5.12-F – Increase in CNEL (dBA) 50 Feet from Centerline of Outermost Lane from Project-Related Traffic

Phase Year	Without Newport Avenue/SR-38 Connection							With Newport Avenue/SR-38 Connection		
	E+P	1	2	3	4	5	Buildout	4	5	Buildout
	NA	2015	2017	2019	2021	2023	2035	2021	2023	2035
Roadway Segment										
Yucaipa Blvd. west of 14th St.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yucaipa Blvd. between 14th St. and Bryant St.	0.2	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0
14th St south of Yucaipa Blvd.	0.6	0.2	0.2	0.4	0.4	0.5	0.4	0.3	0.3	0.0
Garnet Ave. between Newport Ave. and SR-38	7.6	2.9	4.1	5.3	5.2	5.5	4.3	6.0	5.8	4.9
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	7.1	7.6	NA	6.7	8.8	6.3
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	6.5	6.9	NA	6.6	8.8	6.5

Notes:

E+P represents the existing Plus Project traffic condition

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under "No Project" condition.

Source: Compiled from LSA, pp. 15, Table F; p. 17, Table H; p. 19, Table J; p. 21, Table L; p. 23, Table N; p. 27, Table P; p. 29, Table T; p. 31, Table V; p. 33, Table X.

Table 5.12-G – Existing Traffic Noise Levels with Project

Roadway Segment	Existing					Existing with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	13,500	< 50	94	197	66.7	30,600	76	158	339	70.2	3.5
Greenspot Rd. between Weaver St. and Alta Vista	8,000	< 50	56	115	63.6	26,100	57	117	250	68.7	5.1
Greenspot Rd. between Alta Vista and New Greenspot Rd.	4,700	< 50	< 50	50	59.3	23,300	< 50	68	146	66.3	7.0
SR-38 between Crafton Ave. and Garnet Ave.	8,500	< 50	< 50	75	61.9	19,400	< 50	60	129	65.5	3.6
Garnet Ave. between Newport Ave. and SR-38	3,200	< 50	< 50	< 50	57.6	18,200	< 50	58	123	65.2	7.6
New Greenspot Rd. south of Greenspot Rd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Newport Ave, between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note:
Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

Table 5.12-G – Existing Traffic Noise Levels with Project

Roadway Segment	Existing					Existing with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under “No Project” condition.

Source: LSA, p. 10, Table D; p. 15, Table F.

Table 5.12-H – Traffic Noise Levels in Year 2015 (Phase 1) with Project

Roadway Segment	Year 2015 (Phase 1) without Project					Year 2015 (Phase 1) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	15,300	< 50	101	214	67.2	19,600	59	119	251	68.3	1.1
Greenspot Rd. between Weaver St. and Alta Vista	9,900	< 50	63	132	64.5	14,400	< 50	80	169	66.1	1.6
Greenspot Rd. between Alta Vista and New Greenspot Rd.	5,900	< 50	< 50	59	60.3	10,600	< 50	< 50	86	62.8	2.5

Table 5.12-H – Traffic Noise Levels in Year 2015 (Phase 1) with Project

Roadway Segment	Year 2015 (Phase 1) without Project					Year 2015 (Phase 1) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
SR-38 between Crafton Ave. and Garnet Ave.	8,900	< 50	< 50	77	62.1	11,800	< 50	< 50	93	63.3	1.2
Garnet Ave. between Newport Ave. and SR-38	4,100	< 50	< 50	< 50	58.7	8,000	< 50	< 50	72	61.6	2.9
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	8,300	< 50	< 50	73	61.8	NA
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	3,700	< 50	< 50	< 50	58.3	NA

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 16, Table G; p. 17, Table H.

Table 5.12-I – Traffic Noise Levels in Year 2017 (Phase 2) with Project

Roadway Segment	Year 2017 (Phase 2) without Project					Year 2017 (Phase 2) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	16,200	< 50	105	222	67.5	24,300	67	136	290	69.2	1.7
Greenspot Rd. between Weaver St. and Alta Vista	10,800	< 50	67	140	64.9	19,400	< 50	97	205	67.4	2.5
Greenspot Rd. between Alta Vista and New Greenspot Rd.	6,600	< 50	< 50	63	60.8	15,300	< 50	51	110	64.4	3.6
SR-38 between Crafton Ave. and Garnet Ave.	9,200	< 50	< 50	79	62.2	14,500	< 50	< 50	106	64.2	2.0
Garnet Ave. between Newport Ave. and SR-38	4,600	< 50	< 50	< 50	59.2	11,900	< 50	< 50	93	63.3	4.1
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	12,600	< 50	< 50	97	63.6	NA
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	5,500	< 50	< 50	56	60.0	NA

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

Table 5.12-I – Traffic Noise Levels in Year 2017 (Phase 2) with Project

Roadway Segment	Year 2017 (Phase 2) without Project					Year 2017 (Phase 2) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 18, Table I; p. 19, Table J.

Table 5.12-J – Traffic Noise Levels in Year 2019 (Phase 3) with Project

Roadway Segment	Year 2019 (Phase 3) without Project					Year 2019 (Phase 3) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	17,100	< 50	109	230	67.7	30,500	76	158	337	70.2	2.5
Greenspot Rd. between Weaver St. and Alta Vista	11,700	< 50	70	147	65.2	25,900	56	117	249	68.7	3.5
Greenspot Rd. between Alta Vista and New Greenspot Rd.	7,200	< 50	< 50	67	61.2	21,700	< 50	65	139	65.9	4.7

Table 5.12-J – Traffic Noise Levels in Year 2019 (Phase 3) with Project

Roadway Segment	Year 2019 (Phase 3) without Project					Year 2019 (Phase 3) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
SR-38 between Crafton Ave. and Garnet Ave.	9,400	< 50	< 50	80	62.3	18,100	< 50	57	123	65.2	2.9
Garnet Ave. between Newport Ave. and SR-38	5,000	< 50	< 50	< 50	59.6	17,100	< 50	55	118	64.9	5.3
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	18,600	< 50	58	125	65.3	NA
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	8,500	< 50	< 50	75	61.9	NA

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the "No Project" condition.

Source: LSA, p. 20, Table K; p. 21, Table L.

Table 5.12-K – Traffic Noise Levels in Year 2021 (Phase 4) with Project

Roadway Segment	Year 2021 (Phase 4) without Project					Year 2021 (Phase 4) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	18,000	< 50	112	238	67.9	32,600	79	165	352	70.5	2.6
Greenspot Rd. between Weaver St. and Alta Vista	12,700	< 50	74	155	65.6	28,100	59	123	263	69.0	3.4
Greenspot Rd. between Alta Vista and New Greenspot Rd.	7,800	< 50	< 50	70	61.5	23,700	< 50	69	147	66.3	4.8
SR-38 between Crafton Ave. and Garnet Ave.	9,600	< 50	< 50	81	62.4	19,000	< 50	59	127	65.4	3.0
Garnet Ave. between Newport Ave. and SR-38	5,500	< 50	< 50	56	60.0	18,300	< 50	58	124	65.2	5.2
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	20,300	< 50	63	133	65.7	7.1
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	9,000	< 50	< 50	77	62.1	6.5

Note:

Table 5.12-K – Traffic Noise Levels in Year 2021 (Phase 4) with Project

Roadway Segment	Year 2021 (Phase 4) without Project					Year 2021 (Phase 4) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 22, Table M; p. 23, Table N.

Table 5.12-L – Traffic Noise Levels in Year 2023 (Phase 5) with Project

Roadway Segment	Year 2023 (Phase 5) without Project					Year 2023 (Phase 5) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	18,900	58	116	245	68.1	36,000	84	176	376	70.9	2.8
Greenspot Rd. between Weaver St. and Alta Vista	13,600	< 50	77	162	65.9	31,800	64	133	285	69.6	3.7
Greenspot Rd. between Alta Vista and New Greenspot Rd.	8,500	< 50	< 50	75	61.9	27,100	< 50	75	161	66.9	5.0
SR-38 between Crafton Ave. and Garnet Ave.	9,900	< 50	< 50	82	62.5	20,800	< 50	63	135	65.8	3.3
Garnet Ave. between Newport Ave. and SR-38	6,000	< 50	< 50	59	60.4	21,400	< 50	64	138	65.9	5.5
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	23,300	< 50	68	146	66.3	7.6
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	10,200	< 50	< 50	84	62.7	6.9

Note:

Table 5.12-L – Traffic Noise Levels in Year 2023 (Phase 5) with Project

Roadway Segment	Year 2023 (Phase 5) without Project					Year 2023 (Phase 5) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under “No Project” condition.

Source: LSA, p. 24, Table O; p. 25, Table P.

Table 5.12-M – Traffic Noise Levels in Year 2035 (Build-out) with Project

Roadway Segment	Year 2035 (Build-out) without Project					Year 2035 (Build-out) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	24,300	67	136	290	69.2	41,400	92	193	413	71.6	2.4
Greenspot Rd. between Weaver St. and Alta Vista	19,300	< 50	96	205	67.4	37,400	71	148	317	70.3	2.9
Greenspot Rd. between Alta Vista and New Greenspot Rd.	11,900	< 50	< 50	93	63.3	30,800	< 50	82	175	67.5	4.2

Table 5.12-M – Traffic Noise Levels in Year 2035 (Build-out) with Project

Roadway Segment	Year 2035 (Build-out) without Project					Year 2035 (Build-out) with Project					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
SR-38 west of Orange St.	16,400	< 50	106	224	67.5	16,400	< 50	106	224	67.5	0.0
SR-38 between Crafton Ave. and Garnet Ave.	11,200	< 50	< 50	89	63.1	16,700	< 50	54	117	64.8	1.7
Garnet Ave. between Newport Ave. and SR-38	8,700	< 50	< 50	76	62.0	23,800	< 50	69	148	66.3	4.3
New Greenspot Rd. south of Greenspot Rd.	NA	NA	NA	NA	NA	24,200	< 50	69	149	66.4	NA
Newport Ave. between Garnet Ave. and SR-38	NA	NA	NA	NA	NA	10,700	< 50	< 50	87	62.9	NA

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 26, Table Q; p. 27, Table R.

Table 5.12-N – Traffic Noise Levels in Year 2021 (Phase 4) with Project and SR-38/Newport Avenue Connection

Roadway Segment	Year 2021 (Phase 4) without Project					Year 2021 (Phase 4) with Project and SR-38 Connection					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	18,100	56	113	239	68.0	30,900	77	159	340	70.3	2.3
Greenspot Rd. between Weaver St. and Alta Vista	12,800	< 50	74	156	65.6	26,500	57	118	253	68.8	3.2
Greenspot Rd. between Alta Vista and New Greenspot Rd.	7,900	< 50	< 50	71	61.6	22,000	< 50	65	140	66.0	4.4
SR-38 between Crafton Ave. and Garnet Ave.	9,600	< 50	< 50	81	62.4	19,500	< 50	60	129	65.5	3.1
Garnet Ave. between Newport Ave. and SR-38	4,000	< 50	< 50	< 50	58.6	16,000	< 50	53	113	64.6	6.0
New Greenspot Rd. south of Greenspot Rd.	4,000	< 50	< 50	< 50	58.6	18,600	< 50	58	125	65.3	6.7
Newport Ave. between Garnet Ave. and SR-38	2,000	< 50	< 50	< 50	55.6	9,200	< 50	< 50	79	62.2	6.6

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 28, Table S; p. 29, Table T.

Table 5.12-O – Traffic Noise Levels in Year 2035 (Phase 5) with Project and SR-38/Newport Avenue Connection

Roadway Segment	Year 2023 (Phase 5) without Project					Year 2023 (Phase 5) with Project and SR-38 Connection					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	19,000	58	116	246	68.2	34,100	82	170	363	70.7	2.5
Greenspot Rd. between Weaver St. and Alta Vista	13,700	< 50	77	163	65.9	29,600	61	128	273	69.3	3.4
Greenspot Rd. between Alta Vista and New Greenspot Rd.	8,500	< 50	< 50	75	61.9	25,100	< 50	71	153	66.6	4.7
SR-38 between Crafton Ave. and Garnet Ave.	9,800	< 50	< 50	82	62.5	21,400	< 50	64	138	65.9	3.4
Garnet Ave. between Newport Ave. and SR-38	4,900	< 50	< 50	52	59.5	18,900	< 50	59	127	65.3	5.8
New Greenspot Rd. south Greenspot Rd.	2,600	< 50	< 50	< 50	56.7	19,700	< 50	61	130	65.5	8.8
Newport Ave. between Garnet Ave. and SR-38	1,300	< 50	< 50	< 50	53.7	9,700	< 50	< 50	81	62.5	8.8

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dba = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the "No Project" condition.

Source: LSA, p. 30, Table U; p. 31, Table V.

Table 5.12-P – Traffic Noise Levels in Year 2035 (Build-out) with Project and SR-38/Newport Avenue Connection

Roadway Segment	Year 2035 (Build-out) without Project					Year 2035 (Build-out) with Project and SR-38 Connection					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dba) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dba) 50 ft from Centerline of Outermost Lane	Increase CNEL (dba) 50 ft from Centerline of Outermost Lane
Greenspot Rd. between Church St. and Weaver St.	24,500	67	137	291	69.3	39,600	89	187	401	71.4	2.1
Greenspot Rd. between Weaver St. and Alta Vista	19,500	< 50	97	206	67.4	35,600	69	144	307	70.1	2.7
Greenspot Rd. between Alta Vista and New Greenspot Rd.	12,400	< 50	< 50	96	63.5	29,000	< 50	78	168	67.2	3.7
SR-38 between Crafton Ave. and Garnet Ave.	11,000	< 50	< 50	88	63.0	16,800	< 50	55	117	64.8	1.8
Garnet Ave. between Newport Ave. and SR-38	6,600	< 50	< 50	< 50	60.8	20,600	< 50	62	134	65.7	4.9

Table 5.12-P – Traffic Noise Levels in Year 2035 (Build-out) with Project and SR-38/Newport Avenue Connection

Roadway Segment	Year 2035 (Build-out) without Project					Year 2035 (Build-out) with Project and SR-38 Connection					
	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
New Greenspot Rd. south Greenspot Rd.	5,100	< 50	< 50	< 50	59.7	22,200	< 50	66	141	66.0	6.3
Newport Ave. between Garnet Ave. and SR-38	2,600	< 50	< 50	< 50	56.7	11,600	< 50	< 50	92	63.2	6.5

Note:

Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

ft = feet

SR-38 = State Route 38/Mill Creek Road

NA = Not applicable. Roadway segment does not exist under the “No Project” condition.

Source: LSA, p. 32, Table W; p. 33, Table X.

Traffic Noise Impacts to On-site Land Uses

The Project will have residential uses proposed along the New Greenspot Road south of Greenspot Road and along Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road. Thus, potential traffic noise impacts will occur for these proposed on-site land uses, and mitigation measures are required. Since traffic noise levels will be the highest in the 2035 (build-out) with Project condition, potential noise impacts and associated mitigation measures are based on traffic noise for that condition.

Specifically regarding New Greenspot Road south of Greenspot Road in the 2035 (build-out) condition, the 70 dBA CNEL contour will be confined to within the roadway right-of-way, the 65 dBA CNEL contour will start 82 feet from the roadway centerline, and the 60 dBA CNEL would start 175 feet from the roadway centerline. Based on the Project's layout (see **Figure 3.8 – Proposed Land Use Plan**), the following planning areas with residential uses would be impacted by traffic noise along the New Greenspot Road south of Greenspot Road: PA1, PA 3, PA 4, PA 7, PA 11, PA 14, and PA 20A. (LSA, p. 35)

Among these planning areas, PA 20A and 20C are proposed to have medium-density residential with neighborhood commercial overlay. As discussed previously, the City has an exterior noise standard of 60 dBA CNEL for residential land uses. However, an exterior noise level of up to 65 dBA CNEL will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA CNEL with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation. Typical sound level reduction of buildings in a warm climate such as Southern California is 12 dBA with windows open and 24 dBA with windows closed (LSA, p. 35).

At this time, no detailed site plans are available to determine whether any of the proposed residential units will be within the impact zone of the 65 and 60 dBA CNEL traffic noise contours. As a result, any noise-sensitive land uses proposed within 175 feet of the centerline of the New Greenspot Road will need to be protected by mitigation measures such as but not limited to a solid wall to meet the City's exterior noise standards for residential uses (LSA, p. 35). Since there is insufficient information at this time to identify the specific types and form of noise attenuation or mitigation that may be required, mitigation measure **MM NOI 1** requires a Final Noise Impact Study that identifies specific mitigation (if needed) that will ensure compliance with the City's noise standards. With the appropriate combination of mitigation measures, which will be documented and specified in the Final Noise Study, all potential units will be mitigated below the level of significance.

Specifically regarding Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road in the 2035 (build-out) with Project condition, the 70 dBA CNEL contour and 65 dBA CNEL contour will be confined to within the roadway right-of-way, and the 60 dBA CNEL contour will extend to 87 feet from the roadway centerline. Based on the Project's layout (see **Figure 3-8 – Proposed Land Use Plan**), the following planning areas with residential uses will be impacted by traffic noise along the Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road: PA 20C, PA 21, PA 22, PA 23, PA 24, PA 25, PA 33, PA 36, PA 40, PA 43A, and PA 43B. (LSA, pp. 35, 36)

Among these planning areas, PA 40 is proposed to have high-density residential with neighborhood commercial overlay over a portion of the southwest corner of the planning area and PA 20C is proposed to have medium-density residential with neighborhood commercial overlay. As discussed previously, the City has an exterior noise standard of 60 dBA CNEL for residential land uses. However, an exterior noise level of up to 65 dBA CNEL will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA CNEL with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation. Typical sound level reduction of buildings in a warm climate such as Southern California is 12 dBA with windows open and 24 dBA with windows closed (LSA, p. 36). At this time, no detailed site plans are available to determine whether any of the proposed residential units would be within the impact zone of the 60 dBA CNEL traffic noise contours. As a result, any noise-sensitive land uses, including parks with barbecue or dining area (passive park area/open space with no designated active use area is not considered noise-sensitive), proposed within 87 feet of the centerline of the Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road will need to be protected by mitigation measures such as but not limited to a solid wall to meet the City's exterior noise standards for noise-sensitive uses. Moreover, since a portion of PA 40 and PA 20C will have a neighborhood commercial overlay and PA 20B is all commercial, potential noise impacts associated with the commercial uses, such as truck loading/unloading activities and parking lot noise, will need to be mitigated to meet the City Municipal Code noise control ordinance requirements. (LSA, pp. 35, 36) The Final Noise Impact Analysis required by mitigation measure **MM NOI 1** will identify the specific mitigation required for compliance with the City's noise standards. With the appropriate combination of mitigation measures, which will be documented and specified in the Final Noise Study, all potential units will be mitigated below the level of significance.

Long-Term Stationary (Operational) Noise Impacts

Potential long-term stationary noise impacts would be associated primarily with operations on the Project site from the proposed community park, truck delivery and loading/unloading at the on-site commercial uses, and activities at the parking lots associated with the commercial uses. These activities are potential point sources of noise that could affect the proposed noise-sensitive receptors adjacent to these uses. (LSA, p. 36)

As noise spreads from a source it loses energy, so the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dBA reduction in the noise level for each doubling of distance from a single-point source of noise, such as an idling truck, to the noise-sensitive receptor of concern. Although individual activity may generate relatively high and intermittent noise, when added to the typically lower ambient noise and averaged over a longer period of time, the cumulative noise level would be much lower and would be considered a less than significant impact. (LSA, p. 36)

Community Park Activities

Amenities at the community parks may include picnic tables, basketball courts, and gathering places. Noise from these events would not be expected to impact residential uses located adjacent to the

community park. However, most of the activities would occur during daytime hours and any events that would generate substantial noise would be subject to the City's Noise Ordinance and would likely be concluded by 10:00 p.m. No mitigation measures are required. (LSA, p. 36)

Truck Delivery and Loading/Unloading Activities

Delivery trucks for the proposed on-site commercial/retail uses would result in a maximum noise similar to noise readings from loading and unloading activities for other projects with similar operations, which generates a noise level of 75 dBA L_{max} at 50 ft and is used in this analysis. Normal deliveries, including supplies, trash collection, or deliveries by United Parcel Services (UPS) or Federal Express (FedEx) trucks, occur typically once in the morning and sometimes once in the afternoon. At this time, there are no details available for the layout in the site plan for the loading/unloading areas in relation to adjacent residential uses. Orientation of the commercial buildings and associated loading/unloading areas will take into account the maximum distance attenuation and soundwall noise reduction, if necessary, to reduce the loading/unloading noise at the nearest residences. (LSA, pp. 36-37)

Although a typical truck unloading process takes an average of 10–15 minutes, this maximum noise level occurs in a much shorter period of time. It is not expected that truck delivery/loading/unloading activities would result in this maximum noise level lasting more than 15 minutes in any hour when it occurs. Therefore, with implementation of adequate sound walls and compliance with the City's noise control ordinance, noise associated with truck delivery/loading/unloading activities at the Project site would not result in noise levels exceeding the typical noise standards at the nearest residences on the Project site. (LSA, pp. 36-37)

Other Parking Lot Activities.

Representative parking activities such as conversation, engine startup, slow-moving vehicles, or car door slamming would generate approximately 60–70 dBA L_{max} at 50 ft. It should be noted that although there might be occasional car alarm noise at a parking lot, it is a security concern and not considered part of the normal operations in a parking lot. Similar to the loading/unloading noise, with the distance factor, and soundwalls, if necessary, exterior noise levels at adjacent residences from parking lot activities on site would be reduced to below the City's exterior noise standards for residential uses. No significant noise impacts would occur from on-site parking lot activities. (LSA, p. 37)

Thus, mitigation measure **MM NOI 1** is required to ensure Project-related traffic and stationary (operational) noise is not substantial. Therefore, long-term noise impacts resulting in a substantial permanent increase in ambient noise levels in the Project vicinity will be **less than significant after implementation of mitigation**.

Threshold: *Would the proposed Project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Temporary/periodic/short-term noise impacts will result during Project construction. These noise impacts will be associated with excavation, grading, and erecting of buildings on site during construction of the Project. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the Project area but will cease once construction of the Project is completed. Construction-related noise levels produced from within a site can vary according to the size of the

construction site, the amount and type of site preparation required, and the types of equipment associated with each activity. Project construction will involve multiple phases (site preparation, grading, building construction, paving, and architectural coating) employing differing types and quantities of mechanical equipment; each will produce varying levels of noise at varying distances from within the active maintenance/construction area. Construction will occur in five phases based on market conditions and the conceptual phasing plan (see **Figure 3-13 – Conceptual Phasing Plan**). It is generally anticipated that the five phases of the Project will be completed in 2015, 2017, 2019, 2021, and 2023.

Two types of short-term noise impacts will occur during the construction of the Project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site for the Project that will incrementally increase noise levels on access roads leading to the site. As shown on **Table 5.12-Q**, there will be a relatively high single-event noise exposure potential at a maximum level of 87 dBA L_{max} with trucks passing at 50 feet. However, the projected construction traffic will be small when compared to the existing traffic volumes on 5th Street and Boulder Avenue. Therefore, short-term construction-related worker commutes and equipment transport noise impacts will not be substantial. (LSA, p. 11)

Table 5.12-Q – Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Level Measured at 50 ft (dBA)	Suggested Maximum Sound Level for Analysis at 50 ft (dBA)
Pile drivers (12,000 to 18,000 ft-lb/blow)	81–96	93
Rock drills	83–99	96
Jackhammers	75–85	82
Pneumatic tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul trucks	83–94	88
Cranes	79–86	82
Portable generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-end loaders	77–90	86
Hydraulic backhoes	81–90	86
Hydraulic excavators	81–90	86
Graders	79–89	86
Air compressors	76–89	86
Trucks	81–87	86

Type of Equipment	Range of Maximum Sound Level Measured at 50 ft (dBA)	Suggested Maximum Sound Level for Analysis at 50 ft (dBA)
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Notes:

dBA = A-weighted decibels

ft = feet

ft-lb/blow = foot-pounds per blow

L_{max} = maximum instantaneous noise level

Source: LSA, p. 12, Table E.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases will change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. 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 ranges to be categorized by work phase. (LSA, p. 12)

Table 5.12-Q lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower-power settings. (LSA, p. 12)

Construction of the Project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. This equipment will be used on the Project site. As shown in **Table 5.12-Q**, the maximum noise level generated by each scraper on the proposed Project site is assumed to be 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would also generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by water trucks and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level at each individual residence during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area. (LSA, p. 13)

The closest off-site existing residences in the vicinity of the Project area are more than 150 feet from the Project boundary, which include single family residences along Tres Lagos Street and Sapphire Avenue, along Florida Street and Garnet Avenue, along the eastern terminus of Newport Avenue, and along Redlands Heights Ranch Road east of the Project site. Because sound dissipates over distance, these closest residences to the south may be subject to short-term noise reaching 81 dBA L_{max} , generated by construction activities near the Project boundary. (LSA, p. 13)

Proposed on-site residential uses constructed and occupied in the early phases of the Project would be potentially impacted by construction associated with later phases that are in close proximity to the residents of earlier phases. It is estimated some of these early phases residences may be exposed to construction noise reaching 91 dBA L_{max} when construction activity occurs 50 feet away from their property line. (LSA, p. 13)

The City has determined that certain excessive noise is a detriment to the public health, comfort, convenience, safety, general welfare and property and the peace and quiet of the city and its inhabitants. In order to control the making, creation or maintenance of such loud, unnecessary, unnatural or unusual noise or vibrations that are prolonged, unusual, annoying, disturbing and unnatural in their time, place and use, the City adopted Municipal Code Chapter 8.50, Noise Control. The City Municipal Code Chapter 15.48 determined that construction noise is exempt from noise restrictions if construction takes place within certain hours. Consistent with the intent of this restriction on construction hours, noise impacts resulting from construction activities⁷ that commence no earlier than one-half hour before sunrise and terminate (end) no later than one-half hour after sunset Monday through Sunday are not considered by the City to be detrimental to public health, safety, and general welfare. Thus, as construction noise will not be permanent and continuous, and Project-related construction will adhere to the City Municipal Code Section 15.48.030 as is required, impacts from temporary or periodic increase in ambient noise levels will be less than significant. However, to further reduce construction-related noise impacts, mitigation measure **MM NOI 2** will be implemented. Therefore, impacts will be **less than significant with mitigation**.

Threshold: *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?*

As discussed above, the nearest airports to the City, which includes the Project site, are SBIA and RMA. SBIA is located approximately 6.1 miles west of the Project site, and RMA is located approximately 1.6 miles west of the Project site (Google Maps). The Project site is not located within the Airport Influence Area of SBIA or RMA, and as such, is not subject to associated airport land use plans (GP, Figure 6-7). Additionally, the Project site is not located within a noise contour of SBIA or RMA (GP EIR, p. 5.11-19; RGP, Figure 9.1). Local helicopter air traffic may occur within the Project site; however helicopter use for fire and police and transport to and from hospitals are considered emergency activities and addressed by federal regulations. The noise exposure generated by helicopter activity from helicopters potentially utilizing SBIA or RMA varies dependent on flight path, which is determined by wind direction (GP EIR, p. 5.11-33). Thus, implementation of the Project will not expose people residing or working in the Project area to excessive noise levels from aircraft or helicopter operations from airports in the Project site vicinity. Therefore, **no impact** will occur.

⁷ Section 15.48.020 of the Highland Municipal Code defines construction activity as any construction of habitable and non-habitable structures (buildings, walls, parking lots), including public improvements (streets, roads, drainage and other infrastructure) requiring inspection by the city engineer and delivery of equipment, materials and related components to construction sites within the city.

Threshold: *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?*

There are no private airstrips in the City, nor are there any located in the Project site vicinity (Google Maps). The aforementioned airports are publicly owned and operated, thus, they are not private airstrips. Therefore, **no impact** will occur.

5.12.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measure that could minimize significant adverse impacts (State *CEQA Guidelines* Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts from noise or to reduce impacts to below the level of significance.

*Potential impacts related to the operation of the Project at build-out will be reduced to a less than significant level with implementation of mitigation measure **MM NOI 1**.*

MM NOI 1: Prior to approval of final design plans for individual developments within the Harmony Specific Plan, a Final Noise Impact Analysis shall be prepared for each development based on precise grading plans and architectural plans that will allow for detailed noise modeling. The Final Noise Impact Analysis shall be utilized to: (i) confirm the findings of the Noise Impact Analysis included in Appendix K of the Draft EIR; (ii) confirm compliance with City of Highland’s noise standards; and (iii) identify what, if any, noise shielding, attenuation, or mitigation may be required. Potential noise attenuation or mitigation measures include, but are not limited to: walls, fences, alternative pavement surfaces, setbacks, sound insulation for affected residences, changes in screening materials, complete enclosure of noise generating equipment (at the non-residential uses), increased setbacks, reorienting parking lots, or other measures as deemed appropriate by the City. With the appropriate combination of mitigation measures, which will be documented and specified in this study, all potential units will be mitigated below the level of significance.

*Potential noise impacts from construction of the Project are considered less than significant with a mitigation measure incorporated; thus, mitigation measure **MM NOI 2** will be implemented to reduce construction noise.*

MM NOI 2: During construction, the following measures shall be implemented to reduce potential construction noise impacts on nearby noise-sensitive receptors:

- During all site excavation and grading, the Project construction contractor(s) shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers’ standards;
- The Project construction contractor(s) shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the Project site;
- The Project construction contractor(s) shall locate equipment staging in areas that will create the greatest practical distance between construction-related noise sources and noise-sensitive receptors nearest to the Project site during all Project construction; and

- The Project construction contractor(s) shall provide the City of Highland Building Division a name and phone number of a contact person in the event that noise levels become disruptive. The name and phone number shall also be posted on site, informing the public who to contact. The City of Highland Building Division shall monitor compliance.

5.12.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

Construction noise will not result in potentially significant impacts because mitigation measure **MM NOI 2** will be implemented to reduce impacts. Operational noise will not result in potentially significant impacts as mitigation measure **MM NOI 1**, and subsequent implementation of any noise attenuation or mitigation measures identified in the Final Noise Impact Analysis will ensure development within the Harmony Specific Plan is consistent with the City's noise standards. Thus, potentially significant impacts will be **less than significant with mitigation**.

5.12.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Cumulative noise impacts result when the construction, vehicles, and human activity of the Project are added to the other reasonably foreseeable projects in the area. Because noise is a localized phenomenon, which drastically reduces in magnitude as the distance from the noise source increases, only those cumulative projects in the vicinity of the Project will be likely to contribute to cumulative construction or stationary-sourced noise. The nearest cumulative project to the Project site is approximately one mile away, which is too great a distance for the Project to contribute to a cumulatively considerable impact with regards to construction or operational noise.

Cumulative noise impacts may also occur when Project-related vehicular trips are combined with vehicular trips from the cumulative projects. As previously mentioned, the analysis of traffic noise in all future conditions and scenarios, except for Existing with Project condition, include data (trips) from cumulative projects within the Project study area provided by the cities of Highland, Redlands, and Yucaipa. Thus, in the above analysis, the anticipated noise increases from traffic reflects the Project and cumulative projects. As shown on **Table 5.12-M – Traffic Noise Levels in Year 2035 (Build-out) with Project** and **Table 5.12-P – Traffic Noise Levels in Year 2035 (Build-out) with Project and SR-38/Newport Avenue Connection**, the following roadway segments will experience a noise increase greater than 3 dBA, which is considered potentially significant:

Without the State Route 38/Newport Avenue connection --

- Greenspot Road between Alta Vista and New Greenspot Road
- Garnet Avenue between Newport Avenue and State Route 38/Mill Creek Road

With the State Route 38/Newport Avenue connection --

- Greenspot Road between Alta Vista and New Greenspot Road
- Garnet Avenue between Newport Avenue and State Route 38/Mill Creek Road

- New Greenspot Road south of Greenspot Road
- Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road

The potentially significant cumulative impacts from traffic noise will be reduced to less than significant through the implementation of mitigation measure **MM NOI 1**, which requires preparation of a Final Noise Analysis for each development. The Final Noise Study will identify what, if any noise shielding, attenuation or other forms of mitigation may be required. With the appropriate combination of mitigation measures, which may include: walls, fences, alternative pavement surfaces, set-backs, sound insulation for affected residences, changes in screening materials, complete enclosure of noise generating equipment (at the non-residential uses), increased setbacks, reorienting parking lots, or other measures as documented by the Final Noise Study, , cumulative impacts to noise will be **less than significant with mitigation**.

Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.12.9 References

In addition to other documents, the following references were used in the preparation of this section of the Draft EIR:

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| FTA | Federal Transit Administration, Office of Planning and Environment, <i>Transit Noise and Vibration Impact Assessment</i> , May 2006. (Available at http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf , accessed January 30, 2013.) |
| Google Maps | Google, Inc., Google Maps, website. (Available at http://maps.google.com , accessed January 30, 2013.) |
| GP | City of Highland, <i>General Plan</i> , adopted March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed January 30, 2013.) |
| GP EIR | City of Highland, <i>General Plan and Development Code Update Environmental Impact Report</i> , September 2005. (Available at the City of Highland.) |
| Jones & Stokes | Jones & Stokes, <i>Transportation- and Construction-Induced Vibration Guidance Manual</i> , June 2001. (Available at http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf , accessed October 21, 2013.) |
| HMC | City of Highland, <i>Highland Municipal Code</i> , current through Ordinance 388, passed January 14, 2014. (Available at http://www.codepublishing.com/ca/highland/ , accessed February 27, 2014.) |
| LSA | LSA Associates, <i>Noise Impact Analysis, Harmony, City of Highland, California</i> , March 2014. (Appendix K) |
| RCNM | U.S. Department of Transportation, <i>FHWA Roadway Construction Noise Model User's Guide</i> , January 2006. (Available at http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf , |

accessed October 23, 2013.)

RPG City of Redlands, *1995 General Plan*, amended December 1997. (Available at http://www.ci.redlands.ca.us/community/general_plan.htm, accessed January 30, 2013.)

5.13 Population and Housing

This section evaluates potential impacts to population and housing resulting from the proposed Project.

5.13.1 Setting

5.13.1.1 Project Location

As shown in **Figure 3-1 – Regional Map** the Project site is located in the southeastern-most portion of the City of Highland. The Project site is comprised of 1,657 acres of land located at the eastern edge of the City adjacent to the San Bernardino County and San Bernardino National Forest. The Project site is located east of the Santa Ana River and north of Mill Creek (**Figure 3-2 – Location Map**). The Project site is located approximately 6 miles east of the SR-210 freeway, 4.5 miles north of the I-10 freeway and just north of SR 38.

5.13.1.2 Existing Land Uses

As shown in **Figures 3.4-1 and 3.4-2 – Project Site Photographs**, the Project site is vacant and consists of abandoned orchards and an area which was used as a borrow site to build the Seven Oaks Dam. Remnants of the Project site's agricultural past still remain on-site. For instance, portions of prior building foundations, roads, irrigation systems, and water wells still exist. However, these prior improvements have been destroyed, or are only partially intact.

5.13.1.3 Surrounding Land Uses

Features surrounding the Project site include the San Bernardino National Forest to the north, the Santa Ana River to the west, agricultural land to the southwest, and Mill Creek to the south. The Seven Oaks Dam is located approximately 0.75 miles to the northwest of the Project site and several rural residences are located to the east of the Project site. Access to the Project site is limited, given its outlying location within the City. Greenspot Road provides the sole connection between the City and the Project site. However, additional access to the Project site is available to the south via the City of Redlands.

The Project site is contiguous with the City of Highland to the northwest, and the County of San Bernardino to the north, east, and west. In addition, the City of Redlands is located across Mill Creek to the south.

The existing uses surrounding the Project site include the San Bernardino National Forest to the north and north-east of the Project site. Agricultural land (citrus trees) is located to the west along with scattered rural residences. To the south of the Project site is Mill Creek; further south across Mill Creek are areas of open space followed by single family residential units. The area to the east of the Project site is primarily open space with scattered rural residences, and scattered areas of agricultural land (citrus trees).

The rural residences located to the east of the Project site have primary access from Newport Avenue, which extends into Redlands Heights Ranch Road and Fish Hatchery Road. The rural residences located to the west of the Project site have primary access from Emerald Avenue.

5.13.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to population and housing may be considered potentially significant if the Project would:

- 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);
- displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

5.13.3 Related Regulations

5.13.3.1 Federal

There are no federal housing regulations applicable to the proposed Project.

5.13.3.2 State

California Government Code

State law mandates local communities to plan for enough housing to meet projected growth in California. Article 10.6 of the California Government Code (Sections 655801–65590) requires each city and county to prepare a Housing Element of its General Plan. The housing element is one of seven state-mandated elements that every general plan must contain, and is required to be updated every five years and determined legally adequate by the State. The purpose of the housing element is to identify the community's housing needs, state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs, and define the policies and programs that the community will implement to achieve the stated goals and objectives. The Housing Element identifies and establishes policies with respect to meeting the needs of existing and future residents. It also establishes policies that will guide decision-makers and sets forth an action plan to implement its housing goals.

5.13.3.3 Local

City of Highland General Plan

The Housing Element identifies and establishes the City's policies with respect to meeting the needs of existing and future residents. It establishes policies that will guide the City's decision-makers and sets forth an action plan to implement its housing goals. Applicable goals, policies, and programs outlined in the Housing Element include:

Goal 8.2 – Facilitate the development of housing suitable for the diverse needs of current and future Highland residents.

- **Policy 1 (page 8-32)**. Bolster the City's affordable housing supply through regulatory tools that encourage the development of or funding for quality lower and moderate income housing development.

- **Policy 2 (page 8-32).** Provide a transparent, timely and cost-effective regulatory review process that facilitates the development of housing opportunities for all income levels.
- **Policy 3 (page 8-32).** Ensure new residential projects are adequately served by park and recreation, libraries, transportation, public safety, and other public services and facilities.
- **Policy 4 (page 8-36).** Encourage the development of a range of housing types in targeted areas of the City, such as inventoried vacant residential sites, Planned Development districts, Mixed Use districts, Transit Oriented Development opportunities, and special Policy Areas identified in the Land Use Element.
- **Policy 5 (page 8-36).** Encourage the use of innovative site development and allow the use of construction materials and techniques that reduce the cost of housing and its impact on the environment.
- **Policy 6 (page 8-36).** Provide adequate regulatory tools to preserve the City's factory-built housing stock.

Goal 8.3 – Identify land uses and available land resources available to provide a variety of housing types.

- **Policy 1 (page 8-42).** Establish higher density nodes with new housing opportunities intended to serve all income levels.
- **Policy 2 (page 8-42).** Provide a variety of home building opportunities for a range of housing types.
- **Policy 3 (page 8-42).** Expand the affordable housing stock and provide homeowners with an additional source of income by facilitating the construction of second dwelling units.

Goal 8.4 – Assist in the provision of adequate and affordable housing for all Highland residents.

- **Policy 1 (page 8-46).** Improve the quality of life for lower and moderate income Highland residents through providing homeownership assistance and promoting County homeowner and renter assistance opportunities.
- **Policy 2 (page 8-46).** Provide regulatory and financial incentives to encourage the development of affordable single-and multifamily housing.
- **Policy 3 (page 8-46).** Prohibit housing discrimination and other related discriminatory actions in all aspects affecting the sale or rental of housing based on race, religion, or other arbitrary classification.

Goal 8.5 – Facilitate the development of a broad range of housing types to meet the special needs of Highland residents.

- **Policy 1 (page 8-50).** Provide the regulatory framework necessary to facilitate special needs housing in Highland.
- **Policy 2 (page 8-50).** Encourage development of accessible housing for the disabled through regulatory relief.

- **Policy 3 (page 8-50).** Creation of a continuum of care for the homeless in Highland through establishing a housing plan for the homeless including zoning districts allowing emergency shelter, transitional housing, and permanent supportive housing.
- **Policy 4 (page 8-50).** Support innovative public, private, and nonprofit efforts in the development and financing of affordable, special needs housing.

5.13.4 Project Design Features

Design features refer to ways in which the proposed Project will avoid or minimize potential impacts through the design of the Project. There are no design features with respect to population and housing.

5.13.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The Project proposes between 3,467 and 3,632 dwelling units with and without the Neighborhood Commercial Overlay, respectively. Using the City's average household size of 3.41 persons per household from the 2012 Draft Housing Element, the Project population would range from 11,822 to 12,385 (Draft 2012 Housing Element, Table 8.6).

In addition, the Project also includes between 62,073 to 225,423 square feet of neighborhood commercial, with and without the Neighborhood Commercial Overlay, respectively. Using an employment generation factor of one employee per 500 square feet of commercial retail building space,¹ the Project would generate a range of approximately 124 full time employees to 451 full time employees.

The General Plan was adopted in 2006 and did not anticipate the amount of housing and commercial uses proposed by the Harmony Specific Plan. However, the Project contains a General Plan Amendment that would reflect the density proposed as part of the Project. Subsequent to the adoption of the General Plan, the Southern California Association of Governments (SCAG) began the process of updating their regional transportation plan (RTP) and the new planning process of incorporating a "sustainable communities strategy" (SCS) pursuant to SB 375. As part of this process, regional growth forecasts are developed in collaboration with local jurisdictions. The City of Highland included the development of the Harmony Specific Plan in the data provided to SCAG. Therefore, the Project's population growth has been planned for and evaluated within other regional plans. Further, as discussed in Section 5.7, Greenhouse Gas Emissions, the Project is consistent with the SCAG RTP/SCS. Because the Project would not directly induce substantial growth beyond what was previously planned for in regional plans such as the RTP/SCS, and because the Project includes an amendment to the General Plan, the impact is considered less than significant.

¹ Based on the Riverside County General Plan Appendix E: Socioeconomic Buildout Projection Assumptions & Methodology

Indirectly, the Project will extend roadways, water and sewer service, and other utilities (infrastructure) into the Project site. As the Project site is on the eastern most end of the City's jurisdiction and site is designated for Planned Development, extension of these facilities within the Project site would not indirectly induce substantial population growth. Additionally, the areas to the south and south west of the site are already developed with homes and agricultural uses and areas to the north are bordered by the San Bernardino National Forest. Therefore, the Project will not directly or indirectly induce substantial population growth beyond that envisioned in the General Plan, the impact is considered **less than significant and no mitigation is required**.

Threshold: *Would the proposed Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

As discussed earlier, the Project site is vacant and consists of abandoned orchards and an area which was used as a borrow site to build the Seven Oaks Dam. Therefore, the Project will not displace any housing and there will be **no impacts** in this regard.

Threshold: *Would the proposed Project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

Because the current condition of the Project site is vacant and does not contain any housing, implementation of the Project will not displace people or housing. There will be **no impact** in this regard.

5.13.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Impacts to population/housing are less than significant and thus no mitigation measures are required.

5.13.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The Project would not induce substantial population growth in an area, either directly or indirectly, nor would the Project displace existing homes. Therefore, the Project will not result in significant impacts related to population or housing and impacts are considered **less than significant**.

5.13.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The geographic scope for population and housing is the City. Since the Project was included in regional growth projections, the associated Project population growth is not considered cumulatively considerable and is **less than significant**.

5.13.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

2012 Draft Housing Element	City of Highland, <i>Draft 2014-2021 Housing Element, (5th Cycle)</i> , 2012. (Available at http://www.ci.highland.ca.us/Downloads/Files/DraftHousingElement/Draft_Housing_Element.pdf , accessed June 7, 2013.)
GP	City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed September 17, 2012.)
GP EIR	City of Highland, <i>General Plan Update Draft EIR, September 2005</i> . (Available at the City of Highland.)
SCAG	Southern California Association of Governments, <i>2012-2035 Regional Transportation Plan/Sustainable Communities Strategy Growth Forecast Appendix</i> , April 2012. (Available at http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx , accessed January 2014.)

5.14 Public Services

This section evaluates the potential impacts from the proposed Project on public services including fire protection/emergency medical services, police protection, school services, and library services. Park services are addressed in Section 5.15 (Recreation). Public and private utilities and service systems, including water, wastewater, and solid waste services and systems are addressed in Section 5.17 (Utilities and Service Systems).

The following discussion of potential impacts to fire protection is based on the *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection Planning for the Greenspot Development* prepared by Hunt Research Corporation (Hunt(a)), September 7, 2011 and the *Conceptual Fire Protection Plan* prepared by Hunt Research Corporation (Hunt(b)) in January 2014 and included as Appendix H.1 and H.3 of this DEIR, respectively. The following discussion of potential impacts to schools is based on the *Assessment of Schools Issues for Project Review for the City of Highland* prepared by Jeanette C. Justus Associates (JJA), August 3, 2011 and included as Appendix L of this DEIR.

5.14.1 Setting

5.14.1.1 Fire Protection and Emergency Medical Services

The California Department of Forestry and Fire Protection (Cal Fire) currently provides fire protection and emergency medical services to the City. These services are provided by Cal Fire through a cooperative agreement between the City and the State, which provides for Cal Fire employees to staff City-owned facilities and apparatus.

The City also has available fire protection services from other area agencies through automatic aid agreements with the cities of Redlands and Yucaipa, Cal Fire and the U.S. Forest Service. The U.S. Forest Service provides fire protection in National Forest lands within the City. Automatic aid agreements provide for simultaneous responses from the closest resources on the initial report of emergencies. The City also participates in the Statewide Master Mutual Aid Agreement which provides additional assistance from San Bernardino City and County Fire Departments, the San Manuel Fire Department and fire departments throughout California. Mutual aid agreements provide assistance from jurisdictions throughout the state when an incident is beyond the capabilities within the City. (GP, p. 4-22).

With respect to fire protection for the Project site, a *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection Planning for the Greenspot Development* and *Conceptual Fire Protection Plan* was prepared for the Project (Appendix H.1 and H.3) which outlines outstanding issues relating to fire protection planning for the Project and the Project site. This Plan determined the locations of the existing fire stations that are closest to the Project site and estimated their respective distances and travel times to the Project site. **Table 5-14-A – Fire Station Locations and Emergency Response** below indicates the fire stations closest to the Project site, their equipment and staffing, the estimated mileage to the entrance of the Project site, and the estimated travel times to the entrance of the Project site at the end of Newport Avenue. The locations of these facilities are shown in **Figure 5.14-1 – Local Fire and Police Stations**.

Table 5-14-A – Fire Station Locations and Emergency Response

Fire Station	Location	Staffing/Apparatus	Approximate mileage to Project site Entrance	Approximate travel time at 35 MPH	Automatic response or require request from Highlands FD (mutual aid)
Highland Station 2 (closest City station)	Baseline east of Weaver	One Type 1 structural fire engine, 3 firefighters Cal Fire	7 miles	10 minutes per driving test.	
Highland Station 1 (next closest City station)	Baseline and Central	Type 111 Engine (non-medic), reserve squad truck, and 3 firefighters plus reserves	9.5 miles	16 minutes (subject to actual driving test)	
Highland Station 3	7649 Sterling Ave	Type 1 engine and 3 firefighters (medic)	11.5 miles	20 minutes (subject to actual driving test)	
San Bernardino County station 9 Mentone. 909-387-5974	Hwy 38 and Crafton	One type 1 engine, 1 type 111 brush fire engine, and 3 firefighters plus a paid call person	2 miles	6 minutes per driving test	Mutual Aid.
U. S. Forest Service (USFS) Mill Creek.	Hwy 38 and Bryant	Varies based on time of year. In fire season; 1 type 111 engine, 1 hand crew, 1 water tender and a total of 17 firefighters ((during day only)	3.5 miles	6 minutes	Mutual Aid
Yucaipa station #1. 909-795-3048	Oak Glen and Bryant	One type 1 engine, and one type 111 engine during fire season; 3-4 firefighters	7 miles	12 minutes	Mutual Aid
Redlands City station 3	Pennsylvania and Orange	One engine company	7 miles	12 minutes	Mutual aid
Redlands City Station 1	525 E Citrus	Aerial ladder truck	8 miles	14 minutes	Automatic aid
San Manual Indian reservation	Reservation; 26540 Indian Service road	Aerial ladder truck; 4 firefighters	11 miles	19 minutes	Automatic dispatch

Source: Hunt(b), p. 26

Response Times Standard

Within the City the average response time is seven and one-half minutes. Calls for medical aid are the most common calls, constituting approximately 77 percent of all service calls. (GP EIR, p.5.13-1) The General Plan calls for an endeavor to achieve a response time of not more than four minutes, 90 percent of the time. The fire department follows the National Fire Protection Association (NFPA) time objectives under NFPA 1710 Chapter 4.1.2.1.1 which are as follows:

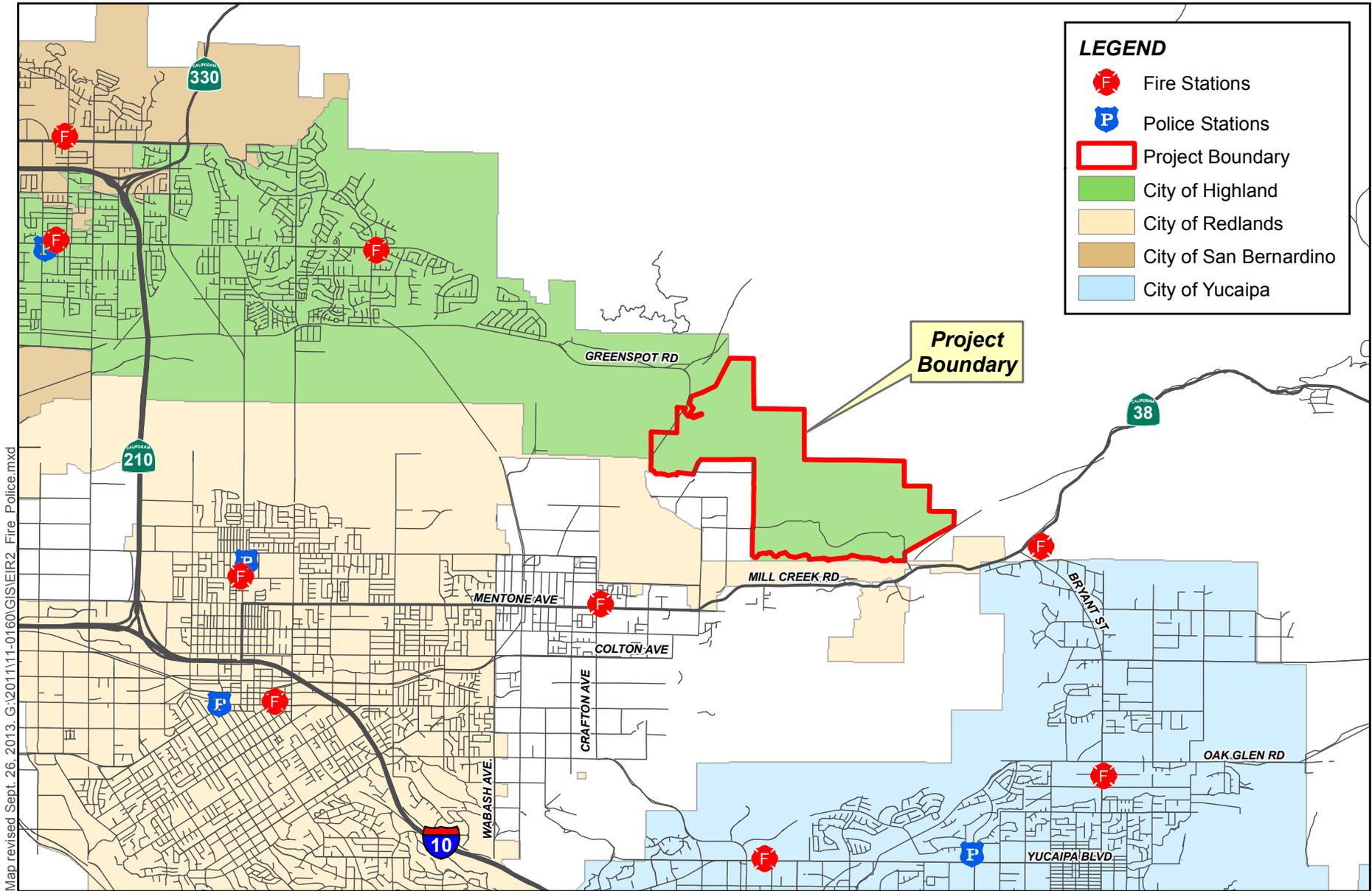
- 1) One minute (60 seconds) for turnout time.
- 2) Four minutes (240 seconds) or less for the arrival of the first arriving company at a fire suppression incident and/or eight minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident.
- 3) Four minutes (240 seconds) or less for the arrival of a unit with first responder or higher level capability at an emergency medical incident.
- 4) Eight minutes (480 seconds) or less for the arrival of an advanced life support unit at an emergency medical incident, where this service is provided by the fire department.

5.14.1.2 Police Services

The City contracts with the San Bernardino County Sheriff's Department for its law enforcement and police protection services. The Sheriff's Department has one patrol station in the City, located at 26985 East Base Line (as shown in **Figure 5.14-1 – Local Fire and Police Stations**). The Sheriff station is located approximately 8.6 miles from the approximate center of the Project site. As a contract station, its personnel and community have access to several resources offered by the Sheriff's Department, such as Narcotics, Special Weapons Attack Team (SWAT), Arson-Bomb, Crimes Against Children, Homicide, Specialized Investigation Division (SID) and more, if necessary. The City of Highland also operates under mutual aid agreements with the City of San Bernardino and San Bernardino County. (GP, pp. 4-20-4-21).

The Sheriff's station is currently staffed with 31 sworn officers, including 1 Captain, 1 Lieutenant, 5 Sergeants, 2 Detectives, and 22 patrol Deputies. There are also several non-sworn civilian employees, including 1 secretary, 2 Sheriff's Service Specialists, and 1 motor pool assistant (SBC-SCD).

The Highland Station is traditionally one of the busiest stations in the County, in terms of the ratio of safety personnel to population, calls for service, and arrests per deputy. According to the San Bernardino County Sheriff's Department 2010 Annual Report, the service ratio is 2,386 residents per deputy or 0.42 officers per 1,000 residents (SBCSD p. 6). The City of Highland General Plan EIR explains that the City's desired service level is 0.7 officers per 1,000 people (GP EIR, p. 5.13-9). The City's desired average emergency response time in their General Plan calls for a four-minute average response time for emergency calls within the City (GP, p.4-5).



Map revised Sept. 26, 2013. G:\2011\11-01\60\GIS\EIR2_Fire_Police.mxd

Sources: County of San Bernardino ISD, 2011; Thomas Guide, 2008; City of Highland General Plan, Figure 4-1, General City Facilities



Figure 5.14-1 - Local Fire and Police Stations
Harmony Specific Plan Draft EIR

5.14.1.3 Schools

An *Assessment of School Issues* was prepared for the Project (Appendix L), which analyzes the existing conditions of the area surrounding the Project site and estimates school impacts at each grade level as a result of the Project. A summary of the *Assessment of School Issues* that was prepared for the Project is utilized in the following discussion.

Two public school districts serve the City of Highland: San Bernardino City Unified School District (SBCUSD) and Redlands Unified School District (RUSD). SBCUSD and RUSD provide K–12 educational facilities and programs. The SBCUSD generally covers the area of Highland west of City Creek (or Boulder Avenue), and RUSD generally covers the portion of Highland east of City Creek (or Boulder Avenue). Therefore, the Project site is within the boundaries of the RUSD. RUSD serves 20,860 students in grades Kindergarten (K) through twelve and operates fifteen (15) elementary (grades K-5), four (4) middle/intermediate (grades 6-8), three (3) comprehensive high schools (grades 9-12), a continuation high school and a secondary level charter schools.

The Project is located within the Mentone Elementary and Cram Elementary schools' attendance boundaries. Mentone Elementary is located 3.0 miles away from the Project at 1320 Crafton Avenue, Mentone, CA 92359. Cram Elementary is approximately 7.3 miles away, located at 9700 Water Street, Highland, CA 92346. Moore and Beattie Middle Schools serve the Project area. Moore Middle School is located about 5.8 miles away from the Project at 1550 East Highland Avenue, Redlands, CA 92374. Beattie Middle School is approximately 8 miles away, located at 7800 Orange Street, Highland, CA 92373. The Project is in the Redlands East Valley High School attendance area. The school is located about 3.9 miles from the Project at 31000 E Colton Ave, Redlands, California 92374. Although the Project is located outside of its attendance area, Citrus Valley High School serves Beattie Middle School. Citrus Valley High School is the latest secondary school to open in the District since 2009. The location of the school facilities are shown in **Figure 5.14-2 – Local Schools**.

Over the past ten years, RUSD's enrollment has grown 8% with the most significant growth at the high school level (20% respectively). Over the last five years, since 2006-07, the RUSD elementary school enrollment has remained stable, declining approximately 1%. The middle schools' enrollment has declined 2%. No significant changes took place at the elementary and high school levels with a change of less than half of 1%. RUSD's birth data illustrates that the District can expect stable enrollment in the near future. Between 2005 and 2009, the number of births has remained stable with an increase of 9% from 2005 to 2006 and the same level of decline between 2008 and 2009. Unless the trend of decline continues, RUSD enrollment should not experience significant changes within the existing communities. New residential development will support healthy growth. Mentone Elementary declined during the past five years (2006-2011) by 14% and has an enrollment of 446 students. Enrollment at Cram Elementary, however, has remained stable, growing approximately 1% to 661 students. Moore Middle School has declined 6% from 1,225 students to 1,155 students. Beattie Middle School enrollment has remained stable growing a little over 1% to an enrollment of 1,295. Redlands East Valley High School has declined 28% and has an enrollment of 2,641 students. The likely explanation for this sharp decline is the opening of Citrus Valley High School in 2009. RUSD operates schools with an average elementary school enrollment of 594 students, an average middle school of 1,199 students and an average high

school of 2,386. Typically, districts in Southern California, especially growing districts, have schools sized with 700-800 elementary students, 1,000-1,250 middle school students, and 2,000+ high school students. Larger schools tend to be more operationally efficient or academically beneficial because smaller schools may not be able to offer a variety of academic programs. Cram Elementary school, Beattie Middle School, and Redlands East Valley High School have enrollments that exceed RUSD’s average school enrollments. According to the Office of Public School Construction (OPSC), the District is planning to construct 104 classrooms at Citrus Valley High school, which, once completed, can potentially house approximately 2,808 students.

Based on classroom counts provided by RUSD and the state loading standards, the *Assessment of School Issues* prepared for the Project (Appendix L) calculated capacities at schools district-wide. The district-wide capacity is shown in **Table 5.14-B – District-wide Capacity Versus Enrollment**.

Table 5.14-B – District-wide Capacity Versus Enrollment

Grade Level	Capacity	Enrollment	Available Capacity
K-5	10,180	8,905	1,275
6-8	5,616	4,797	819
9-12	10,002	7,158	2,844
K-12	25,798	20,860	4,594

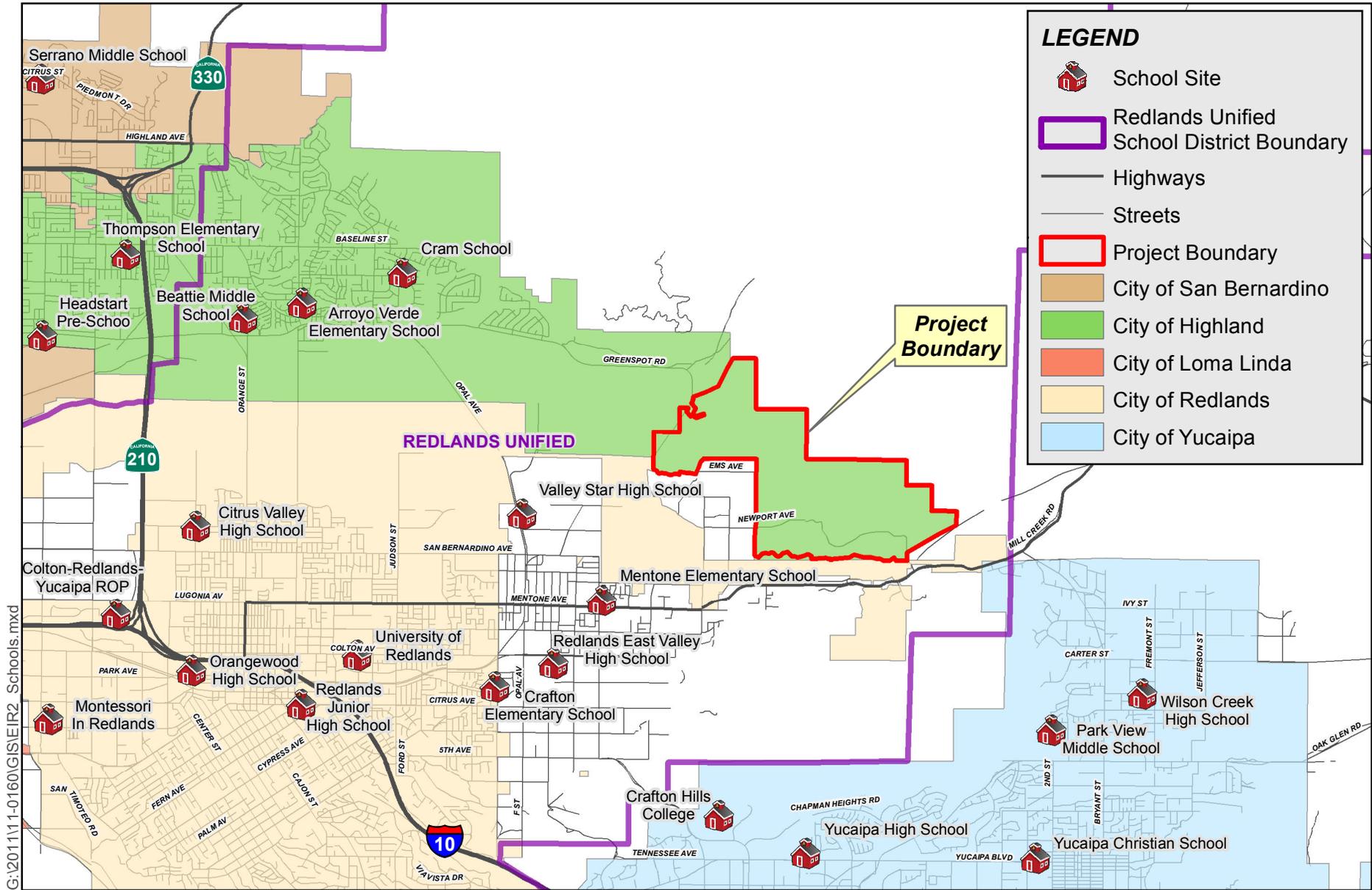
Source: JJA, p. 10

Similar calculations were used to determine capacity at the schools nearest to the Project. As shown in **Table 5.14-C – Capacity Versus Enrollment at Closest Schools**, there are available seats at the elementary and high school levels, however, no capacity is available at the middle schools nearest to the Project. Both Moore and Beattie Middle Schools are operating at over-capacity by 58 and 239 students, respectively. Mentone and Cram Elementary Schools have available capacities of 120 and 63 students respectively and Redlands East Valley High School has an available capacity of 392 students. (JJA, pp. 9-11)

Table 5.14-C – Capacity Versus Enrollment at Closest Schools

Schools	Capacity	Enrollment	Available Capacity
K-5			
Mentone	605	446	120
Cram	730	661	63
Subtotal	1,335	1,107	183
6-8			
Moore	1,107	1,155	(58)
Beattie	1,053	1,295	(239)
Subtotal	2,160	2,450	(297)
9-12			
Redland East Valley	3,441	2,641	392
Subtotal	3,441	2,641	392

Source: JJA, p. 11



Sources: County of San Bernardino ISD, 2011; Thomas Guide, 2008; Google Earth, 2011; City of Highland General Plan, Figure 4-3, School Facilities



Figure 5.14-2 - Local Schools
Harmony Specific Plan Draft EIR

5.14.1.4 Libraries

Library services are provided by the San Bernardino County Libraries system. The Sam J. Racadio Library and Environmental Learning Center serves as the Highland branch of the San Bernardino County Library system and is located at 7863 Central Avenue in the City of Highland. The library opened in June of 2008 and replaced the old Highland Branch Library. It measures approximately 30,000 square feet and houses approximately 128,000 items, two group study rooms, 100 computers, a quiet room, a 100 seat meeting room, conference rooms, a computer lab, and two individual tutoring study rooms. In addition to the library, it also features an environmental learning center, which provides education and materials on environmental issues. The building is seeking to meet or exceed the certification requirements established by the U.S. Green Building Council's Leadership in Energy and Environmental Design Program. Some features of the library include a 15,000-square-foot rooftop garden, an exhibit hall with a solid waste management theme, a children's play area with computers and live animal exhibits, an interior courtyard and community room. Furthermore, the library also provides various programmatic features. Because the City library and the San Bernardino County Library system are part of the Inland Valley Library System, residents can use any of the City or county libraries within county boundaries. (CSL)

5.14.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts to public services may be considered potentially significant if the Project would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - Fire protection;
 - Police protection;
 - Schools;
 - Parks; and/or
 - Other public facilities.

Potential Project impacts related to parks is discussed in Section 5.15, Recreation, of this DEIR.

5.14.3 Related Regulations

5.14.3.1 Federal

No federal regulations would be applicable to public services with respect to the proposed Project.

5.14.3.2 State

California Department of Forestry and Fire Protection (Cal Fire)

The California Department of Forestry and Fire Protection (Cal Fire) is dedicated to the fire protection and stewardship of over 31 million acres of California's privately owned wildlands. The Office of the State Fire Marshal (OSFM) supports the Cal Fire mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The OSFM provides for fire prevention by enforcing fire-related laws in state-owned or operated buildings, investigating arson fires in California, licensing those who inspect and service fire protection systems, approving fireworks as safe and sane for use in California, regulating the use of chemical flame retardants, evaluating building materials against fire safety standards, regulating hazardous liquid pipelines, and tracking incident statistics for local and state government emergency response agencies.

California Fire Plan

The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the Cal Fire.

California Fire Code

The California Fire Code (Title 24, Part 9) is based on the 2000 Uniform Fire Code and includes amendments from the State of California fully integrated into the code. The California Fire Code contains fire safety related building standards referenced in other parts of Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code.

California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (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 2010 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 various aspects of the design and construction buildings.

For clarification, the City of Highland has adopted the CBC and the International Building Code (IBC) with respect to overall and/or specific building code issues. For purposes of this DEIR, when the terms UBC, CBC, and IBC, are used in the text, it refers to the current building code that is adopted by the City at the time of project development for the particular issue/regulation being referenced in the DEIR.

Senate Bill 50

Senate Bill 50 (SB 50), which passed in 1998, provided a comprehensive school facilities financing and reform program and enabled a bond issue to be placed on the ballot. The provisions of SB 50 allowed the state to offer funding to school districts to acquire school sites, construct new school facilities, and modernize existing school facilities. SB 50 also established a process for determining the amount of fees

developers may be charged to mitigate the impact of development on school facilities. Under this legislation, a school district could charge fees above the statutory cap only under specified conditions, and then only up to the amount of funds that the district would be eligible to receive from the state. According to Government Code Section 65995, the development fees authorized by SB 50 are deemed to be “full and complete school facilities mitigation.” SB 50 provides that a state or local agency may not deny or refuse to approve the planning, use or development of real property on the basis of a developer’s refusal to provide mitigation in amounts in excess of that established by SB 50. SB 50 established three levels of Developer Fees that may be imposed upon new development by the governing board of a school district depending upon certain conditions within a district. These three levels are described as follow:

Level 1: Level 1 fees are the base statutory fees. These pre-determined amounts are the maximum that can be legally imposed upon new construction projects by a school district unless the district qualifies for a higher level of funding.

Pursuant to the California Government Code Section 65995, as of January 2014, the statutory maximum Level 1 school fees that may be levied by a school district on new development is a maximum of \$3.36 per assessable square foot of residential construction and a maximum of \$0.54 per square foot of enclosed and covered space for commercial/industrial development.¹ These rates are established by the State Allocation Board (SAB), and may be increased to adjust for inflation based upon a statewide cost index for Class B construction. RUSD has updated their Level 1 fees in July 2010 to implement \$2.97 per sq ft. Total school fees generated by residential development within the Project are estimated to be \$27.6 million.²

Level 2: Level 2 fees allow the school district to impose developer fees above the statutory level, up to 50 percent of new school construction costs. To implement Level 2 fees, the governing board of the school district must adopt a School Facilities Needs Analysis (SFNA) as well as meet other pre-requisites in accordance with Government Code section 65995.6. RUSD does not exact Level 2 fees.

Level 3: Level 3 fees apply if the state runs out of bond funds, allowing the school district to impose 100 percent of the cost of the school facility or mitigation minus any local dedicated school moneys. If the state runs out of bond funds and can no longer finance construction of new school capacity, RUSD would not be eligible to charge Level 3 fees at this time.

¹ The Office of Public School Construction defines Class B construction as buildings constructed primarily of reinforced concrete, steel frames, concrete floors, and roofs.

² Calculation based on average square footage assumptions (average SFD unit 2,700 sq. ft. and average SFA unit of 1,500 sq. ft. provided by Lewis Operating Corps, May 2011.

5.14.3.3 Local Fire Protection

City of Highland General Plan

The following goal, policies, and programs from the Public Services and Facilities Element and the Conservation and Open Space Element of the City's General Plan promote and ensure the adequate provision of staffing, equipment, and facilities to support effective fire protection and emergency medical services that keep pace with growth in the City.

Public Services and Facilities Element

Goal 4.8 – Ensure the provision of adequate staffing, equipment, and facilities to support effective fire protection and emergency medical services that keep pace with growth.

- **Policy 1.** Work with the fire department to ensure that response time standards and a high level of service are maintained.
- **Policy 2.** Ensure the City has adequate fire training facilities, equipment, and programs for firefighters and inspection personnel, and education programs for the general public.
- **Policy 3.** Coordinate and cooperate with the East Valley Water District to maintain and/or upgrade water facilities to ensure adequate water supply is available for fire suppression operations.
- **Policy 4.** Ensure the availability of adequate fire flow prior to the recordation of residential tracts or parcel maps and prior to the issuance of commercial building permits by requiring the testing of all fire hydrants in the vicinity of the project at the applicant's expense. In the absence of adequate flow, require either the installation of on-site fire protection devices or improvements that upgrade the area's water system to accommodate an adequate flow.
- **Policy 5 (page 4-23).** Ensure that development in Fire Hazard Zones comply with adequate fire safety standards (e.g., fuel modification zones, perimeter roads, greenbelts, etc.).

Conservation and Open Space Element

Goal 6.5 – Protect life and property from wildland–urban interface fires.

- **Policy 1.** Review the vulnerability of new development in areas with the potential for wildland-urban interface fires and incorporate appropriate mitigation measures in the conditions of approval.
- **Policy 2.** Ensure the adequate protection of proposed and existing development in areas subject to wildland-urban interface fires and balance the need for fire prevention measures with the need to preserve significant biological resources.
- **Policy 3.** In areas designated as Fire Hazard Zone I and Fire Hazard Zone II, and as set forth in the Municipal Code, continue to incorporate additional fire safety standards, such as:
 - Secondary or alternative access for all new development in a fire safety review area;

- Increased setbacks from fuel modification areas and fire hazard areas;
- Perimeter roads adjacent to development; or
- Maintained fuel modification zones.
- **Policy 4.** Prepare, develop, and distribute public information on the prevention of urban and wildland fires.
- **Policy 5.** Continue to update the fire department five-year plan to identify fire hazards and risks, and ensure present and future fire protection needs.
- **Policy 6.** Continue efforts to develop and maintain public fire prevention education and hazard abatement, in cooperation with other appropriate agencies.
- **Policy 7.** Enforce the Fire Sprinkler ordinance for all newly constructed buildings.
- **Policy 8.** Require all development to meet the emergency water service standards established by the East Valley Water District.
- **Policy 9.** Encourage the use of fire proof construction materials.

City of Highland Municipal Code

Section 2.48.010 (Purpose, Intent and Findings). The purpose of this chapter is to impose and collect a fire mitigation fee on all new residential, nonresidential and mobile home development within the City, which fee is imposed for the sole purpose of raising revenues aimed at increasing levels of fire and emergency medical services protection, based on the following findings:

- The continued construction of new residential, nonresidential and commercial and industrial buildings, with the attendant increase in population of the City and increased demand on existing fire and emergency medical services facilities, has affected the adequacy and availability of fire and emergency medical services protection within the City and has created an urgent need for the acquisition, improvement and expansion of those essential services.
- This needed expansion of services includes construction of new fire houses and purchase of new equipment necessary in order to maintain the existing quality of fire protection and medical emergency services to the rapidly expanding City, and to preserve the public health, safety and general welfare.
- It is appropriate that new construction pay its fair share of the additional cost of maintaining emergency fire and emergency medical services and attendant facilities.
- The City Council has held public meetings and a noticed public hearing relating to the necessity of raising and increasing City revenues for the purpose of ensuring adequate fire and emergency medical services protection to the residents of the City.
- The most practical and equitable method of raising the revenues necessary to ensure adequate fire and emergency medical services protection to the City is to impose a fire and emergency medical services mitigation fee upon new construction within the City. (Ord. 24 § 1, 1988)

Section 2.48.050 (Fire Mitigation and Emergency medical Services Fees Fund Established)

- Sums collected under this chapter may be expended for the acquisition or construction of new fire and emergency medical services facilities or structures owned by the City, for the improvement or expansion of existing fire and emergency medical services facilities or structures owned by the City, or for the acquisition of new equipment and maintenance of fire fighting and emergency medical services equipment owned by the City; provided that such expenditure from the fund has been authorized by the City council.

City of Highland Municipal Ordinance No. 309 – Development Impact Fees

The City of Highland has adopted a comprehensive system of Development Impact Fees and assesses a Fire Suppression Facilities, Vehicles, and Equipment Development Impact Fee on new construction³ as follows:

- \$836.66 per detached dwelling unit
- \$271.54 per attached dwelling unit
- \$877.27 per mobile home
- \$1,329.83 per commercial lodging unit
- \$0.203 per gross square foot of commercial/office space
- \$0.044 per gross square foot of industrial space

Ordinance No. 309 contains a provision for an annual adjustment of this impact fee based on changes in the California Construction Code. The DIF was amended by Resolution No. 2014-002; adopted by the City Council on January 14, 2014.

Police Protection

City of Highland General Plan

The following goal, policies and programs of the Public Services and Facilities Element of the City's General Plan promote and ensure the provision of adequate law enforcement and police protection services and facilities.

Goal 4.7 – Ensure the provision of adequate law enforcement and police protection services and facilities.

- **Policy 1.** Ensure that police services, response times, equipment, and the number of police personnel keep pace with growth and the changing needs of the community.
- **Policy 2.** Maintain and expand crime prevention and other public education programs.
- **Policy 3.** Encourage the use of urban design strategies to help prevent crime, when feasible.
- **Policy 4.** Ensure law enforcement services are involved in the development review

³ Development impacts are also assessed for Building Expansions, except for the first 499 square feet of a residential building expansion.

City of Highland Municipal Ordinance No. 309 – Development Impact Fees

The City of Highland assesses a Law Enforcement Facilities Impact Fee for new construction and/or new improvements as follows:

- \$235.56 per detached dwelling unit
- \$372.51 per attached dwelling unit
- \$201.90 per mobile home
- \$156.67 per commercial lodging unit
- \$0.136 per square foot of commercial/office space
- \$0.007 per square foot of industrial space

Ordinance No. 309 contains a provision for an annual adjustment of this impact fee based on changes in the California Construction Code. The DIF was amended by Resolution No. 2014-002; adopted by the City Council on January 14, 2014

Schools

City of Highland General Plan

Goals, policies, and programs outlined in the Public Services and Facilities Element of the City's General Plan related to school services include:

Goal 4.9 – Maintain cooperative school and public facility planning to ensure the provision of adequate school facilities and quality educational programs in a manner consistent with other City goals and policies on facility location, use, timing, funding, recreational, and social joint use programs.

- **Policy 1.** Continue to coordinate with local school districts on resolving issues such as joint use facilities, new facility locations, and alternative use of vacant or underutilized sites in the City.
- **Policy 2.** Require new development provide the necessary funding and/or resources to establish school facilities commensurate with the impact of development on school services. In cases where existing school capacity does not support new development, require the implementation of appropriate funding mechanisms, as permitted by law, to ensure the availability of adequate school facilities. Potential financing avenues include:
 - A contract with the developer to provide funds for schools
 - Land dedications
 - Lease back turnkey program
 - Special assessment district financing, such as Mello-Roos Community Facilities Districts, for the proposed area of development
- **Policy 3.** Encourage all school impact fees collected from development projects in the City be allocated toward the acquisition of land and construction of schools that serve the residents of those projects.

- **Policy 4.** Continue to coordinate development activity with local school districts by:
 - Participating with local school districts in joint planning efforts;
 - Establishing a joint task force comprised of representatives from the City, school district, and development community to identify additional means of funding school construction;
 - Notifying school districts of proposed development applications early in the review process;
 - Requesting that school districts indicate the level of facilities available to serve development projects requiring discretionary review; and
 - Establishing a clear methodology for determining the impacts of development on the school facilities in the City.
- **Policy 5.** Continue to work with local school districts to prepare a Master Plan of Schools that outlines specific sites needed to meet the future demand for school facilities.
- **Policy 6.** Explore the possibility of locating a major institution of higher learning in Highland.

Other– Libraries

City of Highland Municipal Ordinance No. 309 – Development Impact Fees

The City of Highland assesses a Library Facilities and Collection Impact Fee as follows:

- \$960.81 per detached dwelling unit
- \$924.84 per attached dwelling unit
- \$661.43 per mobile home

Ordinance No. 309 contains a provision for an annual adjustment of this impact fee based on changes in the California Construction Code. The DIF was amended by Resolution No. 2014-002; adopted by the City Council on January 14, 2014

5.14.4 Project Design Features

Design features refer to ways in which the proposed Project will reduce or avoid potential impacts to public services through the design of the Project. Design Features relating to fire protection, police services, schools and library services are discussed below.

The Harmony Specific Plan provides for the development of one elementary school on an 8.3-acre site in Planning Area 19A. The elementary school site is adjacent to a 5.0-acre joint-use neighborhood park at the center of the community to ensure equitable access for all Harmony residents. The elementary school will be accessible by pedestrians and bicyclists via the proposed multipurpose trail network. If the site is acceptable to RUSD, the developer will participate with RUSD in the planning of a school facility at this site. In the event that the site is not accepted by RUSD within ten (10) years after the adoption of

the Harmony Specific Plan, the site shall automatically become available for development of residential uses. (HSP, p. 5-6)

In addition, the Specific Plan also identifies a 1.5-acre site for the development of a new fire station to meet emergency response and fire suppression demand in the Project area. The site has been located to serve the entire community as well as provide emerging back-up service to nearby rural areas.

There is also a *Conceptual Fire Protection Plan* for the Project, which is required by the City of Highland. The purpose of the plan is to evaluate the vegetation fire risk, potential structure fire risk, fire department response times, and to recommend mitigation in order to provide a reasonable level of fire protection. The Plan also includes a fire risk assessment, fire spread models, Fire Station location recommendations for Field Modification around structures and roads.

The *Conceptual Fire Protection Plan* requires a 200-foot Fire Protection Zone on the northwest, north, northeast, and east perimeter exposures, as well as any slopes with a grade of 10 percent or more, and a 150-foot zone on the west, southwest, south, and southeast perimeter exposures and any slopes in those areas with a grade of 10 percent or more. The first 100 feet of a fuel modification area must be irrigated, and plantings must be selected from the master plant palette fuel modification list. Each lot within the Project boundary shall have a Fuel Modification Zone, also referred to as Vegetation Management Zones. Developers, the Home Owners Association (HOA), contractors and homeowners for all structures are required to submit detailed fuel modification zone location plans, landscape plans and vegetation management plans to the Fire Marshall for approval prior to construction and demonstrate compliance with this plan and Fire Department requirements.

5.14.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, or other public facilities?*

- *Fire Protection and Emergency Medical Services*

Cal Fire provides fire protection and emergency medical services to the City. These services are provided through a cooperative agreement between the City and the State, which provides for Cal Fire employees to staff City-owned facilities and apparatus. The City also has available fire protection services from other area agencies through automatic aid agreements with the cities of Redlands and Yucaipa, Cal Fire and the U.S. Forest Service. The U.S. Forest Service provides fire protection in National Forest lands within the City.

With respect to fire protection for the Project site, a *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection Planning for the Greenspot Development* was prepared for the Project (Appendix H.1), which outlines issues relating to fire protection planning for the Project. The *Conceptual Fire Protection Plan* (Appendix H.3) evaluated the vegetation fire risk, the potential structural fire risk, fire department response times, and

recommended measures to provide a reasonable level of fire protection for the Project. **Table 5.14-A – Fire Station Locations and Emergency Response** located above indicates the fire stations that are closest to the Project site, their equipment and staffing, the estimated mileage to the entrance of the Project site, and the estimated travel times to the entrance of the Project site at the end of Newport Avenue. With the addition of the connection to old Greenspot Road, travel time from fire stations to the south of the development to the area of Planning Area (PA) 49 and PA 2 will be reduced by about one minute (Hunt(b), p 27).

The first alarm response to a vegetation fire consists of the Highland Fire Station 2, two Type 111 brush fire engines from Yucaipa, the Mentone Fire station, and the U.S. Forest Service station if it is staffed (during fire season). It is understood that the Yucaipa stations are automatically dispatched on a vegetation fire, but the Mentone station has to be requested as Mutual Aid by the responding Highland fire crew. Response by Redlands Fire crews would be by a Mutual Aid Request. The typical response to a structural fire would be three Highland fire engine crews, the San Manuel Reservation ladder truck (automatic response), and the Redlands ladder truck if requested. The fire crews from the Mentone Fire Station and the USFS Mill Creek station (if staffed) would currently arrive at a vegetation fire sooner than the Highland crews. (Hunt(b), p. 27)

National Fire Protection Association Standard 1710; “Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments” recommends a response (travel) time of 4 minutes to 90% of all incidents, and the full first alarm response of typically two fire engines and a truck company within eight minutes 90% of all incidents. The City response standard mirrors the NFPA standard for the first arriving fire engine as indicated in the General Plan Public Services and Facilities Element, which states that the goal is a response time of not more than 4 minutes; 90% of the time. The NFPA standard defines response as travel time. (Hunt(b), p. 27)

The *Conceptual Fire Protection Plan* recommends that the Harmony Specific Plan include an on-site fire station with staffing and apparatus due to the excessive response times at existing stations and the fact that fire stations from outside communities should not be depended upon to provide initial response in Highland. As described above in the Project Design Features, the Harmony Specific Plan includes a 1.5-acre site for the development of a new fire station to meet emergency response and fire suppression demand in the Project area.

The response time is a goal and the City of Highland has determined that existing fire stations will provide acceptable service for the Project’s development for the first 999 dwelling units. Because development beyond the first 999 dwelling units cannot be served in an acceptable manner from the existing fire stations, impacts in this regard are potentially significant. A fully-functional interim fire facility, inclusive of the necessary furnishings, shall be constructed prior to the issuance of the 1,000th building permit and the final fire station facility shall be constructed and fully operational (inclusive of necessary furnishings and equipment) prior to the issuance of the 2,000th Certificate of Occupancy or the end of the 3rd year following issuance of the 1,000th building permit, whichever occurs first, unless other functionally-equivalent fire service measures are approved by the City, pursuant to mitigation measures **MM PS 1**.

The City also collects development impact fees for fire suppression facilities, vehicles and equipment. Pursuant to Municipal Ordinance No. 309, the Project would be required to pay development impact fees or receive credits for in-lieu construction or provisions for fire facilities and would generate a range of approximately **\$2,819,550 to \$2,979,457** in development impact fees for fire services from the commercial and residential developments depending on the final development of land uses with or without Neighborhood Commercial Overlay and number of detached and attached homes. The development impact fees for fire services are tabulated in **Table 5.14-D – Fire Impact Fees**, below.

Therefore, with adherence to mitigation measure **MM PS 1** which requires that an interim fire station be constructed and operational prior to the issuance of the 1,000th building permit and a final fire station be constructed and fully operational prior to the issuance of the 2,000th Certificate of Occupancy or the end of the 3rd year following issuance of the 1,000th building permit, whichever occurs first, unless other functionally-equivalent, City-approved fire service measures are completed, and the payment or in-lieu construction credits of City-required development impact fees, potential impacts associated with the provision of fire and emergency medical services would be **less than significant**.

Table 5.14-D – Fire Impact Fees

Land Uses	Minimum Yield	Maximum Yield	Fee Rate	Impact Fees Minimum to Maximum	
Detached Residential	3,272	3,417	\$836.66	\$2,737,551.52	\$2,858,867.22
Attached Residential	195	215	\$271.54	\$52,950.30	\$58,381.10
Commercial	143,095	306,445	\$0.203	\$29,048.29	\$62,208.34
Totals				\$2,819,550.11	\$2,979,456.66

- *Police Services*

The City contracts with the San Bernardino County Sheriff’s Department for its law enforcement and police protection services. Since police services are based upon per capita service levels, the proposed Project will result in an incremental increase in law enforcement services to maintain the required service levels. With a projected population of up to 12,385 people (as calculated in Section 5.13- Population and Housing), approximately 8.7 additional sworn officers (based upon General Plan desired service level of 0.7 officers per 1,000 people) will be needed to serve the Project at build-out. However, the Project will be required to support the financing of new facilities and/or police personnel through the payment of required development impact fees. Pursuant to Municipal Ordinance No. 309, the Project will generate approximately **\$862,853 to \$926,675** in development impact fees for police services from the commercial and residential developments depending on the final development of land uses with or without Neighborhood Commercial Overlay and number of detached and attached homes. The development impact fees for police services are tabulated in **Table 5.14-E – Police Service Impact Fees**, below.

Furthermore, the City’s development review process and building permit plan check processes include review by the City’s Police Department to ensure incorporation of defensible space concepts in site design and construction. In addition to the development impact fees described above, property taxes and other City fees support the City general fund to help offset the cost of additional personnel. Since response time for police service is not based on proximity to the station and since the Highland Sheriff station is located only 8.6 miles from the Project site, no adverse physical impacts associated with the need for, or provision of, new or physically altered police facilities will result from the Project. Therefore, impacts to police protection are considered **less than significant**.

Table 5.14-E – Police Services Impact Fees

Land Use	Minimum Yield	Maximum Yield	Fee Rate	Impact Fees	
				Minimum	Maximum
Detached Residential	3,272	3,417	\$235.56	\$770,752.32	\$804,908.52
Attached Residential	195	215	\$372.51	\$72,639.45	\$80,089.65
Commercial	143,095	306,445	\$0.136	\$19,460.92	\$41,676.52
Totals				\$862,852.69	\$926,674.69

- *Schools.*

The Project will be adding school aged children that will require school services from RUSD. In order to adequately determine the impacts to the surrounding schools, an *Assessment of School Issues* was prepared (Appendix L), which analyzes the existing conditions of the area surrounding Project site and estimates school impacts at each grade level as a result of the Project.

In order to estimate the number of students that will be generated from the Project, a student generation rate (SGR) is used. The SGR is a ratio of students per home, which is usually based on recent construction history or district-wide data. The SGR is usually grouped by product type as it has been recognized that different residential product-types (i.e. single family detached (SFD), single family-attached (SFA), and multiple family (MF) homes) generate students at different rates. SFD units typically generate the highest number of students. Other factors, such as district test scores and reputation, suburban or urban location, size of district and its location in the state all affect the SGR. The SGR is usually prepared by the District staff or district consultants and is used for estimating developer fees and projecting facility and staffing needs overtime. **Table 5.14-D**, below, presents the RUSD Student Generation Rates

Table 5.14-F – RUSD Student Generation Rates

Grade Level	SGR
K-5	0.24
6-8	0.12
9-12	0.16
K-12	0.52

Source: Jeanette C. Justus Associates

Using the Districts SGR, the Project is expected to generate a total of 1,889 students, including 872 K-5 students, 436 students in grades 6-8, and 581 students in grades 9-12. This should be considered a maximum projection of students. SGR for SFA and MF are typically lower than rates for SFD. Approximately, 12% of the product proposed for the Project is SFA, which would have a lower projection of students.

The Project generates a need for a K-5 school and portions of a middle and high school. (JJA p. 13). However, RUSD desires a new middle school facility and is planning to construct one in Loma Linda. This new middle school would free up middle school capacity district wide. Furthermore, the Project proposes to construct an 8-acre elementary school site adjacent to a 5-acre park to address Project needs for new school facilities. The adjacent park will provide an opportunity for joint use facilities.

Furthermore, developers of residential and commercial uses associated with the proposed Project are expected to comply with California Government Code 65995 and pay the school facility fees, as determined by RUSD, prior to construction. Per Section 65996 of the California Government Code, compliance with Section 65995 is “deemed to provide full and complete school facilities mitigation” and, for the purposes of CEQA would, therefore, ensure Project related impacts upon the available school capacity of elementary, middle and high schools serving the Specific Plan area would be **less than significant**.

- *Other-Libraries*

Library services are provided by the San Bernardino County Libraries system. The Sam J. Racadio Library and Environmental Learning Center serves as the Highland branch of the San Bernardino County Library and is located at 7863 Central Avenue in the City of Highland. Because the Project involves residential development, the demand of library services will increase incrementally over time.

To provide adequate service for patrons of the San Bernardino County Library system, the County standard is 0.4 square feet of library space per capita and 1.20 books per capita. The City standard, as stated in the General Plan is 10,000 square feet of library floor space per 36,000 people or approximately 0.28 square feet of library floor space per capita; 18.3 weekly service hours per 10,000 population; and 2.82 books per capita (GP, p. 4-5). Under the County standard, approximately 21,242 square feet of library floor space is required to provide adequate library floor space based on the 2010 population of 53,104 people. Under the City standard, approximately 14,869 square feet of library floor space is required.

The Sam J. Racadio Library and Environmental Learning Center currently provides 0.56 square feet of library floor space per capita, based on the 2010 population of the City (53,104), and on the available library floor space of 30,000 square feet. The facility is operating above service level standards, with a surplus capacity of 8,758 square feet of library floor space under county standards and 15,131 square feet of library floor space under City standards.

While the Sam J. Racadio Library and Environmental Learning Center provides adequate library floor space, the library currently has a shortfall in the number of books. It currently has a ration of 2.41 books per capita based on the existing 128,000 items available. Under the City standard of 2.82 books per capita and existing population of 53,104 approximately 149,753 books are needed to maintain an adequate number of books. Currently, under the City standard, the library has a shortfall of approximately 21,753 books. However, under the County standard of 1.20 books per capita, the library exceeds County standards by approximately 64,276 books

Under County standards, the Project buildout population would require 4,939 square feet of library floor space. This would reduce the existing surplus capacity of the Sam Racadio Library from 8,758 square feet to 4,608 square feet. Under City standards, the Project buildout population would require 3,457 square feet of library floor space and would reduce the existing surplus capacity from 15,131 square feet to 11,674 square feet. For both scenarios, the Sam Racadio Library would still maintain adequate library floor space capacity.

The books per capita standard for the county is 1.20 and 2.82 for the City. The Sam J. Racadio Library and Environmental Learning Center currently has a service ratio of 1.32 books per capita. Under the County standard, Project buildout population of 12,385 would require approximately 14,862 books. This demand would reduce the current surplus of 64,276 books to 49,414. For the City standard, Project buildout population would require approximately 34,926 books. The additional books required to serve the Project buildout population would increase the shortfall of the number of volumes of books from 21,753 to 56,679 books.

In order to reduce impacts associated with additional residents increasing the demand on the local library system, the City has adopted a library development impact fee. The Project will be required to support the financing of library facilities through the payment of required development impact fees. Pursuant to Municipal Ordinance No. 309, the Project will generate approximately **\$3,324,114 to \$3,481,982** in development impact fees for library services from the commercial and residential developments depending on the final development of land uses with or without Neighborhood Commercial Overlay and number of detached and attached homes. The development impact fees for library services are tabulated in **Table 5.14-G**, below.

Through payment of development impact fees for library services, no adverse physical impacts associated with the need for, or provision of, new or physically altered library facilities will result from the Project. Therefore, impacts to library facilities are considered **less than significant**.

Table 5.14-G – Library Services Impact Fees

Land Use	Minimum Yield	Maximum Yield	Fee Rate	Impact Fees	
				Minimum	Maximum
Detached Residential	3,272	3,417	\$960.81	\$3,143,770.32	\$3,283,087.77
Attached Residential	195	215	\$924.84	\$180,343.80	\$198,840.60
Commercial	143,095	306,445	\$0.00	\$0.00	\$0.00
Totals				\$3,324,114.12	\$3,481,928.37

5.14.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce potentially significant adverse impacts to public services.

MM PS 1: To reduce the risks associated with fire response time, the following services shall be implemented:

1. A fully-functional interim fire facility shall be provided at a location that may be different from the final location (subject to the approval of the City), inclusive of the necessary furnishings and equipment such as one ICS Type II fire engine (or functionally equivalent fire engines approved by the City). The interim fire facility shall be constructed and fully functional prior to the issuance of the 1,000th building permit.
2. At the time the interim fire station is opened, the developer would have to reimburse the City for the costs of a Wildland Fire Protection Agreement that the City would enter into with Cal-fire, which includes provision of fire engines, hand crews, bulldozers, fixed and rotor wing aircraft, and overhead personnel to suppress any wildland fire at no additional cost to the City.
3. The final fire station within Planning Area H shall be constructed and fully functional prior to the issuance of the 2,000th Certificate of Occupancy or the end of the 3rd year following the issuance of the 1,000th building permit, whichever occurs first, unless the City approves other functionally-equivalent fire service measures. The fire station size shall be generally equivalent to the size of the City’s Station No. 3 located at 9th Street and Sterling Avenue inclusive of necessary furnishings and equipment; and provide one (1) ICS Type I Fire Engine (or functionally equivalent fire engines approved by the City)– including all necessary equipment; and ensure a long-term funding mechanism is in place to support three (3) fire personnel for one of the Fire Engines seven days a week.

5.14.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

With implementation of mitigation measures **MM PS 1** and the required payment of development impact fees, potential impacts will be **less than significant**.

5.14.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The geographic scope for public services is the City. The proposed Project in conjunction with other anticipated projects in the area will generate the need for more public services, such as fire, police, schools, and libraries. The payment of development impact fees is considered adequate fair share contribution to cumulative impacts associated with development which leads to a determination of less than significant. Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.14.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- CSL California State Library, *New and Renovated Library Openings Around the State*, CSL Connection-A Quarterly Publication of the California State Library, Issue 51, Fall 2008. (Available at <http://www.library.ca.gov/newsletter/2008/2008summer/new.html>, accessed February 21, 2012.)
- GP EIR City of Highland, *General Plan Update Draft EIR*, September 2005 (Available at the City of Highland.)
- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)
- Hunt(a) Hunt Research Corporation, *Summary Memorandum of Findings, Recommendations and Outstanding Issues related to Conceptual Fire Protection planning for the Greenspot Development*, September 7, 2011. (Appendix H.1)
- Hunt(b) Hunt Research Corporation, *Conceptual Fire Protection Plan*, January 2014. (Appendix H.3)
- SBC-SCD San Bernardino County Sheriff Coroner Department, *Highland Webpage*. (Available at <http://www.sbcounty.gov/sheriff/patrol/Highland.asp>, accessed January 22, 2013.)
- JJA Jeanette C. Justus Associates, *Assessment of School Issues for Project Review for the City of Highland*, August 5, 2011. (Appendix L)

5.15 Recreation

This section evaluates the potential impacts from the proposed Project on recreational facilities within the City. The following discussion also addresses the potential for adverse impacts that could result from the construction of additional recreational facilities as a result of the Project.

5.15.1 Setting

5.15.1.1 Existing Recreational Opportunities

A multitude of recreational opportunities are available within the City and in nearby open areas. Open space provides many benefits to the community, including park and recreation areas, recreational trails, conservation of natural and significant resources, buffers between land uses, and the preservation of scenic views. The City has convenient access to several active and passive open space areas. Active recreation areas typically include facilities such as tailored playing surfaces, buildings, parking areas, and similar modifications to a natural site. Passive recreation areas accommodate less-structured recreational pursuits and typically include minor modifications such as trails, service vehicle access improvements, enhanced landscape materials, and similar non-intrusive changes to the site. (GP EIR, p. 5.14-1)

The following are existing recreational open space opportunities available to residents within the City. **Figure 5.15-1 – Existing Parklands**, shows the location of existing parklands within and in the vicinity of the City.

Regional Parks

Regional Parks consist of 100 acres or more and attract users from a service radius of up to an hour's drive. These facilities contain a wide range of amenities from hiking areas, scenic areas, and major sports facilities (GP, p. 5-34). Using this criterion, there are numerous regional facilities available to City residents which are further described below.

- **San Bernardino National Forest (SBNF)**- is located approximately six miles northeast of the City. It is situated in the San Gabriel, San Bernardino, San Jacinto, and Santa Rosa mountains and includes the vacation resort areas of Big Bear Lake, Lake Arrowhead, Mount San Jacinto, and the San Gorgonio Wilderness. The SBNF consists of 500 miles of trails. Elevation in SBNF ranges from 2,000 feet at the valley floor to 11,502 feet atop Mount San Gorgonio. Aside from camping, SBNF provides outdoor activities like hunting, fishing, recreational shooting, hiking, backpacking, mountain biking, horseback riding, and boating in the warmer months; and cross-country skiing, snowboarding, and snowmobiling in the winter months. Also associated with SBNF activities are volunteer organizations and trails associations. The SBNF is managed by the U.S. Department of Agriculture Forest Service. (GP EIR, p. 5.14-6)
- **Silverwood Lake State Recreation Area**- is located adjacent to the SBNF, approximately 10 miles north of Highland. Silverwood Lake was formed by the 249-foot Cedar Springs Dam and, at 3,350 feet, is the highest reservoir in the State Water Project. Activities at Silverwood Lake State Recreation Area include camping, hiking trails, swimming, boating, waterskiing, and fishing.

Silverwood Lake State Recreation Area is managed by the California State Parks Department. (GP EIR, p. 5.14-6)

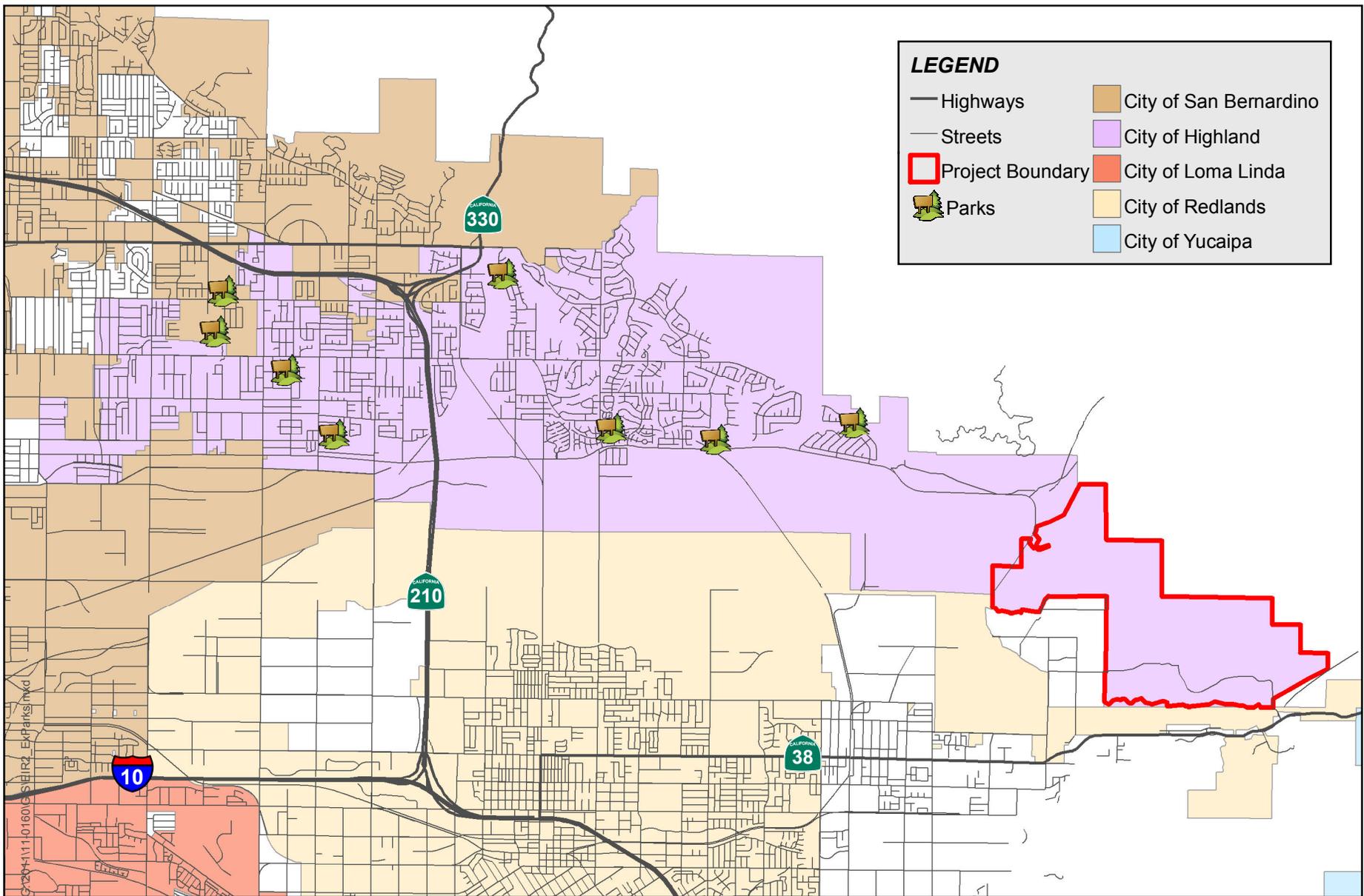
- **Lake Gregory Regional Park**- is located to the north, off of the 210 freeway and State Route 18, in the City of Crestline. The 150-acre park features a lake for fishing, boating, sailing, swimming, and other water activities during summer months; a two-mile hiking trail; horseback riding and picnicking facilities; two volleyball courts, and a lodge for special events rental.
- **Glen Helen Regional Park** is another San Bernardino County Regional Park located in the City of San Bernardino at the northern junction of Interstate 215 and Interstate 15. The 1,350-acre park offers campgrounds, picnic facilities, hiking trails, volleyball courts, softball fields, swimming, fishing, and other water activities. Glen Helen is home to the San Manuel amphitheatre with a seating capacity of 65,000.
- **Yucaipa Regional Park** is located in the City of Yucaipa, approximately 15 miles southwest of Highland. Yucaipa Regional Park consists of 885 acres in the foothills of the San Bernardino Mountains. The park provides volleyball courts, playgrounds, swimming, boating, fishing, campgrounds, and picnic facilities.

Other surrounding regional recreation areas include Lake Perris, Lake Elsinore, Lake Skinner County Park, and Mount San Jacinto State Park. In addition, the recreation facilities of the University of Redlands, the California State University San Bernardino, University of California at Riverside, and Loma Linda University are all located within a half-hour's drive.

Local Parks

There are many types of parks and recreational facilities located within the City. Below is a description of the hierarchy of basic types of parks within the City. (GP, p. 5-33)

- **Mini-Parks:** Often called pocket parks, sub-neighborhood parks or play lots, they serve built-up, urbanized areas and are commonly developed in conjunction with specific plans, planned developments and community centers.
- **Neighborhood Parks:** From 10 to 20 acres, these are walk or bike-to parks located within the neighborhood they serve. They include both active and passive designs and include such facilities as picnic areas, informal fields, tot lots, court games, passive green space and off-street parking. These facilities usually represent a separate property delineated by a fence.
- **Community Parks:** These facilities are 20 to 40 acres with a service radius of 1.5 miles. Their typical amenities include lighted sports fields and courts, picnic facilities, play areas, restrooms, off-street parking, pool and service yards.



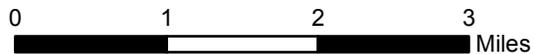
LEGEND

- Highways
- Streets
- Project Boundary
- 🌳 Parks
- City of San Bernardino
- City of Highland
- City of Loma Linda
- City of Redlands
- City of Yucaipa

Sources: County of San Bernardino ISD, 2011;
 Thomas Guide, 2008; Google Earth, 2011;
 City of Highland General Plan, Figure 5-5, Park Service Area

Figure 5.15-1 - Existing Parklands

Harmony Specific Plan Draft EIR



5.15.1.2 Existing Park Supply and Demand

Within the City, the open space ratio established in the City General Plan is 2.5 acres per 1,000 residents, which includes a ratio of 2.0 acres of developed park acreage and 0.5 acre of undeveloped natural parkland. Given a projected general plan build-out population of 69,582, the City should have approximately 143.8 acres of developed park acreage and 36 acres of undeveloped natural parkland, totaling 179 acres based on the standard of 2.5 acres of parkland per 1,000 residents.

Applying the same open space ratio, based upon the existing 2010 census population of 53,104, the City should have approximately 106.2 acres of developed park acreage and 26.5 acres of undeveloped natural parkland, totaling 132.7 acres based on the standard of 2.5 acres of parkland per 1,000 residents.

As shown in **Table 5.15-A – Park/Recreational Facilities within the City of Highland** below, and depicted in **Figure 5.15-1**, the City contains approximately 124.5 acres of parkland within its existing boundaries. Therefore, there exists within the City a shortfall of parkland based upon the 2.5 acres of parkland per 1,000 residents described above for the General Plan build-out scenario and the existing 2010 census population.

Table 5.15-A Park/Recreational Facilities within the City of Highland

Name	Location	Type	Facilities	Size (Acres)
Canyon Oaks	Northerly terminus of Tiara Avenue	Mini Park	Tot lots, open turf area, picnic tables	1.0
Aaurantia Park	29700 Greenspot Road	Neighborhood Park	Tot lots, open turf area, picnic tables, walking trails, dog playground, one acre orange grove	12.0
Highland Community Park	Southeast Corner of Central Avenue and Hibiscus Street	Neighborhood Park	Tot lots, open turf area, picnic tables, walking trails, 4 baseball/softball fields	17.5
Cunningham Park	South of Baseline and west of Cunningham Street	Mini Park	Open turf area, walking trails	2.0
Natural Parkland	Base of the foothill Mountains	Natural Parkland	undeveloped, walking trails	92.0
Total				124.5

Source: Highland GP EIR, p. 5.14-6 and personal communication with City staff.

It should be noted that East Highlands Ranch has 113.6 acres of active recreational space including walking, hiking, or biking trails and 940.3 acres of natural and visual open space for the private use of its residents; however, this parkland is not counted toward the parkland requirements that must be met by the City because it is private. Additionally, it should also be noted that the California Youth Soccer

Association Soccer Complex, a regional recreation facility, is located just outside of the City (north of Base Line and west of Victoria Avenue). (GP, p. 5-47)

5.15.1.3 Other Recreational Opportunities

Private Recreation

East Highlands Ranch facilities are for the private use of its residents. Recreation facilities for these developments consist of 113.6 acres of developed park, including three recreation centers, volleyball courts, softball/ soccer/playfields; pool and passive trail networks; and 940.3 acres of natural parkland. These facilities are accessible only to residents of the East Highlands Ranch. It should be noted that this parkland is not counted toward City's parkland requirements. (GP EIR, p. 5.14-6)

Public Recreation

School facilities also provide areas for active recreation. The City of Highland has a Joint-Use Agreement with the Redlands Unified School District that enables the City to use two public school facilities (Beattie Middle School and Highland Grove Elementary School) for recreational activities. The City also has a "single joint use agreement" with the San Bernardino City Unified School District that allows permitted recreational uses at Thompson and Cypress Elementary Schools. The City of Highland also utilizes the school fields of Arroyo Verde, Lankershim, Warm Springs, and Cram Elementary Schools for public recreation. The total acreage (40 acres of developed parkland) is not included in **Table 5.15-A** because many of these facilities are gated and not accessible to the general public. Although the District has first priority concerning the use of school grounds, the City has access rights to all outdoor space playground equipment, and baseball fields when these facilities are not in use by the District, or after school hours on weekdays, and all day on weekends.

Bicycle Trails

Bicycle trails in the City are designated as Class I, II, or III. Class I bikeways are joint pedestrian and bicycle pathways that are completely separated from vehicular lanes of traffic. Class II bikeways are signed and striped bicycle lanes within the paved section of the street. Class III bike routes are typically identified by signage and are used as transitions or connections to other trails.

Many of the City's bicycle paths are combined with sidewalks along each side of major streets. Cyclists generally use these one-way bike lanes for commuter or longer recreational purposes. Most of the City's arterial streets are sufficiently wide to allow for a four-foot-wide Class II bike lane along the curb. Highland's Class III bikeways are designated but unmarked bike routes on the street within vehicular travel lanes.

Scenic Trails

The County of San Bernardino has designated the following routes as Scenic Trails in the surrounding unincorporated areas:

- **City Creek Trail** is located along City Creek from the creek's terminus at the Santa Ana River towards the north into the SBNF. This trail is used for hiking, biking, and equestrian purposes.

- **Day Creek Trail** is located along Day Creek and follows a north-south route from the base of the San Bernardino Mountains to the Riverside County trail systems.
- **San Bernardino Green Belt Trail** is located within the northern Sphere of Influence (SOI), along the Cajon Creek to the Santa Ana River Trail. This trail provides multiple uses such as hiking, horseback riding, and biking.

East Highlands Ranch Trails

These trails are located in the vicinity of the East Highlands Ranch and the more rural portions of East Highland. An areawide, multipurpose trail system developed under the guidance of the City of Highland utilizes historic trails and provides a circulation system throughout the East Highland area. These trails connect the Santa Ana Wash area to the National Forest and Plunge Creek. Other trails include the Elder Gulch Road, south of Base Line Road, which was abandoned for automobile traffic purposes, and then converted to a multi-use trail. This trail provides pedestrian connections from the Community Center and Lake to Greenspot Road.

Santa Ana River Trail

The Santa Ana River Trail is a developing corridor trail system located south of the city within the Santa Ana River. This regional trail is 110 miles long, extending from the Heart Bar Ranch area in the San Bernardino National Forest to the Pacific Ocean. The trail crosses 33 miles of the SBNF and covers 18 miles within San Bernardino County. About 2 of the 18 miles that lie in San Bernardino County have been paved as bicycle paths and are accessible to Highland. The remaining portion of the trail will be addressed with future funding sources. The eastern portion of the River corridor provides a peaceful, natural setting, which would facilitate high-quality rural and equestrian-oriented development in areas not subject to flooding. This system of trails interconnects with the other regional/local trails within Orange, Riverside and San Bernardino Counties.

Natural Parkland

In 2008 the City acquired approximately 92 acres of natural parkland located at the base of the foothill Mountains. The natural parkland features hiking, biking and open space trails. The City received a state and local grant to install a trail and interpretive signage program that will be completed by April 2013.

5.15.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to recreation may be considered potentially significant if the Project:

- would result 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; or
- includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.15.3 Related Regulations

5.15.3.1 Federal

There are no federal regulations related to Recreation that are applicable to the proposed Project.

5.15.3.2 State

Quimby Act (California Government Code 66477)

This State legislation requires the dedication of land and/or imposes as requirement of fees for park and recreational purposes as a condition of approval of tentative map or parcel map. The Quimby Act establishes procedures that can be utilized by local jurisdictions to provide neighborhood and community parks and recreational facilities and services for new residential subdivisions.

5.15.3.3 Local

City of Highland General Plan

Goals, policies, and programs outlined in the Conservation and Open Space Element of the City's General Plan related to park services includes:

Goal 5.10 – Maintain a high quality system of parks that meet the needs of all segments of the community.

- **Policy 1.** Develop and periodically update a Parks and Recreation Master Plan, with direction from the Planning Commission, Design Review Board and City Council, to identify specific future sites for additional parks and recreational open space.
- **Policy 2.** Supplement existing development fee program for parkland acquisition with other funding sources, grants and programs (fee sponsors, corporate sponsors, fund raising, for example).
- **Policy 4.** Prepare a phased strategy for developing new facilities.
- **Policy 6.** Conduct periodic assessments of park and recreation facilities and services, including user surveys.
- **Policy 7.** Provide handicap access to all parks.
- **Policy 8.** Develop a multi-dimensional recreation program for all citizen groups in Highland including exercise, arts and crafts and cultural enrichment.
- **Policy 9.** Provide a variety of activity options, including active and passive uses, within each park.
- **Policy 10.** Study the desirability of developing “specialty parks” such as skate, dirt bike, fishing and art parks.
- **Policy 11.** Evaluate the facilities and amenities of all City parks as part of the periodic update of the Parks and Recreation Master Plan.
- **Policy 12.** Conduct periodic user surveys on the design of public parks.
- **Policy 13.** Conduct service-area based design charettes with community members on park design.

- **Policy 14.** Give priority to the acquisition of large parcels for the development of Community Parks that accommodate athletic fields.
- **Policy 15.** Encourage design competitions for new and remodeled parks.
- **Policy 16.** Continue to implement the local park ordinance through developer dedication of parkland or in-lieu fees.
- **Policy 17.** Require that new specific plans and planned unit developments (PUDs) incorporate sufficient park and recreation facilities along with natural open space areas, where appropriate, to serve the needs of their future residents.
- **Policy 18.** Given the residential focus in Highland, increase park standard acreage ratios above state required minimums.
- **Policy 19.** Connect newly developed parks, wherever practical, to the existing and future bicycle and recreational trail system.
- **Policy 20.** Initiate a long-term program to correct park deficiencies.
- **Policy 21.** Adopt a density bonus program for development that includes usable park and open space lands above the City-required standard.
- **Policy 22.** Develop recreational opportunities within the Greenspot area.
- **Policy 23.** Design parks in accordance with contemporary safety standards and “CPTED” (Crime Prevention through Environmental Design) principles.
- **Policy 24.** Periodically evaluate parks for safety and maintenance.
- **Policy 25.** Conduct evaluation of park improvements to test for safety compliance, crime prevention and effective maintenance.
- **Policy 26.** Pursue joint public/private development of recreation facilities, especially in areas where joint development would maximize use of existing facilities, as well as add new land to the facility.
- **Policy 27.** Develop and implement a facilities plan that indicates the potential development of recreational facilities, their costs and implementation at selected school sites.
- **Policy 28.** Establish clear policies about the proper community use of school facilities including maintenance, scheduling, fees and regulations.
- **Policy 29.** Locate parks and recreation facilities within convenient walking and biking distance of all neighborhoods.
- **Policy 30.** Integrate park and recreation facilities with existing and future trail and bikeways, wherever practical.
- **Policy 31.** Prepare templates for proper on and off-site signage for all parks.

Goal 5.11 – Provide excellent opportunities and facilities for hiking, equestrian and bicycle use through the Multi-Use Trail Master Plan

- **Policy 1.** Require, where appropriate, that residential, commercial and industrial developments within the City dedicate and construct trail links within their boundaries as part of the Multi-Use Trail Master Plan.
- **Policy 2.** Provide equestrian, bicycling and pedestrian staging areas consistent with plan standards.
- **Policy 3.** Support the acquisition of trail rights-of-way through dedication in conjunction with development activity or acts of philanthropy that occur prior to adoption of a route plan.
- **Policy 4.** Where possible, locate trail easements within City-required landscaping or other easements.
- **Policy 5.** Preserve, to the extent possible, existing formal and informal trail routes in the City, in particular routes that provide major north-south and east-west access.
- **Policy 6.** Where an established trail is jeopardized by impending development or subdivision activity, require the dedication of trail easements, where appropriate, to establish a planned trail system alignment.
- **Policy 7.** Require proposed development adjacent to trail systems to dedicate land for trailhead access points.
- **Policy 8.** Where feasible, use active and abandoned roads, flood control, utility and railroad rights-of-way, and other easements for potential sites for expanded trail use.
- **Policy 11.** Locate trail linkages to minimize conflicts with motorized traffic.

Goal 5.12 – Develop and maintain trail and bikeway connections to recreational facilities, schools, existing transportation routes, natural features and regional trail systems.

- **Policy 1.** Provide trail connections between and/or along the major city and surrounding regional facilities, sites and features indicated on the Multi-Use Trails Master Plan.
- **Policy 2.** Provide bicycle and pedestrian trails along major home-to-work, home-to-school and other travel routes, where appropriate.
- **Policy 4.** Require the dedication of trail easements, where appropriate, for establishing a planned trails system alignment, or where an established trail is jeopardized by impending development or subdivision activity.
- **Policy 5.** Where possible, designate and design new trail development near transit routes or heavily traveled areas.

5.15.4 Project Design Features

Of the total Project area of 1,657 acres, approximately 834 acres, or 50% of the entire community, is planned for parks, recreation, and open spaces (natural and manufactured). Approximately 535 acres will remain in natural open space, while approximately 110.7 acres of parks and 111.8 acres of community greenway will be developed. Parks will be improved as active and passive recreational areas. Active parks could include soccer fields and baseball diamonds as well as open play areas, picnic tables, and informal gathering areas, while passive parks are designed for activities such as walking, hiking and quiet reflection. Harmony offers its residents the opportunity to connect with the natural topography of adjacent mountains and the site's drainage features along its multipurpose trails that meander through the community's greenway system. The Harmony Specific Plan also includes the provision of approximately 4.3 acres for "The Parkhouse", a private recreation facility featuring a clubhouse, swimming pool, and other active and passive amenities.

Harmony's trail network will provide additional recreational opportunities for bicyclists, hikers, and equestrians. Various types of trails offer a wide range of experiences, from hiking/trekking equestrian trails. Recreational opportunities throughout Harmony include different trails and connections to existing trails in the natural open space to paved multi-use trails in urban areas. On- and off-street pedestrian and bicycle paths are designed throughout Harmony by means of interconnected sidewalk paths and trails. Two classifications of urban trails and one classification of natural area trails have been designed for Harmony:

1. **Sidewalk Paths (Urban):** Single-use trails typically following a right-of-way alignment however, separated from the roadway by a vegetated swale
2. **Multipurpose Trail (Urban):** Multiuse trails typically located in the community greenway, the foothills, or natural open space/mountain areas
3. **Hiking, Trekking, and Equestrian Trail (Natural Area):** More challenging multiuse trails typically located in foothills and natural open space/mountain areas.

The majority of the Natural Open Space provides a transition to the San Bernardino National Forest. This area contains an existing network of trails that have been forged over years of activity on the property. These existing trails will be integrated with the planned multipurpose trails in the developed areas of Harmony. Trails within Natural Open Space are primarily existing trails on the property, with connections to existing trails in the San Bernardino National Forest.

Further, as part of recreational amenities specifically geared towards regional connectivity to the Santa Ana River Trail, a 6.5-acre Neighborhood Park (PA-47) is envisioned to remain in a more natural condition and may also provide an equestrian staging area. Horses may be unloaded from their trailers and then access the equestrian trails leading to the foothills and mountains or the Santa Ana River Trail. Given the proximity to challenging mountain trails, this Park may also be suitable for a small number of campsites for day or overnight use. Other recreational amenities may include a dog park, barbecue and picnic areas, interpretive station(s), and supporting facilities. (HSP, p. 9-45)

5.15.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

The nearest regional parks to the Project site include the San Bernardino National Forest, Silverwood Lake State Recreation Area, Lake Gregory Regional Park and the Glen Helen Regional Park. Due to the proximity of the Project site to these large recreational areas, they may get some use by the Project residents, however these regional facilities are designed to serve the region and such use would be expected.

With respect to the existing neighborhood parks located within the City, the open space ratio established in the City General Plan is 2.5 acres per 1,000 residents, which includes a ratio of 2.0 acres of developed park acreage and 0.5 acre of undeveloped natural parkland.

As shown in **Table 5.15-A**, above, and depicted in **Figure 5.15-1**, the City contains approximately 124.5 acres of parkland within its existing boundaries. Therefore, there exists within the City a shortfall of 8.2 acres of parkland based upon the 2.5 acres of parkland per 1,000 residents as described above for the existing 2010 census population.

Based on an estimated population increase of 11,822 to 12,385 residents (see Section 5.13, Population and Housing) and the open space ratio established in the City General Plan of 2.5 acres per 1,000 residents, which includes a ratio of 2.0 acres of developed park acreage and 0.5 acre of undeveloped natural parkland, the Project is required to provide for 23.6 acres to 24.7 acres of developed parks and 5.9 to 6.2 acres of undeveloped natural parkland.

As envisioned in the General Plan, the Specific Plan includes recreational facilities and open space amenities to support the planned development. Harmony's recreation and open space uses include approximately 111 acres of designated parkland (approximately 47 acres will be developed¹), 4.3 acres of private recreation space, 112 acres of community greenway, 535 acres of natural open space that will be maintained in perpetuity as open space conservation with public access to the trail system, and 72 acres of manufactured open space. Parks will be improved as active and passive recreational areas; active parks could include soccer fields and baseball fields as well as open play areas, basketball courts, picnic tables, and informal gathering areas, while passive parks will be designed for activities such as walking, hiking, and quiet reflection and contemplation. A network of Sidewalk Paths, Multipurpose Trails, and Hiking, Trekking, and Equestrian Trails will connect Harmony's neighborhoods to each other and to nearby areas of scenic beauty. Therefore, the Specific Plan far exceeds the City General Plan requirements.

It should also be noted that the proposed acreage of developed and undeveloped natural parkland serve the future residents of the Project. Therefore, the future residential users from the Project would be

¹ Of the 110.7 acres of designated parkland, only approximately 20 acres of Planning Area 44's 83.7 acres will be developed (110.7 - 63.7 = 47). The remaining areas of Planning Area 44 will be more natural with limited disturbances including, but not limited to walking paths and informational signage.

expected to use the new parks constructed as a part of the Project rather than the existing neighborhood parks located elsewhere in the community. Thus, the proposed Project is not anticipated to 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. Therefore, impacts are **less than significant**.

Threshold: *Would the proposed Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

The proposed Project includes the construction of approximately 111 acres of parkland, 4.3 acres of private recreation space, 112 acres of community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes. The proposed parks are considered a part of the Project design and are therefore analyzed throughout this DEIR. The construction of the new parks has been included in the analysis presented in all sections of this DEIR and mitigation measures have been incorporated as appropriate. Impacts associated specifically with recreational facilities are considered **less than significant**.

5.15.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Impacts to recreation are less than significant and thus no mitigation measures are required.

5.15.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The project provides parkland in excess of City standards. Therefore, no significant impacts with respect to local and regional parks will result from implementation of the Project. Impacts resulting from the development of the Project site are evaluated throughout this DEIR; however, impacts specifically related to recreational facilities are considered **less than significant**.

5.15.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

The geographic scope for recreation is the City. The GP EIR determined that no significant impacts to recreation would result from buildout of the General Plan upon implementation of the regulatory requirements and compliance with the General Plan policies and programs. Because the Project provides 64.6 acres of parkland per 1,000 residents, far exceeding the City standards), the Project will not exceed the demand for recreation facilities assumed in the General Plan. The provided parkland coupled with the payment of City Development Impact Fees will result in **less than significant cumulative impacts** to local and regional parks. Section 7 of this DEIR includes additional information on cumulative effects.

5.15.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

- GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed September 8, 2012.)
- GP EIR City of Highland, *General Plan Update Draft EIR*, September 2005. (Available at the City of Highland.)
- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland.)

5.16 Transportation/Traffic

This section of the DEIR describes existing and future traffic circulation, and evaluates the impact of the Project on these conditions. The analysis in this section is based on the *Traffic Impact Analysis, Harmony Specific Plan, City of Highland, San Bernardino County, California*, prepared by LSA Associates Inc., March 2014 (referenced as the TIA and cited as LSA), which is included in Appendix M to this DEIR. The TIA was performed in accordance with the requirements for a TIA established by the *San Bernardino County Congestion Management Plan (CMP)*, adopted November 3, 1993, and last revised in 2009, as well as the requirements of the California Environmental Quality Act.

5.16.1 Setting

The Project site is currently vacant and has two direct points of access: Greenspot Road and Newport Avenue. Greenspot Road is currently a paved, two-lane road with no curb, gutter, sidewalks, or other roadway improvements. Newport Avenue is a paved street with no lane striping that runs east-west through the southern portion of the Project site. The Project site is approximately 6 miles east of State Route 210 (SR-210) and 4.5 miles north of Interstate 10 (I-10). (LSA, pp. 1-2)

5.16.1.1 Existing Roadway System

The existing street system in the Project area consists of roadways designated in the City of Highland *General Plan (GP)* Circulation Element as Major Highway and Special Secondary Highway and the remaining roadways are non-designated local streets (GP, Figure 3-2). In the City, a designated Major Highway provides service to non-local through trips, as well as providing limited local access. Ideally, curb cuts are minimized on major arterials, although historically such access control has been difficult to achieve. A Major Highway is designated as 4-lane, 80-foot roadways (including a 12-foot median) curb-to-curb, within 104-foot rights-of-way (ROW) (GP, p. 3-7). Moreover, in the City, a designated Special Secondary Highway is designated as a 66-foot roadway, curb-to-curb, within a 104-foot ROW. This section provides more space for pedestrian and landscape improvements (GP, p. 3-7).

The following describes the existing conditions and GP designation of roadways in the greater Project area:

- **Base Line** is currently a 4-lane undivided roadway between I-210 and Church Street that transitions to a 2-lane divided roadway east of Church Street. Base Line is designated as a Primary Arterial with a 112-foot ROW between SR-210 and Boulder Avenue, a 104-foot ROW Major Highway between Boulder Avenue and Church Street and as a 104-foot ROW Special Secondary Highway east of Church Street.
- **Boulder Avenue** is currently a 4-lane divided roadway between Highland Avenue and Greenspot Road. The street then becomes a 2-lane undivided roadway, continuing on as Orange Street just north of Plunge Creek and into the city of Redlands. Boulder Avenue is designated as a Modified Primary Arterial for the span of its 4-lane divided roadway, and then as a Secondary Highway as a 4-lane undivided roadway.

- **(Old) Greenspot Road¹** is currently a 5-lane undivided roadway between SR-210 and Boulder Avenue, then continues as a 4-lane undivided roadway from Boulder Avenue to just east of Village Lakes Road where the roadway becomes a 4-lane divided roadway until just west of Gold Buckle Road. Greenspot Road then returns to a 4-lane undivided roadway to just east of Santa Paula Street, where it then continues as a 2-lane undivided roadway. Greenspot Road becomes Florida Avenue just south of the City boundary and north of Mill Creek as the alignment goes from north-south to west-east. Greenspot Road is designated as a Primary Arterial from SR-210 to Boulder Avenue and as a Major Highway from Boulder Avenue to Santa Ana River Bridge, then as a Special Secondary Highway from the Santa Ana River Bridge to the City boundary.
- **Florida Avenue** is currently a 2-lane undivided roadway connecting the “terminus” of Greenspot Road just south of the City boundary and Garnet Avenue. Florida Avenue becomes Garnet Avenue as the roadway alignment turns from west-east to north-south. Florida Avenue is outside the City, and is a local, non-designated street in the San Bernardino County General Plan (SBCGP FEIR, p. IV-150).
- **Garnet Avenue/Street** is currently a 2-lane undivided roadway from Florida Avenue to its terminus in the unincorporated Mentone area. Garnet Avenue is outside the City, and is designated a Minor Arterial in the San Bernardino County General Plan (SBCGP FEIR, p. IV-155).
- **SR-38/Lugonia Avenue/Mentone Boulevard/Mill Creek Road** is currently a 4-lane undivided roadway from SR-210 to Karon Street then briefly is a 2-lane undivided roadway until Texas Street where it returns to a 4-lane roadway until Orange Street. Lugonia Avenue/SR-38 becomes a 2-lane undivided roadway from Orange Street to Tribune Street, then transitions to a 3-lane undivided roadway to just east of Church Street. From Church Street, Lugonia Avenue/SR-38 is a 4-lane undivided roadway to Grove Street where the roadway becomes a 3-lane undivided roadway to Dearborn Street. From Dearborn Street, the roadway returns to a 4-lane undivided roadway until decreasing to a 2-lane undivided roadway at Wabash Avenue. The road continues as Mentone Boulevard/SR-38 as a 2-lane undivided roadway to Amethyst Avenue. From this point, the road continues as Mill Creek Road/SR-38 remaining a 2-lane undivided roadway on into the San Bernardino Mountains. This described length of roadway is outside the City, and spans from the city of Redlands into the unincorporated Mentone area to the northwestern-most borders of the city of Yucaipa before continuing into the San Bernardino Mountains. In the City of Redlands General Plan, the road is designated as a Major Arterial from SR-210 to Orange Street and a Minor Arterial from Orange Street to Orange Lane, then again as a Major Arterial to the limits of Redlands’ Sphere of Influence (RGP, Figure 4.1).

¹ It should be noted that with implementation of the Project, the alignment of Greenspot Road will be modified to from its current alignment, referred to herein as (Old) Greenspot Road, to a new alignment that traverses the Project site from the new Greenspot Bridge over the Santa Ana River to run east-west north of Tres Lagos Street and then trend north-south east of Emerald Avenue, connecting directly with Newport Avenue. The new alignment, referred to herein as (New) Greenspot Road, will effectively “bypass” Florida Street and Garnet Avenue/Street. The (New) Greenspot Road is discussed further later in this section.

- **Bryant Street** is currently a 2-lane undivided roadway from Mill Creek Road/SR-38 to Carter Street in the city of Yucaipa. Bryant Street is outside the City, and is designated a Secondary Highway in the City of Yucaipa General Plan (YGP, Figure VII-2).
- **Sapphire Avenue** is currently a narrow undivided, unlined roadway for two-way traffic that provides connectivity from Florida Avenue and Tres Lagos Street and local access to existing residential properties near the Project site. Sapphire Avenue is a non-designated, local roadway in both the San Bernardino County General Plan and City's General Plan.
- **Tres Lagos Street** is currently a narrow undivided, unlined roadway for two-way traffic that provides connectivity between Sapphire Avenue and Emerald Avenue and local access to existing residential properties near the Project site. Tres Lagos Street is a non-designated, local roadway in the City's General Plan.
- **Emerald Avenue** is currently a narrow undivided, unlined roadway for two-way traffic that provides connectivity between Tres Lagos Street and Newport Avenue. Emerald Avenue is a non-designated, local roadway in the City's General Plan.
- **Newport Avenue** is currently a narrow undivided, unlined roadway for two-way traffic that provides connectivity between Garnet Avenue/Street to existing residential properties near the Project site and to an access road leading to the historic Mill Creek No. 1 Hydroelectric Plant just north of Mill Creek. Newport Avenue is a non-designated, local roadway in the City's General Plan.

The following regional-serving freeways provide access to the Project vicinity and are within the jurisdiction of the California Department of Transportation (Caltrans):

- **SR-210** is an east-west trending to north-south freeway that connects Los Angeles County with the eastern San Bernardino Valley, and locally, connects the cities of Highland and Redlands. SR-210 terminates at its interchange with I-10 in the City of Redlands. SR-210 between Base Line and the I-10 is currently a 4-lane freeway that will need to be widened to 6-lanes to accommodate regional long-term projections for the City (GP, p. 3-31).
- **I-10** is an east-west freeway that begins in Los Angeles County and provides local access through the cities of Fontana, Rialto, Colton, San Bernardino, Loma Linda, Redlands, and Yucaipa before continuing to the San Gorgonio Pass and Coachella Valley and on into the state of Arizona. I-10 ranges from 6- to 10-lanes in the Project area.

Public Transit System

Omnitrans is the public transit agency serving the San Bernardino Valley, including bus service in the City. Generally, bus routes are dictated by need, which in turn is generated by land use patterns. As the City develops, it is expected that the transit system will be developed to meet the need. (GP, p. 3-18) As of January 2013, Omnitrans operates the following three routes within the City (OT 2013):

- **Routes 3/4:** These routes form a circular loop serving West San Bernardino and the City via Highland Avenue, Boulder Avenue, Base Line. Route 3 travels counter-clockwise. Route 4 travels

clockwise. The nearest stop to the Project site along these routes is at Base Line and Boulder Avenue, approximately 5.4 miles to the northwest.

- **Route 15:** This route serves the cities of Fontana and Redlands via the cities of Rialto and San Bernardino. In the City, this route provides bus service along Base Line, Church Street, Greenspot Road, and Boulder Avenue/Orange Street. The nearest stop to the Project site along this route is at Church Street and Greenspot Road, approximately 5 miles to the northwest.

Bicycle and Pedestrian System

There are no existing bicycle facilities on the Project site or within adjacent areas. However, the City of Highland General Plan designates a Class II Bike Lane (On Street) along Greenspot Road until it crosses the Santa Ana River where it continues in an easterly direction across the Project site (GP, Figure 3-5). Designated multi-use trails within the Project vicinity include the Santa Ana River Trail and a trail along a portion of Greenspot Road (GP, Figure 5-6).

5.16.1.2 Study Area

The study area for the traffic analysis was determined based on criteria in the CMP TIA guidelines, discussion with City of Highland staff, and comments received in response to the scopes of work sent to adjacent jurisdictions, which require that all CMP intersections be included in the study area when the anticipated project trips at that intersection equals or exceeds 50 two-way trips during either peak hour. The CMP requirement for freeway segments is 100 two-way peak hour trips. The study area limits are not to exceed a 5-mile radius from the Project site per SANBAG's CMP guidelines. To identify these intersections, a select zone model run was prepared for the Project using the Southern California Association of Governments' (SCAG) Regional Transportation Plan (RTP) traffic model (version 5) to develop the Project's trip distribution, which was then applied to the Project's trip generation and then used to identify study locations where the CMP threshold would be exceeded. The study area is based on the p.m. peak hour because the Project trip generation is greater during this peak hour, as discussed further below. (LSA, p. 4)

In addition, intersection and freeway segments beyond the 5-mile radius were evaluated for potential Project impacts. No CMP intersections beyond a 5-mile radius have more than 50 trips. However, the Project adds more than 100 two-way peak hour trips to freeway segments beyond the 5-mile radius as established by SANBAG's CMP guidelines. Therefore, the freeway segment analysis was extended beyond the 5-mile radius to include locations where more than 100 trips are generated by the Project. (LSA, p. 4)

Off-Site Roadways

Based on the CMP guidelines and consultation with City staff, 40 intersections are included in the study area and are shown in Figure 5 of the TIA. (These intersections are also shown, below, in **Table 5.16-C – Existing Levels of Service.**)

Freeway Segments

The analysis includes seven (7) freeway segments that the Project would add more than 100 two-way peak hour trips per SANBAGD Guidelines. In addition, the analysis also includes segments outside the 5-

mile radius where the Project is forecast to assign more than 100 trips. The freeway segments evaluated are shown in **Table 5.16-C – Existing Freeway Segment Volumes and LOS**. (LSA, pp. 5-6).

The following is a list of the freeway segments analyzed:

Segments on I-10:

1. Between SR-210 Interchange and Orange Street;
2. Between Orange Street and 6th Street;
3. Between 6th Street and University Street; and
4. Between Live Oak Canyon Road and County Line Road

Segments on SR-210:

5. Between I-10 and San Bernardino Avenue;
6. Between 5th Street/Greenspot Road and San Bernardino Avenue; and
7. Between Base Line and 5th Street/Greenspot Road

Segments beyond the 5-mile radius established by the CMP:

8. All segments on I-10 between Beaumont Avenue and County Line Road;
9. All segments on I-10 between I-10/SR-210 Interchange and Milliken Avenue;
10. All segments on SR-210 between Base Line and SR-210/SR-605 Interchange;
11. All segments on I-215 between Palm Avenue and I-215/SR-210 Interchange;
12. All segments on I-215 between I-215/I-10 Interchange and I-215/SR-60 Interchange; and
13. All segments on SR-91 between SR-91/I-215 Interchange and Arlington Avenue.

On-Site Roadways

Currently, there are on-site roadways and access easements. These on-site roadways are prohibited-access service roads. Newport Avenue is the only on-site road providing access to existing residential uses east of the Project site; however, access to this roadway is prohibited at the intersection with Emerald Avenue with “No Trespassing” signs except for use by the San Bernardino County Flood Control District and residents of the residential uses. Therefore, on-site roadways are not included in the study area analysis in the existing condition.

However, the TIA includes an analysis of the internal roadway system based on the Project’s conceptual circulation plan. The conceptual circulation system is shown in **Figure 3-11 – Circulation Plan**.

The following is a list of the 25 internal study area intersections (LSA, pp. 49-50):

1. New Greenspot Road/Access A;
2. Interior A/Access A;
14. Access J/Interior C;
15. Access I/Interior C;

- | | |
|-------------------------------------|--|
| 3. Access B/Interior A; | 16. West Interior E/Interior C; |
| 4. Access B/Interior B; | 17. Access H/Interior C; |
| 5. Access M/Interior B; | 18. Interior C/East Interior E; |
| 6. Access J/Interior B; | 19. New Greenspot Road/Newport Avenue; |
| 7. West Interior E/Interior B; | 20. Access C/Newport Avenue; |
| 8. Access B/New Greenspot Road; | 21. Access D/Newport Avenue; |
| 9. New Greenspot Road/Interior C; | 22. Access E/Newport Avenue; |
| 10. Access M/Interior C; | 23. Access F/Newport Avenue; |
| 11. Access L-Interior D/Interior C; | 24. Access G/Newport Avenue; and |
| 12. Access J/Interior D; | 25. Interior C/Newport Avenue. |
| 13. Access I/Interior C; | |

5.16.1.3 Level of Service Definitions

Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of levels of service (LOS). The LOS system of categorization quantifies traffic operations and describes how well an intersection or roadway is functioning. LOS measures several factors including operating speeds, freedom to maneuver, traffic interruptions, and average vehicle delay at intersections. The LOS approach uses a ranking system similar to the educational system with level “A” being best and level “F” being worst. The Highway Capacity Manual (HCM2000) establishes LOS for signalized and unsignalized intersections **Table 5.16-A – LOS Criteria and Definitions**, describes the specific LOS definitions.

Table 5.16-A – LOS Criteria and Definitions

LOS	Average Control Delay (seconds/vehicle)		Definition
	Signalized Intersection	Unsignalized Intersection	
A	≤ 10	≤ 10	Excellent operation. Completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and by driver preferences. Maneuverability within the traffic stream is good. Minor disruptions to flow are easily absorbed without a change in travel speed.
B	> 10 and ≤ 20	> 10 and ≤ 15	Very good operation. Free flow conditions, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver. Minor disruptions are still easily absorbed, although local deterioration in LOS will be more obvious.

LOS	Average Control Delay (seconds/vehicle)		Definition
	Signalized Intersection	Unsignalized Intersection	
C	> 20 and ≤ 35	> 15 and ≤ 25	Good operation. The influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles. Minor disruptions can cause serious local deterioration in service, and queues will form behind any significant traffic disruption.
D	> 35 and ≤ 55	> 25 and ≤ 35	Fair operation. The ability to maneuver is restricted due to traffic congestion. Travel speed is reduced by the increasing volume. Only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	>55 and ≤ 80	> 35 and ≤ 50	Poor operation. Operations at or near capacity, an unstable level. Vehicles are operating with the minimum spacing for maintaining uniform flow.
F	80.01 and up	50.01 and up	Forced or breakdown flow. It occurs either when vehicles arrive at a rate greater than the rate at which they are discharged or when the forecast demand exceeds the computed capacity of a planned facility. Although operations at these points – and on sections immediately downstream – appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: LSA, Table A and Table B, p. 10.

Freeway Segments

HCM2000 methodologies also establish LOS criteria for freeway facilities. It should be noted that for ramp merge-diverge and weaving operations, the LOS is based on a variety of factors including mainline LOS, but the main criterion is density of vehicles (LSA, p. 10). **Table 5.16-B – Freeway Facility LOS Criteria** shows the ratio and density criteria for freeway facilities

Table 5.16-B – Freeway Facility LOS Criteria

LOS	V/C Ratio for Mainline Freeway Facilities at a Free Flow Speed of 70 mph.	Density (pc/mi/ln) for Merge-Diverge Areas
A	0.32	0-10
B	0.53	10-20
C	0.74	20-28
D	0.9	28-35
E	1.0	>35 (35-43 for weaving segments)
F	> 1.0	Demand Exceeds Capacity (>43 for weaving segments)

Note: pc/mi/ln = passenger car per mile per lane; V/C = volume-to-capacity; mph = miles per hour
Source: LSA, Table B, p. 10.

5.16.1.4 Existing Traffic Volumes and Operating Conditions

Existing traffic conditions are based on peak hour intersection turn movement counts collected by an independent contract company, National Data and Surveying Services, in 2011. In accordance with CMP guidelines, vehicle classification counts were conducted for at least one intersection on each CMP arterial. Since a portion of Boulder Avenue was closed at the time counts were collected, existing counts were adjusted at the intersections of Boulder Avenue/Base Line, Boulder Avenue/Webster Street, and Boulder Avenue/Greenspot Road. For these intersections, existing 2011 counts were compared with counts collected at an earlier date. If earlier count data showed a higher turn movement, a two percent per annum growth was applied to the higher turn movement and used for analysis. Where the 2011 turn movement count was greater, the 2011 turn movement was used with no additional adjustment made. (LSA, p. 7)

The concept of Passenger Car Equivalents (PCEs), employed in all operational analyses in the TIA, accounts for the larger impact of trucks on traffic operations. It does so by assigning each type of truck a PCE factor that represents the number of passenger vehicles that could travel through an intersection in the same time that a particular type of truck could. Specifically, PCE volumes for study area locations were computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. Each factor indicates the number of passenger vehicles that could travel through an intersection in the same amount of time required for the larger truck, thus, 1.5 passenger cars could make it through an intersection in the time required for a single truck with 2 axles, and three passenger vehicles could travel through an intersection in the same amount of time required for a single truck with four or more axles. Thus, the impacts and mitigations identified in the TIA incorporate the impact of trucks on intersection operations. (LSA, p. 7)

Existing freeway segment volumes are based on bidirectional peak hour traffic counts published by Caltrans in 2011. Total peak hour volumes on study area segments have been divided into passenger vehicles and truck volumes based on the truck percentages given in the Caltrans counts for each segment. Consistent with HCM2000 methodologies, PCE volumes for these segments were computed using a PCE factor of 1.5 for all trucks, since the impact of trucks on freeway operations is less than on intersection operations. The directional split of traffic volumes on each segment was computed using factors developed by Caltrans (LSA, pp. 7-8)

Roadway Intersections

Off-Site Intersections

An LOS analysis was conducted to evaluate projected circulation system performance in the existing condition. Existing traffic a.m. and p.m. peak hour turn volumes at study area intersections are shown in Figure 21 of the TIA. **Table 5.16-C – Existing (2011) Intersection LOS** summarizes the year 2011 LOS for the study area intersections. As indicated in the following table, the following intersections are projected to operate at unsatisfactory LOS (LSA, p. 14):

- 26. University Street/I-10 WB On-Ramp-Central Avenue (a.m. and p.m. peak hours)
- 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)

Table 5.16-C – Existing (2011) Conditions Intersection LOS

Intersection	Jurisdiction	LOS Standard	Control	Existing LOS	
				AM Peak Hour	PM Peak Hour
1. Boulder Ave/Base Line Rd	City of Highland	D	Signal	C	C
2. Highland Ave-Weaver St/Base Line	City of Highland	D	AWSC	B	A
3. Weaver St/Water St	City of Highland	D	AWSC	B	A
4. Boulder Ave/Webster St	City of Highland	D	Signal	C	C
5. Palm Ave/5th St	City of Highland	D	Signal	C	C
6. Church Ave/5th St	City of Highland	D	Signal	A	B
7. SR-210 EB Ramps/ 5th St-Greenspot Rd	Caltrans	45s	Signal	B	C
8. SR-210 WB Ramps/ Greenspot Rd	Caltrans	45s	Signal	B	C
9. Lowe’s Center/ Greenspot Rd	City of Highland	D	Signal	A	B
10. Access A/Greenspot Rd	City of Highland	D	Signal	B	A
11. Access C/Greenspot Rd	City of Highland	D	Signal	Future Intersection	Future Intersection
12. Webster St/ Greenspot Rd	City of Highland	D	TWSC	C	B
13. Boulder Ave/ Greenspot Rd	City of Highland	D	Signal	C	C
14. Orange St/ Greenspot Rd	City of Highland	D	Signal	A	A
15. Church St/ Greenspot Rd	City of Highland	D	Signal	C	B
16. Weaver St/ Greenspot Rd	City of Highland	D	TWSC	C	B
17. Alta Vista/ Greenspot Rd	City of Highland	D	TWSC	B	B
18. Greenspot Rd- Garnet Ave/ Newport Ave	City of Highland	D	TWSC	B	B
19. Orange St/SR-38	City of Redlands	C	Signal	C	C
20. Orange St/Colton Ave	City of Redlands	C	Signal	B	B
21. Orange St/I-10 WB Ramps	Caltrans	45s	TWSC	A	A
22. Eureka St/I-10 EB Off-Ramp – Pearl Ave	Caltrans	45s	Signal	B	C

Intersection	Jurisdiction	LOS Standard	Control	Existing LOS	
				AM Peak Hour	PM Peak Hour
23. Orange St/ Pearl Ave	City of Redlands	C	Signal	B	B
24. Church St/SR-38	City of Redlands	C	Signal	C	C
25. University St/SR-38	City of Redlands	C	Signal	A	B
26. University St/I-10 WB On-Ramp – Central Ave	Caltrans	30s	TWSC	F	F
27. University St/I-10 EB Off-Ramp	Caltrans	30s	TWSC	B	C
28. Judson St/SR-38	City of Redlands	C	Signal	B	B
29. Dearborn St/SR-38	City of Redlands	C	Signal	B	B
30. Wabash Ave/SR-38	City of Redlands	C	Signal	C	C
31. Crafton Ave/SR-38	County of San Bernardino	D	Signal	C	C
32. Garnet Ave/SR-38	County of San Bernardino	D	TWSC	C	D
33. Bryant St/SR-38	City of Yucaipa	C	TWSC	B	B
34. Bryant St/Oak Glen Rd	City of Yucaipa	C	Signal	C	C
35. Bryant St Yucaipa Blvd	City of Yucaipa	C	Signal	C	C
36. Sand Canyon Rd – 14 th St/Yucaipa Blvd	City of Yucaipa	C	Signal	D	D
37. Live Oak Canyon Rd/ I-10 WB Ramps	Caltrans	45s	Signal	B	B
38. Live Oak Canyon Rd/ I-10 EB Ramps	Caltrans	45s	Signal	C	C
39. New Greenspot Road/Old Greenspot Road	City of Highland	D	TWSC	Future Intersection	Future Intersection
40. Newport Ave/SR-38	City of Redlands	C	TWSC	Does Not Exist	Does Not Exist

Source: LSA, Table H

On-Site Intersections

As previously stated, there are no on-site uses that generate vehicle trips and existing on-site roadways to off-site utility features or residences prohibit access to authorized vehicles only.

Freeway Segments

Within 5-mile study area radius

The existing freeway segment conditions are shown in **Table 5.16-D – Existing (2011) Freeway Segment Volumes and LOS**. As shown on the following table, all freeway segments (within a 5-mile radius) currently operate at a satisfactory LOE E or better (LSA, p. 31).²

² As is discussed later in this section, Caltrans identifies an LOS E as an acceptable service level.

Table 5.16-D – Existing (2011) Freeway Segment Volumes and LOS

Freeway Segment	Lanes			AM Peak Hour		PM Peak Hour	
	Mixed Flow	HOV	Capacity	V/C	LOS	V/C	LOS
Eastbound							
<u>I-10</u>							
1. SR-210 Interchange to Eureka St EB Off-Ramp	5	0	11,500	0.36	B	0.76	D
2. Eureka St EB Off-Ramp to 6th St EB On-Ramp	4	0	9,200	0.34	B	0.82	D
3. 6th St EB On-Ramp to University St EB Off-Ramp	4	0	9,200	0.41	B	0.86	D
4. Live Oak Canyon Rd EB On-Ramp to County Line Rd EB Off-Ramp	3	0	6,900	0.37	B	0.77	D
<u>SR-210</u>							
5. San Bernardino Avenue to I-10 Interchange	4	0	4,600	0.92	E	0.83	D
6. 5th St/Greenspot Rd EB On-Ramp to San Bernardino Ave EB Off-Ramp	2	0	4,600	0.92	E	0.82	D
7. Base Line EB On-Ramp to 5th St/Greenspot Rd EB Off-Ramp	2	0	4,600	0.75	D	0.75	D
Westbound							
<u>I-10</u>							
8. Orange St WB Slip On-Ramp to SR-210 Interchange	5	0	11,500	0.82	D	0.48	B
9. Orange St WB Loop On-Ramp to Orange St WB Slip On-Ramp	5	0	11,500	0.77	D	0.45	B
10. 6th St WB Off-Ramp to Orange St WB Loop-On Ramp	4	0	9,200	0.88	D	0.49	B
11. University St WB On-Ramp to 6th St WB Off-Ramp	4	0	9,200	0.92	E	0.54	C
12. County Line Rd WB On-Ramp to Live Oak Canyon Rd WB Off-Ramp	3	0	6,900	0.82	D	0.48	B
<u>SR-210</u>							
13. I-10 Interchange to San Bernardino Avenue	3	0	4,600	0.73	C	0.87	D
14. San Bernardino Ave WB On-Ramp to 5th St/Greenspot Rd WB Off-Ramp	2	0	4,600	0.73	C	0.87	D
15. 5th St/Greenspot Rd WB On-Ramp to Base Line WB Off-Ramp	2	0	4,600	0.69	C	0.78	D

Source: LSA, Table LL

The existing a.m. and p.m. peak hour ramp merge/diverge volumes at freeway ramp junctions and LOS (within a 5-mile radius) are shown in **Table 5.16-E – Existing (2011) Freeway Merge/Diverge Volumes and LOS**. As shown in the following table, all freeway ramp locations currently operate at a satisfactory LOS E or better (LSA, p. 31).

Table 5.16-E – Existing (2011) Freeway Merge/Diverge Volumes and LOS

	Ramp	Type	Mainline Lanes	AM Peak Hour					PM Peak Hour				
				PCE		Speed m/hr	Density pc/m/ln	LOS	PCE		Speed m/hr	Density pc/m/ln	LOS
				Ramp	Mainline				Ramp	Mainline			
Eastbound	<i>I-10</i>												
	Eureka St EB Off-Ramp	1 Lane Off	5	1,057	4,103	55.3	22.1	C	1,244	8,597	54.8	35.2	E
	University St EB Off-Ramp	1 Lane Off	4	686	3,687	56.3	19.8	B	1,064	7,725	37.1	55.3	E
	Live Oak Canyon Rd EB Off-Ramp	1 Lane Drop	4	349	2,526	Lane Drop ^a			3,369	6,257	Lane Drop ^a		
	Live Oak Canyon Rd EB On-Ramp	1 Lane On	3	295	2,177	62.0	14.6	B	291	4,888	59.0	27.4	C
	<i>SR-210</i>												
	5 th St / Greenspot Rd EB On-Ramp	1 Lane On	2	1,080	3,073	55.0	33.9	D	795	2,921	30.6	57.0	D
5 th St / Greenspot Rd Off-Ramp	1 Lane Off	2	330	3,403	57.2	26.5	C	441	3,362	56.9	26.1	D	
Westbound	<i>I-10</i>												
	Orange St WB Slip On-Ramp	1 Lane On	5	580	8,647	61.0	21.9	C	321	5,107	61.0	15.5	B
	University St WB On-Ramp	1 Lane On	4	1,400	6,891	60.0	22.1	C	781	4,096	61.0	16.7	B
	Live Oak Canyon Rd WB On-Ramp	1 Lane On	3	1,295	5,062	54.0	30.9	D	506	2,939	63.0	14.6	B
	Live Oak Canyon Rd WB Off-Ramp	1 Lane Off	3	497	5,559	56.7	33.1	D	331	3,270	57.2	22.2	C
	<i>SR-210</i>												
	5 th St / Greenspot Rd WB Off Ramp	1 Lane On	2	581	3,301	56.5	33.1	D	807	3,929	55.9	37.4	E
5 th St / Greenspot Rd WB On-Ramp	1 Lane Off	2	379	2,720	59.0	26.6	C	397	3,122	58.0	29.9	D	

Notes: PCE = passenger car equivalent; m/hr = miles per hour; pc/m/ln = passenger cars per mile per lane; LOS = level of service

^a As stated in the HCM2000, where a single-lane off-ramp results in a lane drop, the capacity of the ramp is governed by the ramp geometry itself, and not by the ramp-freeway junction. The downstream segment is simply considered to be a basic freeway segment.

Source: LSA, Table MM

Beyond the 5-mile study area radius³

The existing freeway segment conditions for facilities beyond the 5-mile study area radius are shown in **Table 5.16-F – Existing (2011) Freeway Mainline LOS Summary (Beyond 5-Mile Radius)**. As shown on the following table, there are 9 freeway segments on SR-210 operating at an unsatisfactory LOS, 17 freeway segments on I-10 operating at an unsatisfactory LOS, 6 freeway segments on I-215 operating at an unsatisfactory LOS, and 2 freeway segments on SR-91 operating at an unsatisfactory LOS (LSA, pp. 44-46).

Table 5.16-F – Existing (2011) Freeway Mainline LOS Summary (Beyond 5-Mile Radius)

Freeway Segment	LOS	Freeway Segment	LOS
<i>SR-210</i>			
<i>A.M. Peak Hour</i>			
<i>Eastbound</i>		<i>Westbound</i>	
1. Base Line and SR-210/SR-330 Interchange	B	34. Base Line and SR-210/SR-330 Interchange	B
2. SR-210/SR-330 Interchange and Victoria Avenue	B	35. SR-210/SR-330 Interchange and Victoria Avenue	C
3. Highland Avenue and Del Rosa Avenue	B	36. Highland Avenue and Del Rosa Avenue	C
4. Del Rosa Avenue and Waterman Avenue	B	37. Del Rosa Avenue and Waterman Avenue	C
5. Waterman Avenue and SR-259 Interchange	B	38. Waterman Avenue and SR-259 Interchange	C
6. SR-259 Interchange and H Street	B	39. SR-259 Interchange and H Street	B
7. H Street and I-215 Interchange	A	40. H Street and I-215 Interchange	A
8. I-215 Interchange and N. State Street	A	41. I-215 Interchange and N. State Street	A
9. N. State Street and N. Riverside Avenue	A	42. N. State Street and N. Riverside Avenue	A
10. N. Riverside Avenue and Ayala Drive	A	43. N. Riverside Avenue and Ayala Drive	A
11. Sierra Avenue and Citrus Avenue	B	44. Sierra Avenue and Citrus Avenue	C
12. Citrus Avenue and Cherry Avenue	B	45. Citrus Avenue and Cherry Avenue	A
13. Cherry Avenue and SR-210/I-15 Interchange	B	46. Cherry Avenue and SR-210/I-15 Interchange	C
14. I-15 Interchange and Day Creek Boulevard	C	47. I-15 Interchange and Day Creek Boulevard	D
15. Day Creek Boulevard and Milliken Avenue	C	48. Day Creek Boulevard and Milliken Avenue	D
16. Milliken Avenue and Haven Boulevard	B	49. Milliken Avenue and Haven Boulevard	D
17. Haven Boulevard and Archibald Avenue	C	50. Haven Boulevard and Archibald Avenue	C
18. Archibald Avenue and Carnelian Street	C	51. Archibald Avenue and Carnelian Street	D
19. Carnelian Street and Campus Avenue	C	52. Carnelian Street and Campus Avenue	D
20. Campus Avenue and Mountain Avenue	C	53. Campus Avenue and Mountain Avenue	D
21. Mountain Avenue and Base Line	B	54. Mountain Avenue and Base Line	D
22. Base Line and Town Avenue	B	55. Base Line and Town Avenue	D
23. Town Avenue and Fruit Street	B	56. Town Avenue and Fruit Street	D
24. Fruit Street and Foothill Boulevard	B	57. Fruit Street and Foothill Boulevard	D
25. Foothill Boulevard and San Dimas Avenue	B	58. Foothill Boulevard and San Dimas Avenue	E
26. San Dimas Avenue and SR-210/SR-57 Interchange	B	59. San Dimas Avenue and SR-210/SR-57 Interchange	C
27. SR-210/SR-57 Interchange and Sunflower Avenue	B	60. SR-210/SR-57 Interchange and Sunflower Avenue	D
28. Sunflower Avenue and Grand Avenue	C	61. Sunflower Avenue and Grand Avenue	F
29. Grand Avenue and Citrus Avenue	B	62. Grand Avenue and Citrus Avenue	E
30. Citrus Avenue and Azusa Avenue	B	63. Citrus Avenue and Azusa Avenue	F
31. Azusa Avenue and Vernon Avenue	B	64. Azusa Avenue and Vernon Avenue	D
32. Vernon Avenue and Irwindale Avenue	C	65. Vernon Avenue and Irwindale Avenue	F
33. Irwindale Avenue and SR-210/I-605 Interchange	B	66. Irwindale Avenue and SR-210/I-605 Interchange	F

³ As mentioned above, a freeway segment and ramp junction analysis was conducted outside the 5-mile radius study area established by SANBAG’s CMP guidelines where the Project adds more than 100 two-way peak hour trips. Although not required by the CMP, this additional analysis was prepared for disclosures per CEQA.

Freeway Segment	LOS	Freeway Segment	LOS
P.M. Peak Hour			
Eastbound		Westbound	
1. Base Line and SR-210/SR-330 Interchange	B	34. Base Line and SR-210/SR-330 Interchange	B
2. SR-210/SR-330 Interchange and Victoria Avenue	C	35. SR-210/SR-330 Interchange and Victoria Avenue	C
3. Highland Avenue and Del Rosa Avenue	C	36. Highland Avenue and Del Rosa Avenue	B
4. Del Rosa Avenue and Waterman Avenue	C	37. Del Rosa Avenue and Waterman Avenue	C
5. Waterman Avenue and SR-259 Interchange	C	38. Waterman Avenue and SR-259 Interchange	B
6. SR-259 Interchange and H Street	B	39. SR-259 Interchange and H Street	B
7. H Street and I-215 Interchange	B	40. H Street and I-215 Interchange	A
8. I-215 Interchange and N. State Street	A	41. I-215 Interchange and N. State Street	A
9. N. State Street and N. Riverside Avenue	A	42. N. State Street and N. Riverside Avenue	A
10. N. Riverside Avenue and Ayala Drive	A	43. N. Riverside Avenue and Ayala Drive	A
11. Sierra Avenue and Citrus Avenue	C	44. Sierra Avenue and Citrus Avenue	B
12. Citrus Avenue and Cherry Avenue	B	45. Citrus Avenue and Cherry Avenue	A
13. Cherry Avenue and SR-210/I-15 Interchange	C	46. Cherry Avenue and SR-210/I-15 Interchange	C
14. I-15 Interchange and Day Creek Boulevard	D	47. I-15 Interchange and Day Creek Boulevard	C
15. Day Creek Boulevard and Milliken Avenue	D	48. Day Creek Boulevard and Milliken Avenue	C
16. Milliken Avenue and Haven Boulevard	C	49. Milliken Avenue and Haven Boulevard	C
17. Haven Boulevard and Archibald Avenue	E	50. Haven Boulevard and Archibald Avenue	C
18. Archibald Avenue and Carnelian Street	E	51. Archibald Avenue and Carnelian Street	C
19. Carnelian Street and Campus Avenue	D	52. Carnelian Street and Campus Avenue	C
20. Campus Avenue and Mountain Avenue	D	53. Campus Avenue and Mountain Avenue	C
21. Mountain Avenue and Base Line	C	54. Mountain Avenue and Base Line	C
22. Base Line and Town Avenue	C	55. Base Line and Town Avenue	B
23. Town Avenue and Fruit Street	C	56. Town Avenue and Fruit Street	B
24. Fruit Street and Foothill Boulevard	E	57. Fruit Street and Foothill Boulevard	B
25. Foothill Boulevard and San Dimas Avenue	F	58. Foothill Boulevard and San Dimas Avenue	C
26. San Dimas Avenue and SR-210/SR-57 Interchange	C	59. San Dimas Avenue and SR-210/SR-57 Interchange	B
27. SR-210/SR-57 Interchange and Sunflower Avenue	D	60. SR-210/SR-57 Interchange and Sunflower Avenue	B
28. Sunflower Avenue and Grand Avenue	F	61. Sunflower Avenue and Grand Avenue	C
29. Grand Avenue and Citrus Avenue	F	62. Grand Avenue and Citrus Avenue	C
30. Citrus Avenue and Azusa Avenue	F	63. Citrus Avenue and Azusa Avenue	C
31. Azusa Avenue and Vernon Avenue	E	64. Azusa Avenue and Vernon Avenue	B
32. Vernon Avenue and Irwindale Avenue	F	65. Vernon Avenue and Irwindale Avenue	E
33. Irwindale Avenue and SR-210/I-605 Interchange	E	66. Irwindale Avenue and SR-210/I-605 Interchange	F
I-10			
A.M. Peak Hour			
Eastbound		Westbound	
1. Beaumont Avenue and SR-60	C	25. Beaumont Avenue and SR-60	D
2. SR-60 and Oak Valley Parkway	C	26. SR-60 and Oak Valley Parkway	D
3. Oak Valley Parkway and Brookside Avenue	C	27. Oak Valley Parkway and Brookside Avenue	D
4. Cherry Valley Road and Singleton Road	C	28. Cherry Valley Road and Singleton Road	D
5. Singleton Road and 5th Street	C	29. Singleton Road and 5th Street	D
6. County Line Road and Live Oak Canyon Road	C	30. County Line Road and Live Oak Canyon Road	E
7. SR-210/I-10 Interchange and Alabama Street	B	31. SR-210/I-10 Interchange and Alabama Street	D
8. Alabama Street and California Street	B	32. Alabama Street and California Street	D
9. California Street and Mountain View Avenue	B	33. California Street and Mountain View Avenue	E
10. Mountain View Avenue and Tippecanoe Avenue	B	34. Mountain View Avenue and Tippecanoe Avenue	E
11. Tippecanoe Avenue and Waterman Avenue	B	35. Tippecanoe Avenue and Waterman Avenue	E
12. Waterman Avenue and I-10/I-215 Interchange	B	36. Waterman Avenue and I-10/I-215 Interchange	F
13. I-10/I-215 Interchange and Sperry Drive	B	37. I-10/I-215 Interchange and Sperry Drive	E
14. Mt Vernon Avenue and 9th Street	B	38. Mt Vernon Avenue and 9th Street	E
15. 9th Street and Rancho Avenue	B	39. 9th Street and Rancho Avenue	F
16. Rancho Avenue and Pepper Avenue	B	40. Rancho Avenue and Pepper Avenue	F

Freeway Segment	LOS	Freeway Segment	LOS
17. Pepper Avenue and Riverside Avenue	B	41. Pepper Avenue and Riverside Avenue	F
18. Riverside Avenue and Cedar Avenue	B	42. Riverside Avenue and Cedar Avenue	F
19. Cedar Avenue and Alder Avenue	B	43. Cedar Avenue and Alder Avenue	F
20. Sierra Avenue and Citrus Avenue	B	45. Sierra Avenue and Citrus Avenue	E
21. Citrus Avenue and Beech Avenue	C	46. Citrus Avenue and Beech Avenue	F
22. Cherry Avenue and Etiwanda Avenue	C	47. Cherry Avenue and Etiwanda Avenue	F
23. Etiwanda Avenue and I-10/I-15 Interchange	B	48. Etiwanda Avenue and I-10/I-15 Interchange	F
24. Haven Avenue and Archibald Avenue	B	49. Haven Avenue and Archibald Avenue	D
P.M. Peak Hour			
Eastbound		Westbound	
1. Beaumont Avenue and SR-60	B	25. Beaumont Avenue and SR-60	D
2. SR-60 and Oak Valley Parkway	B	26. SR-60 and Oak Valley Parkway	D
3. Oak Valley Parkway and Brookside Avenue	B	27. Oak Valley Parkway and Brookside Avenue	D
4. Cherry Valley Road and Singleton Road	C	28. Cherry Valley Road and Singleton Road	D
5. Singleton Road and 5th Street	C	29. Singleton Road and 5th Street	D
6. County Line Road and Live Oak Canyon Road	C	30. County Line Road and Live Oak Canyon Road	D
7. SR-210/I-10 Interchange and Alabama Street	C	31. SR-210/I-10 Interchange and Alabama Street	E
8. Alabama Street and California Street	B	32. Alabama Street and California Street	D
9. California Street and Mountain View Avenue	C	33. California Street and Mountain View Avenue	E
10. Mountain View Avenue and Tippecanoe Avenue	C	34. Mountain View Avenue and Tippecanoe Avenue	C
11. Tippecanoe Avenue and Waterman Avenue	C	35. Tippecanoe Avenue and Waterman Avenue	C
12. Waterman Avenue and I-10/I-215 Interchange	D	36. Waterman Avenue and I-10/I-215 Interchange	C
13. I-10/I-215 Interchange and Sperry Drive	D	37. I-10/I-215 Interchange and Sperry Drive	C
14. Mt Vernon Avenue and 9th Street	D	38. Mt Vernon Avenue and 9th Street	C
15. 9th Street and Rancho Avenue	F	39. 9th Street and Rancho Avenue	C
16. Rancho Avenue and Pepper Avenue	F	40. Rancho Avenue and Pepper Avenue	C
17. Pepper Avenue and Riverside Avenue	F	41. Pepper Avenue and Riverside Avenue	C
18. Riverside Avenue and Cedar Avenue	F	42. Riverside Avenue and Cedar Avenue	C
19. Cedar Avenue and Alder Avenue	F	43. Cedar Avenue and Alder Avenue	C
20. Sierra Avenue and Citrus Avenue	D	45. Sierra Avenue and Citrus Avenue	C
21. Citrus Avenue and Beech Avenue	F	46. Citrus Avenue and Beech Avenue	C
22. Cherry Avenue and Etiwanda Avenue	F	47. Cherry Avenue and Etiwanda Avenue	C
23. Etiwanda Avenue and I-10/I-15 Interchange	F	48. Etiwanda Avenue and I-10/I-15 Interchange	C
24. Haven Avenue and Archibald Avenue	D		
I-215			
A.M. Peak Hour			
Northbound		Southbound	
1. Campus Parkway and University Parkway	A	10. Campus Parkway and University Parkway	C
2. University Parkway and I-215/I-210 Interchange	A	11. University Parkway and I-215/I-210 Interchange	C
4. I-215/I-10 Interchange and Washington Street	C	12. I-215/I-10 Interchange and Washington Street	F
5. Washington Street and Barton Road	C	13. Washington Street and Barton Road	F
6. Barton Road and Iowa Avenue	C	14. Barton Road and Iowa Avenue	F
7. Iowa Avenue and Center Street	D	15. Iowa Avenue and Center Street	D
8. Center Street and La Cadena Drive	D	16. Center Street and La Cadena Drive	D
9. La Cadena Drive and I-215/SR-60 Interchange	C	17. La Cadena Drive and I-215/SR-60 Interchange	C
P.M. Peak Hour			
Northbound		Southbound	
1. Campus Parkway and University Parkway	C	10. Campus Parkway and University Parkway	B
2. University Parkway and I-215/I-210 Interchange	C	11. University Parkway and I-215/I-210 Interchange	B
4. I-215/I-10 Interchange and Washington Street	F	12. I-215/I-10 Interchange and Washington Street	C
5. Washington Street and Barton Road	F	13. Washington Street and Barton Road	C
6. Barton Road and Iowa Avenue	F	14. Barton Road and Iowa Avenue	C
7. Iowa Avenue and Center Street	D	15. Iowa Avenue and Center Street	D
8. Center Street and La Cadena Drive	D	16. Center Street and La Cadena Drive	D

Freeway Segment	LOS	Freeway Segment	LOS
9. La Cadena Drive and I-215/SR-60 Interchange	C	17. La Cadena Drive and I-215/SR-60 Interchange	C
SR-91			
A.M. Peak Hour			
Eastbound		Westbound	
1. I-215/SR-60/SR-91 Interchange and Spruce Street	C	6. I-215/SR-60/SR-91 Interchange and Spruce Street	C
2. Spruce Street and Mission Inn Avenue	E	7. Spruce Street and Mission Inn Avenue	D
3. Mission Inn Avenue and 14th Street	C	8. Mission Inn Avenue and 14th Street	C
4. 14th Street and Central Avenue	E	9. 14th Street and Central Avenue	E
5. Central Avenue and Arlington Avenue	C	10. Central Avenue and Arlington Avenue	C
P.M. Peak Hour			
Eastbound		Westbound	
1. I-215/SR-60/SR-91 Interchange and Spruce Street	C	6. I-215/SR-60/SR-91 Interchange and Spruce Street	C
2. Spruce Street and Mission Inn Avenue	D	7. Spruce Street and Mission Inn Avenue	D
3. Mission Inn Avenue and 14th Street	C	8. Mission Inn Avenue and 14th Street	C
4. 14th Street and Central Avenue	D	9. 14th Street and Central Avenue	E
5. Central Avenue and Arlington Avenue	C	10. Central Avenue and Arlington Avenue	C

Source: LSA, Tables FFF, GGG, HHH, III

5.16.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts related to transportation/traffic may be considered potentially significant if the Project would:

- conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- 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;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access; and/or
- conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

For this DEIR, the first two thresholds of significance identified above, will be analyzed simultaneously.

5.16.3 Related Regulations

5.16.3.1 California Department of Transportation

As determined by Caltrans, the LOS for operating state highway facilities is based upon measures of effectiveness (MOEs). These MOEs describe the measures best suited for analyzing state highway

facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.). Caltrans endeavors to maintain LOS between C and D at all intersections under its jurisdiction; this has been interpreted to mean that a maximum average delay at a Caltrans intersection exceeding 45 seconds is considered an impact (30 seconds for unsignalized ramps). For freeway segments and merge/diverge areas, Caltrans has consistently used LOS E as acceptable LOS on their own projects in San Bernardino, Riverside and Los Angeles Counties. In some instances, Caltrans has even recognized LOS F as acceptable. (LSA, p. 11)

5.16.3.2 Southern California Association of Governments

As the designated Metropolitan Planning Organization for the Southern California region, SCAG is the agency responsible for carrying out these policies and programs. SCAG is a regional agency established pursuant to California Government Code Section 6500, also referred to as the Joint Powers Authority law. SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency, and a Metropolitan Planning Organization. The Project site is within SCAG's regional authority. Below is an overview of SCAG's RTP relevant to the Project.

Regional Transportation Plan

In 2012, SCAG prepared an updated RTP/Sustainable Communities Strategy with goals to: 1) align the plan investments and policies with improving regional economic development and competitiveness; 2) maximize mobility and accessibility for all people and goods in the region; 3) ensure travel safety and reliability for all people and goods in the region; 4) preserve and ensure a sustainable transportation system; 5) maximize productivity of the transportation system; 6) protect the environment and health of residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking); 7) actively encourage and create incentives for energy efficiency, where possible; 8) encourage land use and growth patterns that facilitate transit and non-motorized transportation; and 9) maximize the security of the regional transportation system. Performance measures and funding strategies also are included to ensure that the adopted goals are achieved through implementation.

San Bernardino Associated Governments

SANBAG is the COG and transportation planning agency for San Bernardino County. SANBAG is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide. As the County Transportation Commission, SANBAG supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts and long-term planning studies. SANBAG administers Measure I, the half-cent transportation sales tax approved by county voters in 1989. Below are an overview of SANBAG's plans and studies relevant to the Project.

San Bernardino County Congestion Management Plan

The CMP was first established in 1990 under Proposition 111. Proposition 111 established a process for each metropolitan county in California to designate a Congestion Management Agency (CMA) that would be responsible for development and implementation of the CMP within county boundaries. SANBAG is designated as the CMA for San Bernardino County, and thus, prepares and administers the CMP in cooperation with a technical advisory committee composed of planning and engineering staff from SANBAG, SANBAG member cities (which includes the City), San Bernardino County, transit

providers, SCAG, Caltrans, South Coast Air Quality Management District, and the Mojave Desert Air Quality Management District. The intent of the CMP is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related impacts, and improve air quality.

Compliance of the Project's TIA with SANBAG's CMP guidelines is discussed further in Section 5.16.6.1, below.

SANBAG Measure I Program

Measure I is the half-cent sales tax collected throughout San Bernardino County for transportation improvements. San Bernardino County voters first approved the measure in November 1989 to ensure that needed transportation projects were implemented countywide through 2010. In 2004, San Bernardino County voters approved the extension of the Measure I sales tax to extend the measure through 2040.

SANBAG administers Measure I revenue and is responsible for determining which projects receive Measure I funding, and ensuring that transportation projects are implemented. Measure I funds are allocated based on a strategic plan. Eligible expenditures include those for planning, environmental reviews, engineering and design costs, related right-of-way acquisition, and construction. Eligible expenditures also include, but are not limited to, debt service on bonds and expenses in connection with issuance of bonds.

The Measure I retail transactions and use tax is statutorily dedicated for transportation purposes only in San Bernardino County and cannot be used for other governmental purposes or programs. There are specific safeguards in the Ordinance to ensure that funding is used in accordance with the specified voter-approved transportation project improvements and programs.

The Measure I Ordinance contains maintenance-of-effort provisions that state that funds provided to government agencies by Measure I are to supplement, and not replace, existing local revenues being used for transportation purposes. ***In addition, Measure I 2010-2040 revenues are not to replace requirements for new development to provide for its own road needs.*** SANBAG prepared the Nexus Study as a condition of approval of the Measure I program to address developments' share of providing for future transportation needs.

Nexus Study

The SANBAG Nexus Study identifies a Nexus Study Network, representing regional roadways in the urbanized areas of San Bernardino County. As part of this program, local jurisdictions implement development mitigation programs that generate development contributions for regional transportation improvements equal to or greater than fair share contributions determined through the SANBAG Development Mitigation Nexus Study. Regional transportation facilities addressed by the Nexus Study include freeway interchanges, railroad grade separations, and regional arterial highways on the Nexus Study Network. (LSA, p. 28)

The Nexus Study identifies specific improvement projects on the Nexus Study Network and includes a cost estimate for the projects. The cost estimates have been developed collaboratively, working with local jurisdictions to obtain the most up-to-date project cost data available. Costs may include planning,

project development (including Project Study Reports, Project Reports, and environmental documents), design, construction, construction management, project management, right-of-way, and mitigation of impacts subject to the policy provisions contained in the Measure I Strategic Plan. Only those project phases for which costs are included in the Nexus Study are eligible for Measure I or other transportation funding allocated by SANBAG. (LSA, pp. 28-29)

Regional transportation facilities identified in the Nexus Study include freeway interchanges, railroad grade separations, and regional arterial highways. The program relies upon local jurisdictions to implement mitigation programs by collecting fees for regional improvements; however, SANBAG does not dictate how individual jurisdictions allocate their fair shares to new development. Instead, each jurisdiction, including the Cities of Highland, Redlands, Yucaipa, and the County of San Bernardino, are required to develop its own schedule of fees (often through a development impact fee program) and implementation program (often through a capital improvements program) that can demonstrate achievement of the contribution levels in the Nexus Study.

The Nexus Study is based on having each jurisdiction subject to the Study fund its fair share of needed *regional* improvements by developing the facilities *within its own jurisdiction*. The Study does not rely on payment of fees between jurisdictions as a means of mitigating impacts of development occurring within one jurisdiction on the regional transportation facilities of another jurisdiction. In establishing a development impact fee program, a jurisdiction does not allocate arterial improvement costs to development projects located in another jurisdiction. If a jurisdiction collects from developments located within its jurisdiction of the full amount of fee pursuant to its development impact fee program over a long period of time until it is fully build-out, a jurisdiction will have collected sufficient funds to improve regional arterials listed in the Nexus Study. Therefore, a jurisdiction, such as Highland, will be in compliance with the Nexus Study when it collects development impact fee from developments located within its jurisdiction.

The Nexus Study does not have any provisions that would restrict a jurisdiction from requiring a development project located within the jurisdiction to make fair share contributions to regional transportation facilities located in another jurisdiction proportional to the traffic impact of the development project on the regional transportation facilities.

5.16.3.3 City of Highland General Plan Circulation Element

The Circulation Element addresses current transportation-related issues and future challenges associated with the growth posed by the General Plan. In addition, the Circulation Element analyzes future traffic impacts to the City due to the planned growth of Highland's Land Use Plan and the inevitable growth region-wide. The purpose of the Circulation Element is to develop an efficient, cost effective and comprehensive transportation management strategy, consistent with regional plans and local needs to maintain and improve mobility, and in a manner consistent with the goals and character of the community.

The Circulation Element provides specific implementation programs, which address the existing traffic conditions in the General Plan planning area, and are designed to prevent future deterioration of roadway capacity in the community. California Government Code describes conditions and data to be

researched, analyzed and included within a General Plan Circulation Element. Government Code Section 65302(b) states that the General Plan shall include the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and other local public utilities and facilities.

The following goals and policies from the Circulation Element are applicable to the Project:

- Goal 3.1:** Provide a comprehensive transportation system that facilitates current and long-term circulation in and through the City.
- Policy 3.1.2:** Ensure that all intersections operate at LOS D or better during the peak hours of traffic.
- Policy 3.1.3:** Ensure that the City's street system be designed and constructed to accommodate the traffic generated by build-out of the General Plan land use designations.
- Policy 3.1.5:** Design and employ traffic control measures (e.g., install traffic signals, provide access restrictions, etc.) to ensure city streets and roads function as intended.
- Policy 3.1.9:** Restrict the number of access points and intersections along arterials to preserve mid-block and intersection capacities and to maintain public safety.
- Goal 3.4:** Provide a safe circulation system.
- Policy 3.4.1:** Establish a local street system within developing neighborhoods through a cooperative public/private planning process.
- Policy 3.4.2:** Require new development to install and maintain streets within planned residential areas as private streets and in accordance with development standards set forth in the Development Code and other applicable standards and guidelines.
- Policy 3.4.4:** Require new development to provide pedestrian paths and linkages through projects, locating linkages to avoid conflicts with motorized traffic.
- Policy 3.4.8:** Implement street design features such as the use of medians, bus turnouts and consolidated driveways to minimize mid-block traffic congestion.
- Policy 3.4.10:** Provide adequate sight distances for safe vehicular movement on roadways and at intersections.
- Policy 3.4.14:** Add raised, landscaped medians and bulb-outs, where appropriate, to reduce exposure to cross traffic at street crossings.
- Policy 3.4.15:** When feasible, walkways should include pedestrian amenities such as shade trees and/or plantings, trash bins, benches, and shelters.
- Goal 3.7:** Protect and encourage bicycle travel.
- Policy 3.7.2:** Encourage new development to provide reasonable and secure space for bicycle storage.

Policy 3.7.3: Provide bicycle racks at all public facilities and along major public streets.

Policy 3.7.5: Provide linkages between bicycle routes and other trails, such as the Santa Ana River Trail, within the City as appropriate.

Goal 3.9: Ensure adequate parking is made available to City residents, visitors, and businesses.

The Project, as currently proposed, meets these applicable goals and policies of the Circulation Element as identified in Section 5.10, Land Use and Planning.

5.16.3.4 City of Highland Municipal Code

The following are applicable City Municipal Code requirements for this Project:

Section 16.52.030: Schedule of off-street parking requirements.

Ordinance No. 309: Adopted October 24, 2006, as Amended by Resolution No. 2007-0670, establishes a comprehensive system of Development Impact Fees, including fees for Regional Circulation Facilities.⁴

5.16.4 Project Design Features

Project design features refer to the ways in which the Project will reduce or avoid potential impacts related to traffic and transportation. Land uses are arranged in keeping with the guiding principles of design as well as the geographical features and environmental character of the Specific Plan area as follows (HSP, p. 1-13):

- Human scale of development is planned as being oriented to pedestrian activities, with connectivity provided within the community through a comprehensive network of green streets, sidewalk paths, and multipurpose trails
- A design of residential neighborhoods oriented to parks and open space creating an outdoor experience and active and passive recreational opportunities for its residents
- Residential neighborhoods designed within easy walking distance to parks and open space

The Project incorporates architecture reminiscent of the Project area's ranching history combined with comprehensive site planning that works with the natural environment to produce a community of aesthetic and functional harmony, provides a sense of place for residents, and retains environmentally sensitive areas through the following (HSP, p. 1-14):

- Green streets linked with natural drainage features and distinct landscaping in a manner friendly to pedestrians while being accessible to bicycles and automobiles

⁴ Fees are updated annually. The current resolution numbers are 2014-002 and 2014-003. For a complete list of the Regional Circulation facilities covered by this fee program, see www.sanbag.ca.gov%2Fplanning%2Fcmp%2FNexusStudyArterial2011Update.pdf&ei=F_H7UrL7AseDogTYuoLQCQ&usg=AFQjCNG_K08OPwsf5PTurdu8FP1dPjViqw and www.sanbag.ca.gov%2Fplanning%2Fcmp%2Fcmp11NexusStudy_k.pdf&ei=F_H7UrL7AseDogTYuoLQCQ&usg=AFQjCNG_iWq5K4_-FUOfTZSKnAPsGIouA

Additionally, specific goals and policies identified in the Specific Plan that are directly applicable to this transportation and traffic analysis is as follows (HSP, pp. 2-5 and 2-10):

- 2.5.1: Create a livable environment
 - Facilitation of alternate means of mobility such as biking and walking
 - Connectivity among neighborhoods
 - Commercial and service retail opportunities connected to residential areas through a network of bicycle and pedestrian trails
 - A school site within walking distance of residences
- 2.5.6: Plan for a circulation system serving motorists, transit users, bicyclists, and pedestrians (referred to as “complete streets”)
 - Create an environment inviting to bicycle and pedestrian travel through the use of landscaped parkways and walkways separate from the street
 - Coordinate with Omnitrans to provide bus service to the Project site that will connect to other local and regional destinations
 - Coordinate with Omnitrans on the location and design of a transit stop(s)

5.16.5 Environmental Impacts before Mitigation

The following includes a summary of the methodology used by the TIA for traffic projections and a discussion of the Project impacts as compared to existing conditions and future projected traffic conditions. Moreover, it should be noted that the Project impacts consider two scenarios, the first scenario considers the impacts without a Newport Avenue/SR-38 connection via a bridge over Mill Creek, and the second scenario considers the impacts with a Newport Avenue/SR-38 connection.

5.16.5.1 Analysis Methodology

The TIA was prepared consistent with the requirements of San Bernardino County CMP and consultations with the City. Consistent with CMP requirements, the TIA analyzes a.m. and p.m. peak hour conditions wherein a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m., and the p.m. peak hour is the one hour of highest traffic volumes occurring between 4:00 p.m. and 6:00 p.m. (LSA, pp. 3-4). As the Project will be built in phases, the TIA analyzes anticipated Project impacts with projected future traffic conditions for each phase’s build-out year as well as a long-term traffic conditions 12 years after full build out. Specifically, the following conditions are evaluated:

- Existing (2011) Conditions (shown above in Section 5.16.1.4)

- Existing (2011) Conditions with Project⁵
- Year 2015 with and without Phase I Project Conditions
- Year 2017 with and without Phase II Project Conditions
- Year 2019 with and without Phase III Project Conditions
- Year 2021 with and without Phase IV Project Conditions
- Year 2023 with and without Phase V Project Conditions
- Long-Term (2035) Conditions with and without Full Project Build-out

As noted above, additional access to the Project site via a Newport Avenue/SR-38 connection is analyzed by the TIA. The potential connection is articulated in the City's General Plan and SANBAG's Development Mitigated Nexus Study, which do not anticipate development of a Newport Avenue/SR-38 connection until 2020 (LSA, p. 3). It should be noted, however, that development of the Newport Avenue/SR-38 connection is dependent on current and future regional funding programs, and is considered a regional project that is located within several jurisdictions beyond the Project site boundary; thus, as it is uncertain at this time if and when the connection will be built, the TIA analyzes Project impacts in both scenarios (LSA, p. 3). Thus, the Newport Avenue/SR-38 connection scenario was evaluated for the following conditions:

- Year 2021 (with SR-38 Connection) with and without Phase IV Project Conditions
- Year 2023 (with SR-38 Connection) with and without Phase V Project Conditions
- Long-Term (2035) (with SR-38 Connection) Conditions with and without Full Project Build-out

In accordance with the CMP, the LOS definitions contained in the Transportation Research Board Special Report 209, HCM2000, were used to determine all study area intersection LOS. LOS at all intersections was calculated using Traffix version 8.0 software, which utilizes HCM2000 methodologies, and, thus, is in accordance with the CMP. Saturation flow rates consistent with CMP guidelines for existing conditions, opening year, and future year analyses were used in the calculations of intersection capacity. In accordance with the CMP guidelines, any intersection at which the volume-to-capacity ratio is greater than 1.0 is considered to be operated at LOS F, regardless of delay. (LSA, pp. 9-11)

As mentioned in Section 5.16.1.2, above, an analysis of freeway segments and ramp junctions were prepared for facilities within a 5-mile radius per CMP guidelines, and since the Project will add more than 100 two-way peak hour trips to freeway facilities beyond the 5-mile radius, an analysis was also conducted for those affected facilities.

Performance Criteria

Regarding performance criteria, the CMP standard is LOS E. The CMP allows local discretion and requirements to be used to determine project impacts and appropriate mitigation at study intersections.

⁵ This traffic condition is not required by CMP guidelines, but has been included based on recent CEQA litigation (*Sunnyvale West Neighborhood Association et al. v. City of Sunnyvale City Council*).

Therefore, to present a worst-case scenario, for jurisdictions that have a more restrictive LOS standard, the more restrictive standard has been used to identify the threshold of operation. All ramp terminus intersections are under the jurisdiction of Caltrans. The remaining study intersections are under the jurisdiction of the cities of Highland, Redlands, Yucaipa, or San Bernardino County.

The City and San Bernardino County (within the Valley Region) use LOS D as their minimum LOS standard for intersection operations. Thus, study intersections in these jurisdictions operating at LOS E or F are required to be mitigated to LOS D or better. In addition, the City requires that each turning movement operate at a volume-to-capacity ratio of less than 1.05. (LSA, p. 11)

The cities of Redlands and Yucaipa use LOS C as their minimum LOS standard for intersection operations. Thus, study intersections under these jurisdictions operating at LOS D, E, or F are required to be mitigated to LOS C or better. The TIA guidelines require that a traffic study provide recommendations for circulation improvements when any facility operates at a LOS below the target, regardless of whether the deficiency is a background condition or caused by the project. (LSA, p. 11)

Caltrans endeavors to maintain between LOS C and D at all intersections under its jurisdiction. This has been interpreted to mean that a maximum average delay at a Caltrans intersection exceeding 45 seconds is considered an impact (30 seconds for unsignalized ramps). For freeway segments and merge/diverge areas, Caltrans has consistently used LOS E as acceptable on their own projects in the counties of San Bernardino, Riverside and Los Angeles. In some instances, Caltrans has even recognized LOS F as acceptable. Thus, for freeway facilities, the CMP defined LOS standard of LOS E has been applied. (LSA, p. 11)

Internal Roadway Network

The TIA evaluates build-out of the Project (without and with Newport Avenue Avenue/SR-38 Connection) conditions. **Figure 3-11** illustrates the conceptual circulation plan for the Project and shows the locations of the internal study intersections (LSA, p. 49).

As part of the Project, Greenspot Road will be realigned and extended into the northwest portion of the Project site. The extension of Greenspot Road will ultimately provide primary access to the Project site via the intersection of (New) Greenspot Road and (Old) Greenspot Road. Primary access will also be provided via the intersection of Garnet Street and Newport Road. At Project build-out, the internal street network will be developed and Newport Road will be extended through the southern portion of the site to Mill Creek at the southeast Project boundary. (LSA, pp. 2-3)

Traffic Volumes

Background traffic volumes for the internal network were developed based on traffic volumes at the intersections providing access to the Project. Traffic volumes for these intersections were developed based on the SANBAG's volume development methodology. Under build-out with the Project (without Newport Avenue Avenue/SR-38 Connection) conditions, traffic volumes from the intersections of (New) Greenspot Road/(Old) Greenspot Road and Greenspot Road-Garnet Street/Newport Avenue were used. For build-out with the Project (with Newport Avenue Avenue/SR-38 Connection) conditions, traffic volumes from the intersections of (New) Greenspot Road/(Old) Greenspot Road, Greenspot Road-Garnet Street/Newport Avenue, and Newport Avenue/SR-38 were used. Project trips were added to the

background traffic volumes to develop build-out with the Project (without and with Newport Avenue Avenue/SR-38 Connection) traffic volumes. (LSA, p. 51)

Internal LOS Analysis

Based on discussion with City staff, roundabouts within the study area were evaluated using SIDRA Intersection software version 5.1. Additionally, all study area roundabouts are defined based on the design guidelines contained in National Cooperative Highway Research Program Report (NCHRP) 672: *Roundabouts: An Informational Guide* (Transportation Research Board, 2010). For the remaining intersections, the HCM2000 analysis methodologies were used to determine intersection LOS, and LOS at stop-controlled intersections were calculated using Traffix version 8.0. (LSA, p. 51)

Cumulative Projects Traffic

In order to account for known development projects in the area, the cities of Highland, Yucaipa, and Redlands provided cumulative project information to be included in the TIA. Both the City of San Bernardino and San Bernardino County said that no cumulative projects are currently planned in the study area. (LSA, p. 14) **Table 5.16-G – Cumulative Projects** shows the Project considered in this analysis, and the location of these projects are shown in Figures 16 through 18 of the TIA and **Figure 7-1 through 7-3– Cumulative Projects Location Map**, in Section 7 of this DEIR.

Table 5.16-G – Cumulative Projects

No.	Project Name	Land Use	Project Size (units)
City of Highland			
A	Santa Ana River Wash	Cement Plant	--
B	Blossom Trails	Single Family Residential Residential Condominium	14 DU 306 DU
C	Calvary Chapel Church	Church	--
D	121 SFD Gated Community	Single Family Residential	121 DU
E	San Manuel Village – Partial Built	Restaurant with Drive Through Restaurant Bank with Drive Through Restaurant with Drive Through	3.50 TSF 5.80 TSF 5.20 TSF 5.00 TSF
F	Highland Crossroads	Retail Bank with Drive Through	42.84 TSF 5.00 TSF
G	30,000 SF Retail Center at Boulder Avenue/Greenspot Road	Fast Food Retail	14.38 TSF 16.33 TSF
H	Centerstone – 133 SFH	Residential	133 DU
I	Greenspot Village & Marketplace	Residential/Retail	--
J	Fresh & Easy	Retail	14.25 TSF
K	Dairy Queen	Restaurant with Drive Through	2.24 TSF
L	Walmart Expansion	Retail	--
M	Denny’s	Specialty Retail Sit Down Restaurant	17.20 TSF 4.80 TSF
N	William Homes	Residential	36 DU
O	Industrial Center on Palm	Industrial	39.75 TSF
P	Farmer Boys	Restaurant with Drive Through	3.6 TSF

No.	Project Name	Land Use	Project Size (units)
Q	Greenspot Retail Office	Retail	5.00 TSF
R	Chong Homes	Residential	5 DU
S	Orange New Jersey Pro Office/Professional/Warehouse	Industrial Park	126.9 TSF
T	Berry St. Peters (Light Industrial Building)	General Light Industrial	8.6 TSF
U	Randal Brank (Medical Office Addition)	Medical-Dental Office Building	25.0 TSF
V	St. Adelaide's Expansion – New Ministry Offices	General Office Building	9.0 TSF
W	Jack Lanphere (Industrial Buildings)	General Light Industrial	25.0 TSF
X	CT Reality Corporation (Business Park)	Business Park	85.0 TSF
Y	KZ Holdings (Mixed Use)	Residential	64 DU
Z	Town Center Retail (Family Dollar)	Shopping Center	101.3 TSF
AA	Immanuel Baptist Church	Church	90.00 TSF
AB	Gas Station and Motel Expansion	Convenience Store Motel	4.3 TSF 38 Units
AC	Village Commercial	Shopping Center	9.9 TSF
AD	Commercial Retail Center	Shopping Center	6.0 TSF
AE	Peter Le (Residential)	Single Family-Detached	8 DU
AF	Hispano Investor (Residential)	Single Family-Detached	17 DU
AG	Golden Security Bank (Residential)	Single Family-Detached	11 DU
AH	North American Residential	Single Family-Detached	8 DU
AI	Ross Jones (Residential)	Single Family-Detached	4 DU
AJ	South Terminus of Lillian Lane (Residential)	Single Family-Detached	13 DU
AK	Wright (Residential)	Single Family-Detached	50 DU
AL	Assisted Living Facility	Senior Housing ²	88 DU
AM	Alta Vista and Santa Ana	Single Family-Detached	56 DU
AN	Southeast Corner of Base Line and Siene Avenue	Retail	23.5 TSF
AO	Northwest Corner of Base Line and Boulder Avenue (Kevin Chong)	Bank	5.2 TSF
AP	Pepito's	Restaurant/Commercial	Remodel
City of Redlands			
A	Research/Lugonia/Almond	Industrial Park	880.1 TSF
B	South of I-10/West of California St.	Shopping Center	51.1 TSF
C	NE of Plum Ln. & Idaho St.	General Office Building	8.1 TSF

No.	Project Name	Land Use	Project Size (units)
D	South of Orange Tree Ln./West of Nevada St.	General Office Building	51.4 TSF
E	South of Lugonia Avenue West of Nevada St.	Hotel	102 RMS
F	415-495 Park Ave.	Medical-Dental Office Building	122.6 TSF
G	NE of Alabama St. & Orange Ave.	Condominium/Townhomes	77 DU
H	NE of Orange Ave & Kansas St.	Senior Adult Housing-Attached	160 DU
I	Buckeye between Pioneer, Palmetto & Riverbluff	High-Cube Warehouse	1,100.0 TSF
J	Buckeye between Pioneer, Palmetto & Riverbluff	High-Cube Warehouse	205.0 TSF
K	SW of Tennessee St. & Lugonia Ave.	Shopping Center	8.05 TSF
L	South of Redlands Blvd./ West of Kansas St.	Self-Service Car Wash	7 STALL
M	708 Brookside Ave.	General Office Building	7.00 TSF
N	520 Brookside Ave.	Church	15.1 TSF
O	North of San Bernardino Ave.	High-Cube Warehouse	500.0 TSF
P	NE of Texas St/Third St.	Residential	12 DU
Q	S of I-10 & W of Eureka St.	Shopping Center	150.3 TSF
R	S of Pearl Ave between Eureka St. & Third St.	Shopping Center	18.2 TSF
S	SE of Lugonia Ave & Orange St.	Shopping Center	6.75 TSF
T	1135 Orange St.	Shopping Center	3.24 TSF
U	SW of Lugonia Ave. & Church St.	Condominium Townhomes	37 DU
V	SE of Lugonia Ave & Occidental	Residential	12 DU
W	S of San Bernardino Ave./W of Grove St.	Residential	10 DU
X	Between San Bernardino & Pioneer/E of Deanna Way	Residential	26 DU
Y	N of San Bernardino Ave./ W of Judson St	Residential	74 DU
Z	S of Palmetto/E of Alabama	Residential	33 DU
AA	S of Palmetto & East of Alabama Ave.	High-Cube Warehouse	200.0 TSF
AB	N of San Bernardino Ave. & E of California St.	High-Cube Warehouse	500.0 TSF
AC	SE of New York/San Bernardino Ave.	Residential	121 DU
AD	N of Palmetto between Nevada and Alabama	High-Cube Warehouse	535.0 TSF
AE	Mountain Grove – San Bernardino & Alabama (County)	Shopping Center Hotel Multiplex Movie Theater	595.0 TSF 78 RMS 3,500 Seats
AF	NW Corner of Almond & Alabama (County)	Shopping Center High-Turnover (Sit-Down) Restaurant General Office Building	11.5 TSF 15.0 TSF 149.0 TSF

No.	Project Name	Land Use	Project Size (units)
		Hotel	180 RMS
AG	Redlands Commerce Center (County)	General Office Building Shopping Center Hotel	60.8 TSF 60.8 TSF 244 RMS
AH	NE of Orange St. & Lugonia Ave.	Residential	228 DU
AI	1020-1050 Nevada	Industrial Park	63.6 TSF
AJ	Madeira Ave W. of Sapphire	Residential	27 DU
AK	SW Corner of San Bernardino Ave. & Wabash	Residential	76 DU
AL	SE Corner of Grove St. & Sylvan Blvd.	Condominium/Townhomes	40 DU
AM	1020-1050 Nevada	Industrial Park	141.0 TSF
AN	1222 Indiana Ct.	General Light Industrial	5.6 TSF
AO	NE of Wabash Ave. & Nice Ave.	Mini-Warehouse	60.9 TSF
AP	North of Palmetto, west of Alabama	General Light Industrial	48.0 TSF
AQ	Nevada St. & Palmetto Ave. (County)	High-Cube Warehouse	400.0 TSF
AR	Southwest of Almond Ave. & San Bernardino Ave	High-Cube Warehouse	703.0 TSF
AS	560 W. Colton Ave.	Shopping Center	3.2 TSF
AT	Northeast of Occidental Drive	Residential	36 DU
AU	Northwest of Tennessee & San Bernardino Ave.	Shopping Center	275.0 TSF
AV	North side of Pioneer Ave, between California St. & Nevada St.	High-Cube Warehouse	809.3 TSF
AW	600 W. San Bernardino Ave.	General Office Building	14.0 TSF
AX	1776 Park Avenue	Medical-Dental Office	52.6 TSF
AY	Alessandro Road/ Sunset Hills	Single Family Residential	27 DU
AZ	500 East Citrus	Recreational Center	21.0 TSF
BA	CUP 10-04	General Light Industrial	42 TSF
BB	CUP 10-02	Self Service Car Wash	3 STALLS
BC	Center Street/Burke Street	Single Family Residential	15 DU
BD	Santa Fe Depot	Retail/Fast Food	5.7 TSF
BE	Ford Street/Patricia Drive	Church	20.5 TSF
City of Yucaipa			
A	TTM 14429	Residential	57 DU
B	TTM 14297	Residential	33 DU
C	TTM 17031	Residential	33 DU
D	TTM 16067	Residential	35 DU
E	TTM 17642	Residential	40 DU
F	TTM 16785	Residential	36 DU
G	07-240/CUP	Commercial	87.1 TSF
H	10-092/CUP	Commercial	196.0 TSF
I	08-131/CUP	Church School	60.0 TSF 30.0 TSF
J	TTM 18114	Residential	37 DU

No.	Project Name	Land Use	Project Size (units)
K	09-069/CUP	Condominium/Townhomes	77 DU
L	TTM 15884	Residential	198 DU
M	TTM 16470	Residential	49 DU
N	TTM 18174	Residential	70 DU
O	TTM 18208	Residential	42 DU
P	Freeway Corridor Specific Plan	Residential	1,487 DU
		Multi-Family Residential	960 DU
		Commercial	172 AC
		Business Park	26 AC

Source: LSA, Tables E, F, and G

Notes: TSF = thousand square feet; DU = dwelling unit; RMS = rooms

To account for these projects, the socioeconomic data included in the traffic model was evaluated to verify that the cumulative projects are included in the traffic model. Projects that were not included in the model were added to the model’s socio-economic data. This methodology incorporates the interactions between different land uses and avoids double counting of trips from cumulative projects. This also provides a defensible tool for CEQA compliance as identified in CEQA Section 15130, Discussion of Cumulative Impacts, which states that “... a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.” (LSA, p. 14)

5.16.5.2 Traffic Projections

Traffic projections in the TIA considered several factors, such as ambient growth, Project trip generation, trip distribution, and trip assignment. Understanding these factors is important in order to properly analyze the Project’s contribution to traffic load and capacity.

Traffic Model

The CMP guidelines require that an analysis be conducted utilizing forecast traffic data from an approved local or regional traffic model. Based on discussion with City staff, SCAG’s RTP traffic model was used for the Project’s TIA analysis instead of the East Valley Traffic Model (EVTM), as the EVTM is based on the TranPlan modeling platform which is no longer supported by SCAG. However, the EVTM dataset was included in the modified SCAG RTP model because the EVTM includes the City’s General Plan and the most current land use policies and zoning information as well as Traffic Analysis Zones (TAZs). The City’s socioeconomic data was also incorporated for TAZs within the City for the future (2035) model. In the vicinity of the Project, TAZs were further divided so that the future circulation networks and land uses are included. Cumulative projects that were not reflected in the base model were also included in the model. Comparing the modified SCAG RTP model with the EVTM, the traffic

volumes derived from the modified SCAG RTP model are generally higher than those from the EVT⁶. (LSA, p. 6)

Two future year (2035) model runs were developed to account for variations in the circulation network anticipated in the two scenarios analyzed for the Project, i.e., one future model run was used to develop traffic volumes in a scenario without a Newport Avenue/SR-38 Connection and the second model run was developed for a scenario with a Newport Avenue/SR-38 Connection. Both models include the extension of 3rd Street as a one-way link (eastbound only) connecting to the intersection of Church Avenue/5th Street. (LSA, p. 6)

Ambient Growth

Ambient or background growth accounts for unknown area growth in traffic volumes due to development outside of the Project site, and general growth resulting in traffic due to changes in neighboring communities that cannot be accurately modeled. The CMP guidelines require examination of Project traffic impacts under opening year conditions and forecast year 2035 conditions. The year 2035 traffic volumes for the Project were developed using the modified SCAG RTP model discussed above. The methodology used to post-process model volumes in order to determine peak hour intersection volumes for the year 2035 conditions is also consistent with SANBAG's procedures. Additionally, year 2035 study area freeway segments traffic volumes were also developed using the same post-processing methodology. (LSA, pp. 8-9)

The methodology employed for passenger vehicles to determine the a.m. and p.m. peak hour intersection turn movements for year 2035 without the Project conditions is enumerated in the following (LSA, pp. 8-9):

1. The difference between the modeled 2008 and 2035 peak period directional arterial traffic volumes (for each intersection approach and departure) was identified from loaded "without Project" network model plots. This difference defines the growth in traffic over the 27-year period.
2. The incremental growth in peak period approach and departure volumes was factored to develop the incremental change in peak hour volumes. The SCAG model uses a three-hour a.m. peak period and a four-hour p.m. peak period. SCAG has established that the a.m. peak hour comprises 38 percent of the peak period and the p.m. peak hour comprises 28 percent of the peak period. These conversion factors are also consistent with the CMP guidelines. Thus, the incremental changes in peak period volumes were multiplied by the appropriate factor to develop incremental changes in peak hour volumes.
3. The incremental growth in approach and departure volumes between 2008 and 2035 was factored to reflect the forecast growth between the year of the ground counts (2011 in PCEs) and 2035. For this purpose, linear growth between the 2011 base condition and the forecast 2035

⁶ While SCAG has since released the San Bernardino Traffic Analysis Model, that model was not available when analysis for this Project was started. Even so, it should be noted that the forecast volumes on major roadways from the modified SCAG RTP model used for this Project are very similar to those forecast by the new area model

condition was assumed. Since the increment between 2011 and 2035 is 24 years of the 27-year time span, a factor of 0.889 (i.e., 24/27) was used.

4. The forecast growth in approach and departure volumes to 2035 was added to the 2011 ground counts, resulting in post-processed forecast year 2035 link volumes.
5. Forecast year 2035 a.m. and p.m. peak hour turn volumes were developed using existing turn volumes and the future approach and departure volumes based on the methodologies contained in NCHRP 255: *Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board, December 1982). At locations where existing turning movements were not available, turning movements from a similar nearby intersection were used as the basis for iteration using the NCHRP 255 methodology.

Trip Generation

Total vehicle trip generation for the Project was developed using rates from ITE's *Trip Generation Handbook* (9th Edition). Specifically, the rates for Land Use 210 (Single-Family Detached Housing), Land Use 230 (Residential Condominium/Townhouse), Land Use 520 (Elementary School), Land Use 495 (Recreational Community Center), and Land Use 820 (Shopping Center) (LSA, p. 11).

Internal Trips

Internal trips for a development site are trips that are made internally within the development without using roadways outside the Project site. Although trips that are from the same land use (e.g., a trip from one residence within the Project to another) are also internal trips, the number of internal trips increases when the Project includes multiple uses. The Project includes residential development, a school, various parks and also retail uses. As a result, it is likely to generate a significant number of internal trips. (LSA, p. 12)

ITE's *Trip Generation Handbook* uses internal trip capture for the interaction among residential, retail, and office uses only. Since this Project includes a school as well as other amenities which are not included in the ITE internal trip capture methodology, the ITE methodology would not reflect accurately the trips that are likely to remain internal to a Project. To determine the internal trip capture from the Project, the traffic model was first used to estimate the number of internal trips. The model showed that the p.m. peak hour internal trip capture rate was approximately 35 percent. However, based on discussion with City staff, this number was modified to show a lower internal trip capture rate to present a more conservative analysis. The following methodology was used to determine internal trip capture (LSA, p. 12):

Based on consultation with City staff, it was determined that trips to and from the neighborhood parks would be internal to the Project, and trips to and from the elementary school are likely to be internal to the Project. Moreover, based on discussion between the City and the school consultant for the Project, 15 percent of the trips generated by the proposed elementary school were considered as external trips to account for teachers and staff. Trips for the on-site public park and recreation center are anticipated to be internal to the Project. These are also substantiated by the traffic model. All trips generated by the soccer complex were treated as external to the Project and no reductions were taken. Internal trips for the retail parcels within the Project were calculated based on the output of the select zone model runs.

The percentage of internal trips was calculated by comparing retail traffic leaving the site and comparing it with the total trip generation of the retail TAZs. (LSA, p. 12)

For residential uses, the model showed an internal absorption of approximately 35 percent. Based on discussion with City staff, the 35 percent internal capture for residential uses was considered high. To present a conservative analysis, residential internal credits were based on the internal trips for other on site uses that would generate internal trips (e.g., parks, school, recreation center, and the internal trips calculated for retail uses). This approach resulted in a residential trip capture of approximately 16 percent in the a.m. peak hour, 11 percent in the p.m. peak hour, and 27 percent for the daily trips. The inbound internal trips for all other uses were credited as outbound trips for the residential uses and the outbound internal trips for other uses were credited as inbound trips for residential uses to maintain directional balance between internal origins and destinations. This methodology does not take credit for residential to residential trips, and therefore presents a conservative approach in terms of net external trips. (LSA, p. 12)

Overall, approximately 26 percent of the a.m. peak hour trips, 17 percent of the p.m. peak hour trips, and 19 percent of the daily trips are forecast to remain internal to the Project site. (LSA, p. 12) These percentage internal trip captures are on the low side which means that the net external trips are higher, presenting a reasonably worst-case analysis for CEQA.

Pass-by Trips

Retail establishments typically draw some trips from traffic passing the site on an adjacent street. These trips are not “new” trips made for the sole purpose of visiting the retail use but are trips made as an intermediate stop en route to an ultimate destination. These trips are referred to as “pass-by” trips and only affect traffic at the Project driveways. Pass-by trip rates are not available for the a.m. peak hour, and thus, no reductions were used. The retail trip generation (after accounting for internal trips) was reduced by 34 percent for the p.m. peak hour and 28 percent for the daily based on data published in ITE’s *Trip Generation Handbook*, 2nd Edition. The pass-by traffic estimates were compared to the forecast non-Project background traffic volumes on the adjacent roadway network to verify if there would be sufficient traffic to allow pass by reductions. (LSA, pp. 12-13)

Table 5.16-H shows the trip generation rates used for the analysis.

Table 5.16-H – Project Generation Rates

Land Use	ITE Code	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	210	DU	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Recreation Community Center	495	TSF	1.35	0.70	2.05	1.35	1.40	2.75	33.82
Internal Trips ^a	-	Vehicle Trip	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Elementary School	520	Students	0.25	0.20	0.45	0.07	0.08	0.15	1.29
Internal Trips ^b	-	Vehicle Trips	0.85	0.85	0.85	0.85	0.85	0.85	0.85
City Park	411	Acres	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Internal Trips ^c	-	Vehicle Trips	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Residential Condominium / Townhome	230	DU	0.07	0.37	0.44	0.35	0.17	0.52	5.81
Soccer complex	488	Fields	0.64	0.48	1.12	11.86	5.84	17.70	71.33

Land Use	ITE Code	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Shopping Center	820	TSF	0.60	0.36	0.96	1.78	1.93	3.71	42.70
Internal Trips ^d	-	Vehicle Trips	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Pass-By ^e	-	Vehicle Trips	0.00	0.00	0.00	50%	50%	0.34	0.28

Source: LSA, Table C

Notes: TSF = thousand square feet; DU = dwelling unit

^a Recreation center is a community facility available only to residents of the Project; all trips are internal to the Project.

^b 15 percent of the trips generated by the proposed elementary school are external to the Project.

^c Areas designated as open space were analyzed using trip generation rates for City Park. Because amenities typically provided on park uses would not exist on areas designated as open space, all trips would remain internal to the Project.

^d Internal trips were developed using SCAG 2035 model's select zone trip assignment for commercial uses.

^e Pass-by rates based on Land Use 820 - Shopping Center from the ITE *Trip Generation Handbook*, 2nd Ed. A pass-by rate of 34 percent was used for the p.m. peak hour with 50 percent entering and 50 percent existing.

Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic traveling to and leaving from the Project site. Trip distribution is heavily influenced by the geographical location of the site, the locations of surrounding land uses, and proximity to the regional freeway system. Project trip distribution patterns were developed using the traffic model's select zone trip assignment for the TAZs representing the Project. The select zone trip assignment generated by the model is based on the assumption that all developable land will be developed, thereby creating destinations for Project trips. However, it is unlikely that all developable land in the study area will be built out prior to 2035 (i.e., during the interim years considered in the phased analysis). Thus, the probability that Project trips would be absorbed by the land uses as shown in the model is low. It is more likely that Project trips would need to travel farther than indicated by the traffic model to destinations such as employment, shopping, dining, and other services. To present a worst case analysis, absorption factors were modified from those shown in the model for Phases I through III and Phases IV through V. Additionally, a separate trip distribution was developed for the Newport Avenue/SR-38 connection scenario analysis. The trip distribution was discussed with City staff. Figure 6 in the TIA illustrates the Project trip distribution patterns for Phases I, II and III. Figure 7 in the TIA illustrates the Project trip distribution patterns for Phases IV and V. Figure 8 in the TIA illustrates the Project trip distribution patterns for Phases IV and V with the Newport Avenue/SR-38 connection. The Project trip generation was applied to the trip distribution patterns for the Project to develop trip assignments for new Project trips. Figures 9, 10, 11, 12, and 13 in the TIA illustrate the overall trip assignment for Project trips under Phase I (2015), Phase II (2017), Phase III (2019), Phase IV (2021), and Phase V (2023 and 2035) completion conditions, respectively. Figures 14 and 15 in the TIA illustrate the overall trip assignment for project trips with the Newport Avenue/SR-38 connection under Phase IV (2021) and Phase V (2023 and 2035) completion conditions, respectively. (LSA, p. 13)

For the internal circulation analysis, the general trip distribution pattern for all the Project trips under build-out conditions (without Newport Avenue Avenue/SR-38 Connection) were allocated at a rate of approximately 56 percent of Projects trips to the intersection of New Greenspot Road/Old Greenspot Road and approximately 44 percent of Project trips to the intersection of Greenspot Road-Garnet Street/Newport Avenue. Under build-out conditions (with Newport Avenue Avenue/SR-38 Connection)

approximately 50 percent of Project trips were allocated to the intersection of New Greenspot Road/Old Greenspot Road, approximately 41 percent of Project trips to the intersection of Greenspot Road-Garnet Street/Newport Avenue, and approximately 9 percent of Project trips to the intersection of Newport Avenue/SR-38. (LSA, p. 50)

Internal trip distribution patterns for Project traffic were developed using the SCAG RTP model select zone trip assignment for the TAZs representing the Project. The Project was divided into nine select zones, with each zone representing a group of planning areas having similar characteristics. For each zone, distribution patterns on the internal circulation network were applied to the respective planning area. Because some Project trips would remain inside the Project area, an internal trip distribution (for Project trips staying inside the Project area) was developed based on the traffic volumes between all possible origin-destination pairs for Project-internal zones. (LSA, pp. 50-51)

For full Project build-out (with and without the Newport Avenue/SR-38 Connection) conditions, the trip generation for each planning area was applied to the trip distribution patterns to develop trip assignments on the internal roadway network. Figure 53 in the TIA shows Project trip assignment for internal Project trips. Figure 54 in the TIA shows the Project trip assignment for Project trips traveling outside the Project area under build-out with Project (without Newport Avenue Avenue/SR-38 Connection) conditions. Figure 55 in the TIA shows the total Project assignment on the internal roadway network under build-out with project (without Newport Avenue Avenue/SR-38 Connection) conditions. Under full Project build-out with Newport Avenue/SR-38 Connection scenario, the Project trip assignment for Project trips remaining internal to the Project would be the same as the without the Newport Avenue/SR-38 Connection. Figure 56 in the TIA shows the Project trip assignment for Project trips traveling outside the Project area under build-out with Project (with Newport Avenue Avenue/SR-38 Connection) conditions. Figure 57 in the TIA shows the total Project assignment on the internal roadway network under build-out with Project (with Newport Avenue Avenue/SR-38 Connection) conditions. (LSA, p. 51)

5.16.5.3 Project Impacts

Due to the repetitive nature of the information and analysis presented herein, the first two thresholds listed in Section 5.16.2 have been combined, as presented below, and are analyzed simultaneously.

Threshold: *Would the Project: conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit; or conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

LOS Standards

As previously discussed in Section 5.16.5.1, above, the CMP standard is LOS E; however, the CMP allows local discretion and requirements to be used to determine project impacts and appropriate mitigation at

study intersections. The LOS standards of jurisdictions that will be affected by the Project are as follows (LSA, p. 11):

- Caltrans: between LOS C and LOS D at all intersection which is interpreted as a maximum average delay exceeding 45 seconds at intersections (30 seconds for an unsignalized ramp); LOS E for freeway segments and merge-diverge areas
- City of Highland and San Bernardino County (within Valley Region): LOS D; the City of Highland also requires each turning movement operate at a volume-to-capacity ratio of less than 1.05
- Cities of Redlands and Yucaipa: LOS C

Project Trip Generation

Table 5.16-I – Project Trip Generation summarizes the peak hour and daily Project trip generation for the Project.

Table 5.16-I – Project Trip Generation

	A.M. Peak Hour			P.M. Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Gross Trip Generation	1,012	2,162	3,174	2,666	1,793	4,459	43,931
Internal Trips							
Residential	(175)	(237)	(412)	(197)	(181)	(378)	(4,107)
City Park	0	0	0	0	0	0	(52)
Recreation Center	(22)	(11)	(33)	(22)	(22)	(44)	(541)
Elementary School	(178)	(142)	(320)	(51)	(57)	(108)	(914)
Commercial	(37)	(22)	(59)	(108)	(118)	(226)	(2,600)
Pass-By Trips	0	0	0	(104)	(104)	(207)	(1,968)
Net Trip Generation	600	1,750	2,350	2,185	1,312	3,496	33,749

Source: LSA, Table D

Table D of the TIA presents the peak hour and daily Project trip generation for each planning area of the Project (with the Commercial Overlay). As summarized below, the Project is expected to generate (LSA, p. 13):

- Phase I: 649 trips in a.m. peak hour, 865 trips in p.m. peak hour, and 8,101 daily trips;
- Phase II: 426 trips in a.m. peak hour, 753 trips in p.m. peak hour, and 6,957 daily trips;
- Phase III: 713 trips in a.m. peak hour, 1,059 trips in p.m. peak hour, and 10,798 daily trips;
- Phase IV: 191 trips in a.m. peak hour, 278 trips in p.m. peak hour, and 2,699 daily trips;
- Phase V: 371 trips in a.m. peak hour, 541 trips in p.m. peak hour, and 5,194 daily trips;
- Full build out: 2,350 trips in a.m. peak hour, 3,496 PCE trips in p.m. peak hour, and 33,749 daily PCE trips.

Project Impacts on Roadway Intersections

Off-Site Intersections

This part of the discussion analyzes the Project’s impact on existing (2011) conditions and in each of the anticipated completion years by phase (i.e., Phase I in year 2015, Phase II in year 2017, Phase III in year

2019, Phase IV in year 2021, and Phase V in year 2023) and on long-term (2035) conditions with full Project build out. Moreover, the latter three conditions (i.e., Phase IV, Phase V, and long-term conditions) are also analyzed in the event the Newport Avenue/SR-38 connection is constructed.

Existing (2011) Conditions with Project

An LOS analysis was conducted to evaluate projected circulation system performance with implementation of the full Project in the existing (2011) condition. **Table 5.16-C**, above, shows the existing LOS at the study intersections. As shown below, the following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 14-15):

<u>2011 Without the Project</u>	<u>2011 With the Project</u>
<ul style="list-style-type: none">• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)	<ul style="list-style-type: none">• 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);• 12. Webster Street/Greenspot Road (a.m. and p.m. peak hours);• 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours);• 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);• 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours);• 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. peak hour);• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);• 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); and• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours).

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2015 with and without Phase I Project Conditions

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase I of the Project. Table I in the TIA shows the year 2015 with and without the Project at the study area intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 15-16):

<u>2015 Without the Project</u>	<u>2015 With the Project</u>
<ul style="list-style-type: none">• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);	<ul style="list-style-type: none">• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);

- 32. Garnet Avenue/SR-38 (p.m. peak hour); and
- 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)
- 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); and
- 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2017 with and without Phase II Project Conditions

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase II of the Project. Table J in the TIA shows the year 2017 with and without the Project at the study area intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 16-17):

<u>2017 Without the Project</u>	<u>2017 With the Project</u>
<ul style="list-style-type: none">• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 32. Garnet Avenue/SR-38 (p.m. peak hour);• 34. Bryant Street/SR-38 (p.m. peak hour); and• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)	<ul style="list-style-type: none">• 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);• 13. Boulder Avenue/Greenspot Road (p.m. peak hour);• 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);• 17. Alta Vista/Greenspot Road (a.m. peak hour);• 18. Greenspot Road-Garnet Street/Newport Avenue (a.m. and p.m. peak hours);• 19. Orange Street/SR-38 (a.m. peak hour);• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);• 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours);• 34. Bryant Street/Oak Glen Road (a.m. peak hour); and• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours).

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2019 with and without Phase III Project Conditions

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase III of the Project. Table K in the TIA shows the year 2019 with and without the Project at the study area intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 17-18):

<u>2019 Without the Project</u>	<u>2019 With the Project</u>
<ul style="list-style-type: none">• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);• 32. Garnet Avenue/SR-38 (p.m. peak hour);• 34. Bryant Street/Oak Glen Road (a.m. peak hour); and• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours)	<ul style="list-style-type: none">• 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour);• 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);• 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours);• 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);• 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours);• 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours);• 19. Orange Street/SR-38 (a.m. peak hour);• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);• 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours);• 34. Bryant Street/Oak Glen Road (a.m. peak hour);• 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); and• 39. (New) Greenspot Road/(Old) Greenspot Road (a.m. and p.m. peak hours)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2021 with and without Phase IV Project Conditions

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase IV of the Project. Table L in the TIA shows the year 2021 with and without the Project at the study area intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 18-19):

<u>2021 Without the Project</u>	<u>2021 With the Project</u>
<ul style="list-style-type: none">• 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);• 19. Orange Street/SR-38 (a.m. peak hour);• 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);• 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);	<ul style="list-style-type: none">• 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour);• 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);• 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours);• 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);

- | | |
|--|---|
| <ul style="list-style-type: none"> • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); and • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours) | <ul style="list-style-type: none"> peak hours); • 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours); • 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours); • 19. Orange Street/SR-38 (a.m. peak hour); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 33. Bryant Street/SR-38 (a.m. peak hour); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); and • 39. (New) Greenspot Road/(Old) Greenspot Road (a.m. and p.m. peak hours) |
|--|---|

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2023 with and without Phase V Project Conditions

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase V of the Project. Table M in the TIA shows the year 2023 with and without the Project at the study area intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 19-20):

- | <u>2023 Without the Project</u> | <u>2023 With the Project</u> |
|--|---|
| <ul style="list-style-type: none"> • 7. SR-210 Eastbound Ramps/5th St-Greenspot Road (p.m. peak hour); • 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour); • 19. Orange Street/SR-38 (a.m. peak hour); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); and • 36. Sand Canyon Road-14th Street/Yucaipa | <ul style="list-style-type: none"> • 5. Palm Avenue/5th Street (p.m. peak hour); • 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour); • 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour); • 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours); • 15. Church Street/Greenspot Road (a.m. peak hour); • 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours); • 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours); • 18. Greenspot Road-Garnet Avenue/Newport |

Boulevard (a.m. and p.m. peak hours)

Avenue (a.m. and p.m. peak hours);

- 19. Orange Street/SR-38 (a.m. and p.m. peak hours);
- 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);
- 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);
- 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours);
- 33. Bryant Street/SR-38 (a.m. and p.m. peak hours);
- 34. Bryant Street/Oak Glen Road (a.m. peak hour);
- 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); and
- 39. (New) Greenspot Road/(Old) Greenspot Road (a.m. and p.m. peak hours)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Long-Term (2035) Conditions with and without the Project

An LOS analysis was conducted to evaluate projected circulation system performance of the long-term (2035) conditions with the completion of the Project. Table N in the TIA shows the year 2035 with and without the Project at the study intersections. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 21-22):

2035 Without the Project

- 5. Palm Avenue/5th Street (p.m. peak hour);
- 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour);
- 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);
- 17. Alta Vista/Greenspot Road (a.m. peak hour);
- 19. Orange Street/SR-38 (a.m. and p.m. peak hours);
- 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);
- 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);
- 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours);
- 33. Bryant Street/SR-38 (a.m. peak hour);
- 34. Bryant Street/Oak Glen Road (a.m. and p.m. peak hour);

2035 With the Project

- 5. Palm Avenue/5th Street (p.m. peak hour);
- 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour);
- 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);
- 13. Boulder Avenue/Greenspot Road (p.m. peak hour);
- 15. Church Street/Greenspot Road (a.m. peak hour);
- 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours);
- 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours);
- 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours);
- 19. Orange Street/SR-38 (a.m. and p.m. peak hour);

- | | |
|--|---|
| <p>peak hours); and</p> <ul style="list-style-type: none"> • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours) | <ul style="list-style-type: none"> • hours); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 33. Bryant Street/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. and p.m. peak hours); • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); and • 39. New Greenspot Road/Old Greenspot Road (a.m. and p.m. peak hours). |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

The following conditions are based on the scenario that the Newport Avenue/SR-38 connection is realized:

Year 2021 (with SR-38 Connection) with and without Phase IV Project Conditions⁷

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase IV of the Project and Newport Avenue/SR-38 connection. Table O in the TIA shows the year 2021 with and without the Project at the study area intersections with the Newport Avenue/SR-38 connection. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 22-23):

- | <u>2021 Without the Project</u> | <u>2021 With the Project</u> |
|--|--|
| <ul style="list-style-type: none"> • 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour); • 19. Orange Street/SR-38 (a.m. peak hour); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hour); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); and • 36. Sand Canyon Road-14th Street/Yucaipa | <ul style="list-style-type: none"> • <u>5. Palm Avenue/5th Street (p.m. peak hour);</u> • 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour); • 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour); • 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours); • 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours); • 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours); |

⁷ For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

Boulevard (a.m. and p.m. peak hours)

- 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours);
- 19. Orange Street/SR-38 (a.m. and p.m. peak hours);
- 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);
- 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);
- 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours);
- 33. Bryant Street/SR-38 (a.m. and p.m. peak hours);
- 34. Bryant Street/Oak Glen Road (a.m. peak hour);
- 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); and
- 39. (New) Greenspot Road/(Old) Greenspot Road (a.m. and p.m. peak hours).

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2023 (with SR-38 Connection) with and without Phase V Project Conditions⁸

An LOS analysis was conducted to evaluate projected circulation system performance with the completion of Phase V of the Project and Newport Avenue/SR-38 connection. Table P in the TIA shows the year 2023 with and without the Project at the study area intersections with the Newport Avenue/SR-39 connection. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 23-25):

2023 Without the Project

- 5. Palm Avenue/5th Street (p.m. peak hour);
- 7. SR-210 Eastbound Ramps/5th St-Greenspot Road (p.m. peak hour);
- 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);
- 19. Orange Street/SR-38 (a.m. peak hour);
- 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours);
- 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour);

2023 With the Project

- 5. Palm Avenue/5th Street (p.m. peak hour);
- 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour);
- 8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);
- 13. Boulder Avenue/Greenspot Road (a.m. and p.m. peak hours);
- 15. Church Street/Greenspot Road (a.m. peak hour);
- 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hour);

⁸ For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

- | | |
|---|--|
| <ul style="list-style-type: none"> • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); and • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours) | <ul style="list-style-type: none"> peak hours); • 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours); • 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours); • 19. Orange Street/SR-38 (a.m. and p.m. peak hours); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 33. Bryant Street/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. peak hour); • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); • 39. (New) Greenspot Road/(Old) Greenspot Road (a.m. and p.m. peak hours); and • <u>40. Newport Avenue/SR-38 (p.m. peak hour)</u> |
|---|--|

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Long-Term (2035) (with SR-38 Connection) Conditions with and without the Project⁹

An LOS analysis was conducted to evaluate projected circulation system performance of the long-term (2035) conditions with the completion of the Project and Newport Avenue/SR-38 connection. Table Q in the TIA shows the year 2035 with and without the Project at the study area intersections with the Newport Avenue/SR-38 connection. The following intersections are projected to operate at an unsatisfactory LOS (LSA, pp. 25-26):

- | <u>2035 Without the Project</u> | <u>2035 With the Project</u> |
|--|---|
| <ul style="list-style-type: none"> • 5. Palm Avenue/5th Street (p.m. peak hour); • 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour); • <u>8. SR-210 Westbound Ramps/Greenspot Road (p.m. peak hour);</u> • 16. Weaver Street/Greenspot Road (a.m. <u>and p.m. peak hours</u>); | <ul style="list-style-type: none"> • 5. Palm Avenue/5th Street (p.m. peak hour); • 7. SR-210 Eastbound Ramps/5th Street-Greenspot Road (p.m. peak hour); • 8. SR-210 Westbound Ramps/Greenspot Road (a.m. and p.m. peak hours); • 13. Boulder Avenue/Greenspot Road (p.m. peak hour); |

⁹ For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

- | | |
|---|--|
| <ul style="list-style-type: none"> • 17. Alta Vista/Greenspot Road (a.m. peak hour); • 19. Orange Street/SR-38 (a.m. and p.m. peak hours); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 33. Bryant Street/SR-38 (a.m. peak hour); • 34. Bryant Street/Oak Glen Road (a.m. and p.m. peak hours); and • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours) | <ul style="list-style-type: none"> • 15. Church Street/Greenspot Road (a.m. peak hour); • 16. Weaver Street/Greenspot Road (a.m. and p.m. peak hours); • 17. Alta Vista/Greenspot Road (a.m. and p.m. peak hours); • 18. Greenspot Road-Garnet Avenue/Newport Avenue (a.m. and p.m. peak hours); • 19. Orange Street/SR-38 (a.m. and p.m. peak hours); • 26. University Street/I-10 Westbound On-Ramp-Central Avenue (a.m. and p.m. peak hours); • 27. University Street/I-10 Eastbound Off-Ramp (p.m. peak hour); • 32. Garnet Avenue/SR-38 (a.m. and p.m. peak hours); • 33. Bryant Street/SR-38 (a.m. and p.m. peak hours); • 34. Bryant Street/Oak Glen Road (a.m. and p.m. peak hours); • 36. Sand Canyon Road-14th Street/Yucaipa Boulevard (a.m. and p.m. peak hours); • 39. New Greenspot Road/Old Greenspot Road (a.m. and p.m. peak hours); and • <u>40. Newport Avenue/SR-38 (p.m. peak hour)</u> |
|---|--|

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

On-Site Intersections

Within the Project site boundaries, New Greenspot Road north of Interior C is classified as a Modified Major Highway A with a total ROW of 104 feet. The typical Modified Major Highway A section includes two, 8-foot shoulders on each side and two travel lanes in each direction separated by a 12-foot raised median. One side of the street includes a 10-foot Class 1 Bikeway/Pedestrian Path. South of Interior C, New Greenspot Road has been designated as Modified Special Highway B. This designation has a total ROW of 104 feet, including one, 14-foot travel lane in each direction separated by an 18-foot median with a meandering swale with space for trees and 10-foot Class 1 Bikeway/Pedestrian Paths on both sides. (LSA, p. 50¹⁰)

¹⁰ Minor modifications were made to the typical street sections contained in the Specific Plan that were not reflected in the TIA. However, these changes that are incorporated into the DEIR do not change the LOS of the internal intersections.

Newport Road between Garnet Street and New Greenspot Road has been designated as Modified Alternative Highway D. Modified Alternative Highway D has a total ROW of 66 feet, including one, 14-foot travel lane in both directions. Both sides of the street include a 4-foot sidewalk separated from the curb by a parkway. East of New Greenspot Road, Newport Road is designated as a Modified Collector G with a total ROW of 80 feet, which includes one, 14-foot travel lane in each direction separated by a 12-foot raised median. On one side of the street is an 8-foot parking lane and on the other side is an 8-foot shoulder, a 10-foot Class 1 Bikeway/Pedestrian Path, and 2-foot landscape transition area, separated from the street by an 8-foot vegetated swale and an additional 2-feet of transition area. The other streets within the Project site boundaries will be two-lane collector streets of various types. (LSA, p. 50)

As shown in Table FFFF of the TIA, all study area intersections are projected to operate at a satisfactory LOS under build-out of the Project either with or without the potential development of Newport Avenue/SR-38 Connection. It should be noted that at the request of the City, internal intersections proposed to be developed with a traffic roundabout were also analyzed as conventional intersections. (LSA, p. 52)

Summary of Project Impacts on Roadway Intersections

With development of each phase of the Project, potentially significant impacts will occur at off-site roadway intersections in the study area, as shown in the preceding analysis. As a result, circulation improvements have been identified in the TIA that are necessary obtain the target LOS. Most of the recommended improvements are included in the SANBAG Nexus Study or the Development Impact Fee programs for the jurisdictions where the intersections are located. **Table 5.16-J** shows the unsatisfactory intersections and the improvements required. **Table 5.16-K** shows a summary of all off-site improvements along Greenspot Road with Project traffic conditions for each traffic scenario analyzed in the TIA. **Table 5.16-L** shows a summary of off-site improvements along Garnet Street, SR-38, and Bryant Street with Project traffic conditions for each traffic scenario analyzed in the TIA and **Table 5.16-M** shows a summary of off-site improvements at other intersections with Project traffic conditions for each traffic scenario. **Tables 5.16-K through 5.16-M** summarize off-site improvements for TIA intersections only.

Table 5.16-J – Summary of Required Intersection Improvements

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
<i>Phase I (2015)</i>												
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<45s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	D	F	F	F	Install a traffic signal. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBL/T/R lane to shared WBT/R lane.	C	D	Add a WBT. Install a traffic signal.	-	Add an EBL.
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Phase II (2017)												
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	D	B	D	Construct 3rd EBT lane (extend to upstream intersection).	B	C	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	City of Highland	D	C	D	D	F	Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	D	D	-	Add EBT	-
16. Weaver Street/Greenspot Road	City of Highland	D	C	C	F	F	Install a traffic signal	C	B	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	C	Install a traffic signal	B	B	-	-	Install a traffic signal
18. Greenspot Road-Garnet Street/Newport Avenue	City of Highland	D	B	B	F	E	Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	C	C	-	-	Add WBL
19. Orange Street/SR-38	City of Redlands/Caltrans	C	C	C	D	C	Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<45s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
27. University	Caltrans	<45s	C	C	C	E	Install a traffic signal	B	B	Interchange	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Street/I-10 Eastbound Off-Ramp									Reconstruction			
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	D	F	F	F	Install a traffic signal Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBL/T/R lane to shared WBT/R lane.	C	C	Add a WBT. Install a traffic signal	-	Add an EBL.
34. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	D	C	D	C	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase..	C	C	-	-	Stripe SB right-turn lane and add overlap phasing.
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).
Phase III (2019)												
7. SR-210 Eastbound Ramps/5 th Street-	Caltrans	<45s	C	C	C	F	Construct 1st exclusive SBL turn lane.	C	C	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Greenspot Road												
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	D	B	F	Construct 3rd EBT lane (extend to upstream intersection).	B	C	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	City of Highland	D	C	D	E	F	Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	D	D	-	Add EBT	-
16. Weaver Street/Greenspot Road	City of Highland	D	C	C	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	B	C	-	-	Install a traffic signal. Add a WBL
19. Orange Street/SR-38	City of Redlands/Caltrans	C	C	C	D	C	Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<45s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<45s	B	D	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	D	F	F	F	Install a traffic signal. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBL/T/R lane to shared WBT/R lane.	C	C	Add a WBT and SBR with overlap phasing. Install a traffic signal	-	Add EBL
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	C	D	C	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase.	C	C	-	-	Stripe SB right-turn lane and add overlap phasing
36. Sand Canyon Road-14th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT (Convert NB/SB Split

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							stripe shared SBL/T lane to exclusive SBT lane.					Phase to Protected)
39. (New) Greenspot Road/(Old) Greenspot Road	City of Highland	D	N/A	N/A	E	E	Install a traffic signal.	A	A	-	-	Install a traffic signal
Phase IV (2021)												
7. SR-210 Eastbound Ramps/5 th Street-Greenspot Road	Caltrans	<45s	C	D	C	F	Construct 1st exclusive SBL turn lane.	C	C	Interchange Reconstruction	-	-
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	D	B	F	Construct 3rd EBT lane (extend to upstream intersection).	B	C	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	City of Highland	D	D	D	E	F	Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	C	C	-	Add EBT and overlap phasing to NBR	-
16. Weaver Street/Greenspot Road	City of Highland	D	C	C	F	F	Install a traffic signal.	C	C	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal. Construct 2nd SB receiving lane. Construct 1st exclusive	B	C	-	-	Install a traffic signal. Add a WBL

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							WBL turn lane.					
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	C	D	C	Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<45s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<45s	B	D	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	E	F	F	F	Install a traffic signal. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.	C	C	Install a traffic signal, WBT, and SBR with overlap phasing	-	Add EBL and WBR with overlap phasing
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	C	B	D	C	Install a traffic signal.	C	C	Install a traffic signal	-	-
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	C	D	C	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase.	C	C	-	-	Stripe SB right-turn lane and add overlap phasing
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to	C	C	Add a NBL	-	Re-stripe SBTL to SBT and re-stripe NBT to NBT (Convert

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.					NB/SB Split Phase to Protected)
39. (New) Greenspot Road/(Old) Greenspot Road	City of Highland	D	N/A	N/A	F	F	Install a traffic signal.	A	A	-	-	Install a traffic signal
Phase V (2023)												
5. Palm Avenue/5th Street	City of Highland	D	C	D	C	F	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane. Add NBR turn overlap phase.	C	D	-	Add NBR with overlap phasing	-
7. SR-210 Eastbound Ramps/5 th St-Greenspot Road	Caltrans	<45s	C	D	C	F	Construct 1st exclusive SBL turn lane.	C	D	Interchange Reconstruction	-	-
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	E	B	F	Construct 3rd EBT lane (extend to upstream intersection).	B	C	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	City of Highland	D	D	D	F	F	Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	D	D	-	Add EBT and overlap phasing to NBR	-
15. Church Street/Greenspot Road	City of Highland	D	C	C	F	C	Add SBR turn overlap phase.	C	B	-	-	Add overlap phasing to SBR

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
16. Weaver Street/Greenspot Road	City of Highland	D	D	D	F	F	Install a traffic signal.	C	C	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	F	Install a traffic signal.	B	C	-	-	Install a traffic signal
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal. Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	B	D	NBT	-	Install a traffic signal. Add a WBL
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	C	D	D	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a NBT and WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<45s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<45s	B	D	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	E	F	F	F	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Install 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.	C	D	Install a traffic signal. WBT, SBL, and SBR with overlap phasing	-	Add EBL, WBR with overlap phasing
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	C	B	D	D	Install a traffic signal.	C	C	Install a traffic signal.	-	-
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	C	D	C	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR	C	C	-	-	Stripe SB right-turn lane and

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							turn overlap phase.					add overlap phasing.
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	E	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).
39. (New) Greenspot Road/(Old) Greenspot Road	City of Highland	D	N/A	N/A	F	F	Install a traffic signal. Construct 2nd SBT lane.	A	A	Add SBT	-	Install a traffic signal
Long-Term (2035) Conditions with the Project												
5. Palm Avenue/5th Street	City of Highland	D	C	E	C	F	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane.	C	D	-	Add NBR	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
7. SR-210 Eastbound Ramps/5 th St-Greenspot Road	Caltrans	<45s	C	F	C	F	Construct 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to 2nd exclusive SBL turn lane. Re-stripe SBR turn lane to shared SBT/R lane. Construct 3rd EBT lane north of existing EBT lanes. Construct 4th EBT lane in place of existing EBR turn lane. Construct EBR turn lane south of 4th EBT lane. Re-stripe 1st WBL turn pocket as EB receiving lane. Re-stripe 1st WBT lane as 2nd WBL turn lane. Construct 2nd WBT lane (extend to upstream intersection) and realign both WB receiving lanes.	B	D	Interchange Reconstruction	-	-
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	C	B	F	Re-stripe NBL turn line extension to align 2nd NBL turn lane with northernmost WB receiving lane. Construct 3rd EBT lane (extend to upstream intersection). Convert painted chevrons	B	D	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
13. Boulder Avenue/Greenspot Road	City of Highland	D	C	C	D	F	south of WBR turn lane to 3rd WBT lane and realign all WBT approach lanes to match WB receiving lanes. Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane. Construct 3rd WBT lane.	C	D	WBT	Add EBT and overlap phasing to NBR	-
15. Church Street/Greenspot Road	City of Highland	D	C	C	F	D	Add SBR turn overlap phase. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane.	C	C	-	-	Add overlap phasing to SBR and WBR.
16. Weaver Street/Greenspot Road	City of Highland	D	F	F	F	F	Install a traffic signal.	C	B	-	-	Install a traffic signal.
17. Alta Vista/Greenspot Road	City of Highland	D	E	C	F	F	Install a traffic signal.	B	C	-	-	Install a traffic signal.
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	C	C	F	F	Install a traffic signal. Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane.	B	D	Add a NBT	-	Install a traffic signal. Add WBL.

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							Construct 1st exclusive WBL turn lane.					
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	D	D	D	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane. Construct 2nd WBT lane and 2nd WB receiving lane. Construct 2nd WBL turn lane.	C	C	Add a NBT, WBL, and WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<30s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<30s	C	E	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	F	F	F	F	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared	C	C	Install a traffic signal. Add a WBT, SBL, and SBR with overlap phasing	-	Add EBL, and WBR with overlap phasing

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	F	C	F	F	Install a traffic signal. Construct 1st exclusive EBR turn lane. Re-stripe shared EBT/R lane to exclusive EBT lane.	C	C	Install a traffic signal. Add an EBR	-	-
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	D	D	D	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase	C	C	-	-	Stripe dedicated SB right-turn lane and add overlap

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
												phasing.
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	F	F	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Add WBR turn overlap phase.	C	C	Add a NBL	-	Re-stripe SBT to SBT and NBTL to NBT, WBR with overlap phasing. Convert NB/SB Split Phase to Protected and add a WBR with overlap phasing.
39. New Greenspot Road/Old Greenspot Road	City of Highland	D	DNE	DNE	F	F	Install a traffic signal. Construct 2nd SBT lane.	A	A	Add SBT	-	Install a traffic signal.
Phase IV (2021) with Newport Avenue/SR-38 Connection												
5. Palm Avenue/5th Street	City of Highland	D	C	D	C	F	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane. Add NBR turn overlap phase.	C	D	-	Add NBR with overlap phasing	-
7. SR-210 Eastbound Ramps/5 th Street-Greenspot Road	Caltrans	<45s	C	C	C	F	Construct 1st exclusive SBL turn lane.	C	C	Interchange Reconstruction	-	-
8. SR-210 Westbound	Caltrans	<45s	B	D	B	F	Construct 3rd EBT lane (extend to upstream	B	C	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Ramps/Greenspot Road							intersection).					
13. Boulder Avenue/Greenspot Road	City of Highland	D	D	D	E	F	Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	C	C	-	Add EBT and overlap phasing to NBR	-
16. Weaver Street/Greenspot Road	City of Highland	D	C	C	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal.	C	D	-	-	Install a traffic signal
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	C	D	D	Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<30s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<30s	B	D	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	D	E	F	F	Install a traffic signal. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBL/T/R lane to shared WBT/R lane.	C	C	Install a traffic signal. Add an WBT and SBR with overlap phasing	-	-
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	C	B	D	D	Install a traffic signal.	C	C	Install a traffic signal	-	-
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	C	D	C	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase.	C	C	-	-	Stripe SB right-turn lane and add overlap phasing
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.					(Convert NB/SB Split Phase to Protected).
39. (New) Greenspot Road/(Old) Greenspot Road	City of Highland	D	B	B	F	F	Install a traffic signal.	A	A	-	-	Install a traffic signal
Phase V (2023) with Newport Avenue/SR-38 Connection												
5. Palm Avenue/5 th Street	City of Highland	D	C	F	C	F	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane. Add NBR turn overlap phase.	C	D	-	Add NBR with overlap phasing	-
7. SR-210 Eastbound Ramps/5 th Street-Greenspot Road	Caltrans	<45s	C	D	C	F	Construct 1st exclusive SBL turn lane.	C	D	Interchange Reconstruction	-	-
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	E	B	F	Construct 3rd EBT lane (extend to upstream intersection).	B	C	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	City of Highland	D	D	D	E	F	Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	D	C	-	Add EBT and overlap phasing to NBR	-
15. Church Street/Greenspot	City of Highland	D	C	C	F	C	Add SBR turn overlap phase.	C	B	-	-	Add overlap phasing to

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Road												SBR
16. Weaver Street/Greenspot Road	City of Highland	D	D	D	F	F	Install a traffic signal.	C	C	-	-	Install a traffic signal
17. Alta Vista/Greenspot Road	City of Highland	D	C	B	F	F	Install a traffic signal.	B	B	-	-	Install a traffic signal
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	B	C	-	-	Install a traffic signal. Add a WBL
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	C	D	D	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd WBT lane and 2nd WB receiving lane.	C	C	Add a NBT and WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<30s	F	F	F	F	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	C	B	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<30s	B	D	C	F	Install a traffic signal	B	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	D	F	F	F	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Install 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.	C	C	Install a traffic signal. Add SBL, WBT, and SBR with overlap phasing	-	Add EBL and WBR with overlap phasing
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	C	B	E	F	Install a traffic signal. Construct 1st exclusive EBR turn lane. Re-stripe shared EBT/R lane to exclusive EBT	C	C	Install a traffic signal. Add an EBR	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	C	D	C	lane. Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase.	C	C	-	-	Stripe SB right-turn lane and add overlap phasing
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	D	D	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	C	C	Add a NBL	-	Re-stripe SBTL to SBT AND re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).
39. (New) Greenspot Road/(Old) Greenspot Road	City of Yucaipa	D	B	B	F	F	Install a traffic signal	A	B	-	-	Install a traffic signal
40. Newport Avenue/SR-38	City of Redlands/Caltrans	C	B	B	C	D	Install a Traffic Signal. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T lane to exclusive EBT lane.	B	B	-	-	Install a traffic signal. Add an EBL
Long-Term (2035) Conditions with the Project/SR-38 Connection												
5. Palm Avenue/5 th Street	City of Highland	D	C	E	C	F	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane.	C	D	-	Add NBR.	-
7. SR-210	Caltrans	<45s	C	F	C	F	Construct 1st exclusive	B	D	Interchange	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
Eastbound Ramps/5 th Street-Greenspot Road									Reconstruction			
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	<45s	B	F	B	F	Re-stripe NBL turn line extension to align 2nd NBL turn lane with northernmost WB receiving lane. Construct 3rd EBT lane (extend to upstream intersection). Convert painted chevrons south of WBR turn	B	D	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
							lane to 3rd WBT lane and realign all WBT approach lanes to match WB receiving lanes.					
13. Boulder Avenue/Greenspot Road	City of Highland	D	C	C	D	F	Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	C	D	-	Add EBT.	-
15. Church Street/Greenspot Road	City of Highland	D	C	C	F	D	Add SBR turn overlap phase. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane.	C	C	-	-	Add overlap phasing to SBR and WBR.
16. Weaver Street/Greenspot Road	City of Highland	D	F	F	F	F	Install a traffic signal.	C	B	-	-	Install a traffic signal.
17. Alta Vista/Greenspot Road	City of Highland	D	E	C	F	F	Install a traffic signal.	B	C	-	-	Install a traffic signal.
18. Greenspot Road-Garnet Avenue/Newport Avenue	City of Highland	D	B	B	F	F	Install a traffic signal. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	B	C	-	-	Install a traffic signal. Add a WBL
19. Orange Street/SR-38	City of Redlands/Caltrans	C	D	D	D	D	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane.	C	C	Add a NBT, WBL, and WBT	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	<30s	F	F	F	F	Construct 2nd WBT lane and 2nd WB receiving lane. Construct 2nd WBL turn lane.	C	B	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	<30s	C	E	C	F	Install a traffic signal.	B	B	Interchange Reconstruction	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
32. Garnet Avenue/SR-38	San Bernardino County/Caltrans	D	F	F	F	F	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Install 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.	C	C	Install a traffic signal. Add SBL, WBT and SBR with overlap phasing.	-	Add EBL, WBR with overlap phasing
33. Bryant Street/SR-38	City of Yucaipa/Caltrans	C	F	C	F	F	Install a traffic signal. Construct 1st exclusive EBR turn lane. Re-stripe shared EBT/R lane to exclusive EBT	C	C	Install a traffic signal. Add an EBR	-	-

Intersection	Jurisdiction	LOS Standard ^a	LOS without Improvement				Total Improvements Required	LOS with Improvement ^b		Programmed Improvement		
			Without Project		With Project			AM Peak	PM Peak	SANBAG Nexus Study	Local General Plan	Not Covered by Nexus Study or General Plan
			AM Peak	PM Peak	AM Peak	PM Peak						
34. Bryant Street/Oak Glen Road	City of Yucaipa	C	D	D	D	D	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase..	C	C	-	-	Stripe SB right-turn lane and add overlap phasing.
36. Sand Canyon Road-14 th Street/Yucaipa Boulevard	City of Yucaipa	C	D	D	E	F	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	C	C	Add a NBL	-	Re-stripe SBTL to SBT and re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).
39. (New) Greenspot Road/(Old) Greenspot Road	City of Highland	D	C	C	F	F	Install a traffic signal. Construct 2nd SBT lane.	A	A	Add SBT	-	Install a traffic signal.
40. Newport Avenue/SR-38	City of Redlands/Caltrans	C	B	C	C	F	Install a traffic signal. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T lane to exclusive EBT lane.	B	B	Install a traffic signal. Add an EBL.	-	-

Notes: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

L = Left-Turn Lane; T = Through Lane; R = Right-Turn Lane

DNE = Does not exist

a. The LOS standard is the "Without Improvement" standard.

b. The LOS With Improvement include Project traffic conditions.

Source: LSA, Tables I through Q, and T through JJ

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
8	SR-210 WB Ramps/ Greenspot Rd.									
	-Northbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Re-Stripe Left Turn Line Extension to Align 2 nd Left Turn Lane with Northernmost Westbound Receiving Lanes	• No Improvements Needed	• No Improvements Needed	• Re-Stripe Left Turn Line Extension to Align 2 nd Left Turn Lane with Northernmost Westbound Receiving Lanes
	-Eastbound	• No Improvements Needed	• Construct 3 rd Through Lane (Extended to Upstream Intersection)	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same
	-Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Convert Painted Chevrons South of Right Turn Lane to 3 rd Through Lane and Realign all Through Approach Lanes to Match Receiving Lanes	• No Improvements Needed	• No Improvements Needed	• Convert Painted Chevrons South of Right Turn Lane to 3 rd Through Lane and Realign all Through Approach Lanes to Match Receiving Lanes
13	Boulder Ave./Greenspot Rd.									
	-Northbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Add Right Turn Overlap Phase	• Same	• Same	• Add Right Turn Overlap Phase	• Same	• No Improvements Needed
	-Southbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	-Eastbound	• No Improvements Needed	• Convert Painted Chevrons South of 2nd Through Lane to 3rd Through Lane and Construct 3rd Receiving Lane	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same
	-Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Construct 3 rd Through lane	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
15	Church St./Greenspot Rd.									
	-Northbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	-Southbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	Add Right Turn Overlap Phase	• Same	• No Improvements Needed	• Add Right Turn Overlap Phase	• Same
	-Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	-Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Construct 1 st Exclusive Right Turn Lane • Re-Stripe Shared Through/Right Lane to Exclusive Through Lane	• No Improvements Needed	• No Improvements Needed	• Construct 1 st Exclusive Right Turn Lane • Re-Stripe Shared Through/Right Lane to Exclusive Through Lane

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
16 Weaver St. / Greenspot Rd.										
	-Southbound	• No Improvements Needed	• Install Traffic Signal • No Improvements Needed	• Same • No Improvements Needed	• Same as 2019 • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed			
	- Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	- Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
17 Alta Vista / Greenspot Rd.										
	- Southbound	• No Improvements Needed	• Install Traffic Signal • No Improvements Needed	• Same • No Improvements Needed	• Same as 2019 • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed			
	- Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	- Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed

This table includes mitigation measures only for local street intersections and intersections of local streets with freeway ramps. Mitigation measures for freeway mainline and ramp merge/diverge areas are not included.

Notes: "receiving lanes" = lanes that depart the intersection in the direction under which they are listed
¹Intersections are listed in north-to-south or east-to-west order by corridor rather than in numerical order.
²"With Connection" refers to scenarios with the Newport Avenue connection to SR-38.
³Year 2021 With Connection column is intended to be read as directly following the 2019 column.
⁴Overlap not needed with proposed coordinated signal timing.

Table 5.16-L – Summary of Off-Site Intersection Improvements Along Garnet Street, SR-38, and Bryant Street With Project Traffic

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
39	New Greenspot Rd./Old Greenspot Rd.									
	-Northbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Install Traffic Signal No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same as 2019 No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed
	-Southbound	<ul style="list-style-type: none"> Construct 2nd Receiving Lane⁴ 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 2nd Through Lane 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 2nd Through Lane
	-Eastbound	<ul style="list-style-type: none"> Construct 1 Stop-Controlled Shared Left/Right Lane and 1 Westbound Receiving Lane⁴ 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed
18	Garnet St./Newport Ave.									
	-Southbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Install Traffic Signal No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same Construct 2nd Through Lane and 2nd Receiving Lane 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same as 2019 No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed
	-Northbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 2nd Receiving Lane 	<ul style="list-style-type: none"> Same
	-Southbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 2nd Receiving Lane 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 1st Exclusive Left Turn Lane 	<ul style="list-style-type: none"> Same
	-Westbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 1st Exclusive Left Turn Lane 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 1st Exclusive Left Turn Lane 	<ul style="list-style-type: none"> Same
32	Garnet St./SR-38									
	-Northbound	<ul style="list-style-type: none"> Install Traffic Signal 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same as 2019 No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed 	<ul style="list-style-type: none"> Same No Improvements Needed
	-Southbound	<ul style="list-style-type: none"> No Improvements Needed No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed No Improvements Needed 	<ul style="list-style-type: none"> Construct 1st Exclusive Right Turn Lane Re-Stripe Shared Left/Through/Right Lane to Shared Left/Through Lane Add Right Turn Overlap Phase 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Re-Stripe Shared Left/Through Lane to Exclusive Through Lane Same Construct 1st Exclusive Left Turn Lane 	<ul style="list-style-type: none"> Same Re-Stripe Exclusive Through Lane to Shared Left/Through Lane Same Same 	<ul style="list-style-type: none"> Same as 2019 Same as 2019 Same as 2019 	<ul style="list-style-type: none"> Same Re-Stripe Shared Left/Through Lane to Exclusive Through Lane Construct 1st Exclusive Left Turn Lane 	<ul style="list-style-type: none"> Same Re-Stripe Exclusive Through Lane to Shared Left/Through Lane Same
	-Eastbound	<ul style="list-style-type: none"> Construct 1st Exclusive Left Turn Lane Re-Stripe Shared Left/Through/Right Lane to Shared Through/Right Lane 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same as 2019 Same as 2019 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same
	-Westbound	<ul style="list-style-type: none"> Construct Shared Left/Through Lane and 2nd Receiving Lane Re-Stripe Shared Left/Through/Right 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Re-Stripe Shared Through/Right 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same Same 	<ul style="list-style-type: none"> Same as 2019 Same as 2019 	<ul style="list-style-type: none"> Same Re-Stripe Shared Through/Right 	<ul style="list-style-type: none"> Same Same

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
		Lane to Shared Through/Right Lane			Lane to Exclusive Through Lane • Construct 1st Exclusive Right Turn Lane • Add Right Turn Overlap Phase	• Same • Same	• Same • Same		Lane to Exclusive Through Lane • Construct 1st Exclusive Right Turn Lane • Add Right Turn Overlap Phase	• Same • Same
40	Newport Ave./SR-38									
	-Southbound	• No Intersection	• No Intersection	• No Intersection	• No Intersection	• No Intersection	• No Intersection	• Construct 1 Stop-Controlled Shared Left/Right Lane and 1 Northbound Receiving Lane ⁵	• Install Traffic Signal • No Improvements Needed	• Same • No Improvements Needed
	-Eastbound							No Improvements Needed	• Construct 1st Exclusive Left Turn Lane • Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• Same • Same
	-Westbound							No Improvements Needed	• No Improvements Needed	• No Improvements Needed
33	Bryant St./SR-38									
	-Northbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Install Traffic Signal • No Improvements Needed	Same	• Same	• Install Traffic Signal	• Same	• Same
	-Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed • Construct 1 st Exclusive Right Turn Lane • Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• No Improvements Needed • No Improvements Needed	• No Improvements Needed • Construct 1 st Exclusive Left Turn Lane • Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• No Improvements Needed • Same • Same
	-Westbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
34	Bryant St./Oak Glen Rd.									
	-Northbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed
	-Southbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Stripe Defacto Right Turn Lane as Exclusive Right Turn Lane 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same as 2019 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same
	-Eastbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Add Right Turn Overlap Phase No Improvements Needed 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same as 2019 	<ul style="list-style-type: none"> Same 	<ul style="list-style-type: none"> Same
	-Westbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed

This table includes mitigation measures only for local street intersections and intersections of local streets with freeway ramps. Mitigation measures for freeway mainline and ramp merge/diverge areas are not included.

Notes: "receiving lanes" = lanes that depart the intersection in the direction under which they are listed

¹Intersections are listed in north-to-south or east-to-west order by corridor rather than in numerical order.

²"With Connection" refers to scenarios with the Newport Avenue connection to SR-38.

³Year 2021 With Connection column is intended to be read as directly following the 2019 column.

⁴Constructed in Phase 1 per the Harmony Specific Plan to connect proposed internal street network with existing street network

⁵Constructed as part of Newport Avenue Bridge construction project

Table 5.16-M – Summary of Off-Site Intersection Improvements Along Other Intersections With Project Traffic

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
19	Orange St./ SR-38									
	- Northbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Construct 2nd Through Lane and 2nd Receiving Lane	• Same	• No Improvements Needed	• Construct 2nd Through Lane and 2nd Receiving Lane	• Same
	- Southbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• Construct 2nd Receiving Lane	• No Improvements Needed	• No Improvements Needed	• Construct 2nd Receiving Lane
	- Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	- Westbound	• No Improvements Needed	• Construct 2nd Through Lane and 2nd Receiving Lane	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same
							• Construct 2nd Left Turn Lane			• Construct 2nd Left Turn Lane
26	University St./I-10 WB On-Ramp Central Ave.									
	- Northbound	• Install Traffic Signal • Construct 1st Exclusive Left Turn Lane • Construct 2nd Left Turn Lane • Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• Same • Same	• Same • Same	• Same • Same	• Same • Same	• Same • Same	• Same as 2019 • Same as 2019	• Same • Same	• Same • Same
	- Southbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	- Westbound	• Construct 2nd Receiving Lane	• Same	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same
27	University St./I-10 EB Off-Ramp									
	- Northbound	• No Improvements Needed	• Install Traffic Signal • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed	• Same as 2019 • No Improvements Needed	• Same • No Improvements Needed	• Same • No Improvements Needed
	- Southbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
	- Eastbound	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed	• No Improvements Needed
36	Sand Canyon Rd./ 14th St./Yucaipa Blvd.									
	- Northbound	• Convert Northbound/Southbound Split Phase to Protected Phase • Construct 1st Exclusive Left Turn Lane • Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• Same	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same
	- Southbound	• Re-Stripe Shared Left/Through Lane to Exclusive Through Lane	• Same	• Same	• Same	• Same	• Same	• Same as 2019	• Same	• Same

Intersection # ¹	Intersection	2015 (Phase 1)	2017 (Phase 2)	2019 (Phase 3)	2021 (Phase 4)	2023 (Phase 5)	2035	2021 (Phase 4) with Connection ^{2,3}	2023 (Phase 5) with Connection ²	2035 with Connection ²
	- Eastbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 					
	- Westbound	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> Construct 1st Exclusive Right Turn Lane Re-Stripe Shared Through/Right Lane to Exclusive Through Lane Add Right Turn Overlap Phase 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 	<ul style="list-style-type: none"> No Improvements Needed 				

This table includes mitigation measures only for local street intersections and intersections of local streets with freeway ramps. Mitigation measures for freeway mainline and ramp merge/diverge areas are not included.

Notes: "receiving lanes" = lanes that depart the intersection in the direction under which they are listed
¹Intersections are listed in north-to-south or east-to-west order by corridor rather than in numerical order.
²"With Connection" refers to scenarios with the Newport Avenue connection to SR-38.
³Year 2021 With Connection column is intended to be read as directly following the 2019 column.

As shown in the table above, while significant impacts to off-site intersections will occur with every development phase, the identified improvements will reduce these potential impacts to less than significant. These improvements will be funded through payment of “fair share” fees for improvements within and outside of the City of Highland. With implementation of mitigation measure **MM TRANS 1** located in Section 5.16.6, impacts related to off-site roadways will be less than significant through the payment of these fees. However, a temporary or short-term impact may occur since the timing of these improvements is uncertain. Thus, it is possible that the required improvements may not be constructed in time to mitigate the Project’s impacts upon off-site intersections to acceptable levels. **Therefore, although the Project’s intersection impacts will be mitigated, they remain significant until such time as the improvements are completed.** Given that there is no assurance that all improvements that may be suggested in this DEIR to be constructed in other jurisdictions will in fact be fully funded and constructed, or constructed prior to the time such improvements are needed to mitigate the impacts of this Project, these Project impacts should be regarded as significant and unmitigated. However, within the City of Highland, all improvements will be constructed at or before the time when traffic generated by the Project will cause an intersection under the jurisdiction of the City of Highland to operate at worse than a level of LOS D during peak hours of traffic, so as to conform to Policy 3.1.2 of the General Plan.

Further, it should be noted that in the SANBAG area, there are no thresholds for identifying project specific impacts and only a LOS standard is provided. In the absence of numerical thresholds in the SANBAG area, a direct project impact is considered where the intersection operates at satisfactory LOS under “without project” conditions and fails under “with project” conditions. A cumulative project impact is identified where the intersection fails under “without project conditions” and the project adds traffic to an already failing location exacerbating the unsatisfactory operations. As seen in **Table 5.16-J**, above, most of the impacts are cumulative impacts and not directly created by the Project. For example, in 2035, of the 17 intersections where the Project has been identified to have an impact, only 3 of those intersections are forecast to have direct Project impacts whereas the remaining 14 are indirect Project impacts.

The internal on-site roadways will operate at a satisfactory LOS, and thus, impacts will not be significant with respect to this issue. Therefore, potential impacts to on-site roadways will be **less than significant and no mitigation is required.**

Project Impacts to Freeway Segments

As previously discussed, the TIA for the freeway analysis analyzed segments and merge/diverge movements at freeway ramp junctions where the Project is anticipated to add more than 100 peak hour trips to the segment and more than 50 peak hour trips to merge/diverge movements within a 5-mile radius by CMP guidelines. Moreover, the TIA analyzed basic freeway segments where the Project is anticipated to add more than 100 peak hour trips beyond a 5-mile radius for disclosure per CEQA.

The freeway segment analysis is organized into two parts. The first part includes freeway segments within a 5-mile radius, and includes mainline and ramp merge/diverge analyses. The second part includes basic freeway segments beyond the 5-mile radius. As the TIA determined that the Project will not add more than 50 trips to any ramp junction beyond a 5-mile radius, a ramp merge/diverge analysis

outside of the 5-miles radius was not conducted, which is consistent with the requirements of Caltrans District 8. Further, the analysis of freeway segments beyond the 5-mile radius was only conducted for the scenario without the Newport Avenue/SR-38 connection since traffic volumes beyond the 5-mile radius are similar under either scenario. (LSA, p. 30)

As with the roadway segment analysis above, the following discussion analyzes the Project’s impact on existing (2011) conditions and in each of the anticipated completion years by phase, and on long-term (2035) conditions with full Project build-out. Also, Phase IV, Phase V, and long-term conditions are analyzed again to determine impacts in the event the Newport Avenue/SR-38 connection is realized for the freeway segments within the 5-mile radius.

Freeway Segment and Ramp Junction LOS Analysis (within 5-mile radius)

Existing (2011) Conditions with Project

Table LL in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2011 with and without the Project, which shows that no freeway segments are projected to operate at an unsatisfactory LOS (LSA, p. 31).

Table MM in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2011 with and without the Project, which shows that no freeway ramp merge/diverge locations are projected to operate at an unsatisfactory LOS (LSA, p. 31).

Year 2015 with and without Phase I Project Conditions

Table NN in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2015 (Phase I) with and without the Project, which shows that no freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 31-32).

Table OO in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2015 (Phase I) with and without the Project. The following freeway ramp location is projected to operate at an unsatisfactory LOS (LSA, pp. 31-32):

<u>2015 Without the Project</u>	<u>2015 With the Project</u>
<ul style="list-style-type: none">I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour)	<ul style="list-style-type: none">I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2017 with and without Phase II Project Conditions

Table PP in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2017 (Phase II) with and without the Project. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, p. 32):

<u>2017 Without the Project</u>	<u>2017 With the Project</u>
<ul style="list-style-type: none">I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour)	<ul style="list-style-type: none">I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); andSR-210 Westbound: San Bernardino Avenue

Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table QQ in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2017 (Phase II) with and without the Project. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, p. 32):

<u>2017 Without the Project</u>	<u>2017 With the Project</u>
<ul style="list-style-type: none"> I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); and SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); SR-210 Westbound: 5th St/Greenspot Road Westbound Off-Ramp (p.m. peak hour).

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2019 with and without Phase III Project Conditions

Table RR in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2019 (Phase III) with and without the Project. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 32-33):

<u>2019 Without the Project</u>	<u>2019 With the Project</u>
<ul style="list-style-type: none"> I-10 Westbound: University Street Westbound On-Ramp to 6th Street WB Off-Ramp (a.m. peak hour); and SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); and SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table SS in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2019 (Phase III) with and without the Project. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, p. 32-33):

<u>2019 Without the Project</u>	<u>2019 With the Project</u>
<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); and SR-210 Westbound: 5th Street/Greenspot Road 	<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. peak hour); I-10 Westbound: University Street Westbound On-

Westbound Off-Ramp (p.m. peak hour)

Ramp (a.m. peak hour);

- I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); and
- SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2021 with and without Phase IV Project Conditions

Table TT in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2021 (Phase IV) with and without the Project. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 33-35):

<u>2021 Without the Project</u>	<u>2021 With the Project</u>
<ul style="list-style-type: none"> • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour), and • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); and • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table UU in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2021 (Phase IV) with and without the Project. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 33-35):

<u>2021 Without the Project</u>	<u>2021 With the Project</u>
<ul style="list-style-type: none"> • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour), and • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour) • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road

Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2023 with and without Phase V Project Conditions

Table VV in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2023 (Phase V) with and without the Project. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 35-36):

2023 Without the Project	2023 With the Project
<ul style="list-style-type: none"> SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (p.m. peak hour); I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); I-10 Westbound: University Street Westbound On-Ramp to 6th Street WB Off-Ramp (a.m. peak hour); I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table WW in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2023 (Phase V) with and without the Project. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 35-36):

2023 Without the Project	2023 With the Project
<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (p.m. peak hour); 	<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours);

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| <ul style="list-style-type: none"> • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour) | <ul style="list-style-type: none"> • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour) |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Long-Term (2035) Conditions with and without Project

Table XX in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2035 with and without the Project. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 36-38):

- | <u>2035 Without the Project</u> | <u>2035 With the Project</u> |
|---|--|
| <ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp to 6th Street Eastbound On-Ramp (p.m. peak hour); • I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp to County Line Road Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp to SR-210 Interchange (a.m. peak hour); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); | <ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp to 6th Street Eastbound On-Ramp (p.m. peak hour); • I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp to County Line Road Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th St/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp to SR-210 Interchange (a.m. peak hour); • I-10 Westbound: Orange Street Westbound Loop On-Ramp to Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Westbound Off-Ramp (a.m. peak |

- | | |
|--|---|
| <ul style="list-style-type: none"> • SR-210 Westbound: San Bernardino Avenue to I-10 Interchange (p.m. peak hour); • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour) | <ul style="list-style-type: none"> hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: San Bernardino Avenue to I-10 Interchange (p.m. peak hour); • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th St/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); • SR-210 Westbound: 5th St/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour) |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table YY in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2035 with and without the Project. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 36-38):

<u>2035 Without the Project</u>	<u>2035 With the Project</u>
<ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2021 (with SR-38 Connection) with and without Phase IV Project Conditions¹¹

Table ZZ in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2021 (Phase IV) in the event the Newport Avenue/SR-38 connection is built. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 39-40):

<u>2021 Without the Project</u>	<u>2021 With the Project</u>
<ul style="list-style-type: none"> SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and <u>SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour)</u> 	<ul style="list-style-type: none"> SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour), and SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and <u>SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour)</u>

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table AAA in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2021 (Phase IV) with and without the Project in the event the Newport Avenue/SR-38 connection is built. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 39-40):

<u>2021 Without the Project</u>	<u>2021 With the Project</u>
<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); <u>I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp (p.m. peak hour);</u> SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); 	<ul style="list-style-type: none"> I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour);

¹¹ For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

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| <ul style="list-style-type: none"> • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); <u>and</u> • <u>SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour)</u> | <ul style="list-style-type: none"> • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); <u>and</u> • <u>SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour)</u> |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Year 2023 (with SR-38 Connection) with and without Phase V Project Conditions¹²

Table BBB in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2023 (Phase V) in the event the Newport Avenue/SR-38 connection is built. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 40-41):

<u>2023 Without the Project</u>	<u>2023 With the Project</u>
<ul style="list-style-type: none"> • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (<u>a.m. and p.m. peak hours</u>); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); <u>and</u> • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> • I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); <u>and</u> • SR-210 Westbound: 5th St/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table CCC in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2023 (Phase V) with and without the Project in the event the Newport Avenue/SR-38 connection is

¹² For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

built. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 40-41):

<u>2023 Without the Project</u>	<u>2023 With the Project</u>
<ul style="list-style-type: none"> • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (<u>a.m. and p.m. peak hours</u>); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour) 	<ul style="list-style-type: none"> • <u>I-10 Eastbound: Eureka Street Eastbound Off-Ramp (p.m. peak hour);</u> • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (p.m. peak hour); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour)

Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Long-Term (2035) (with SR-38 Connection) Conditions with and without Project¹³

Table DDD in the TIA summarizes a.m. and p.m. peak hour freeway mainline traffic volumes and LOS in the year 2035 in the event the Newport Avenue/SR-38 connection is built. The following freeway segments are projected to operate at an unsatisfactory LOS (LSA, pp. 42-44):

<u>2035 Without the Project</u>	<u>2035 With the Project</u>
<ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp to 6th Street Eastbound On-Ramp (p.m. peak hour); • I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp to County Line Road Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: Base Line Eastbound On-Ramp to 	<ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp to 6th Street Eastbound On-Ramp (p.m. peak hour); • I-10 Eastbound: 6th Street Eastbound On-Ramp to University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp to County Line Road Eastbound Off-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp to San Bernardino Avenue Eastbound Off-Ramp (a.m. and p.m. peak hours);

¹³ For clarifying purposes as to the differences between this list and the preceding list for this same phase without the SR-38 connection, newly added study area intersections are underlined and study area intersections that would now operate at a satisfactory LOS are shown in double strikethrough.

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| <ul style="list-style-type: none"> 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp to SR-210 Interchange (a.m. peak hour); • <u>I-10 Westbound: Orange Street Westbound Loop On-Ramp to Orange Street Westbound Slip On-Ramp (a.m. peak hour);</u> • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: San Bernardino Avenue to I-10 Interchange (p.m. peak hour); • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (p.m. peak hour) | <ul style="list-style-type: none"> • SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th Street/Greenspot Road Eastbound Off-Ramp (p.m. peak hour); • I-10 Westbound: Orange Street Westbound Slip On-Ramp to SR-210 Interchange (a.m. peak hour); • I-10 Westbound: Orange Street Westbound Loop On-Ramp to Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: 6th Street Westbound Off-Ramp to Orange Street Westbound Loop-On Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp to 6th Street Westbound Off-Ramp (a.m. peak hour); • I-10 Westbound: County Line Road Westbound On-Ramp to Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: San Bernardino Avenue to I-10 Interchange (p.m. peak hour) • SR-210 Westbound: San Bernardino Avenue Westbound On-Ramp to 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp to Base Line Westbound Off-Ramp (a.m. and p.m. peak hours) |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Table EEE in the TIA summarizes the a.m. and p.m. peak hour ramp merge/diverge volumes and LOS in year 2035 with and without the Project in the event the Newport Avenue/SR-38 connection is realized. The following freeway ramp locations are projected to operate at an unsatisfactory LOS (LSA, pp. 42-44):

- | <u>2035 Without the Project</u> | <u>2035 With the Project</u> |
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| <ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound Off-Ramp (a.m. and p.m. peak hours); | <ul style="list-style-type: none"> • I-10 Eastbound: Eureka Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: University Street Eastbound Off-Ramp (p.m. peak hour); • I-10 Eastbound: Live Oak Canyon Road Eastbound On-Ramp (p.m. peak hour); • SR-210 Eastbound: 5th Street/Greenspot Road Eastbound On-Ramp (a.m. and p.m. peak hours); • SR-210 Eastbound: Base Line Eastbound On-Ramp to 5th Street/Greenspot Road Eastbound Off-Ramp |

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| <ul style="list-style-type: none"> • I-10 Westbound: Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th St/Greenspot Road Westbound On-Ramp (p.m. peak hour) | <p>(p.m. peak hour);</p> <ul style="list-style-type: none"> • I-10 Westbound: Orange Street Westbound Slip On-Ramp (a.m. peak hour); • I-10 Westbound: University Street Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound On-Ramp (a.m. peak hour); • I-10 Westbound: Live Oak Canyon Road Westbound Off-Ramp (a.m. peak hour); • SR-210 Westbound: 5th Street/Greenspot Road Westbound Off-Ramp (a.m. and p.m. peak hours); and • SR-210 Westbound: 5th Street/Greenspot Road Westbound On-Ramp (p.m. peak hour) |
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Circulation improvements to offset the Project impacts are discussed later in Section 5.16.6.

Freeway Segment and Ramp Junction LOS Analysis (beyond 5-mile radius)

As previously discussed in Section 5.16.1.2, the Project will add 100 two-way peak hour trips at the following locations:

- All segments on SR-210 between Base Line and SR-210/SR-605 Interchange;
- All segments on I-10 between Beaumont Avenue and County Line Road;
- All segments on I-10 between I-10/SR-210 Interchange and Milliken Avenue;
- All segments on I-215 between Palm Avenue and I-215/SR-210 Interchange;
- All segments on I-215 between I-215/I-10 Interchange and I-215/SR-60 Interchange; and
- All segments on SR-91 between SR-91/I-215 Interchange and Arlington Avenue

Tables FFF through III in the TIA summarize the LOS on freeway segments outside the 5-mile radius study area on SR-210, I-10, I-215, and SR-91, respectively. **Table 5.16-N** summarizes the number of freeway segments that are projected to operate at an unsatisfactory LOS by phase and by freeway (LSA, pp. 44-46):

Table 5.16-N – Unsatisfactory Freeway Segments (Beyond 5-Mile Radius)

Scenario	Freeway Segments			
	SR-210	I-10	I-215	SR-91
Existing (2011)				
Without Project	9	17	6	0
With Project	9	17	6	0
Phase 1 (2015)				
Without Project	10	17	6	0
With Project	10	17	6	0

Scenario	Freeway Segments			
	SR-210	I-10	I-215	SR-91
Phase II (2017)				
Without Project	10	17	6	0
With Project	10	18	6	0
Phase III (2019)				
Without Project	10	20	6	2
With Project	10	24	6	2
Phase IV (2021)				
Without Project	11	26	6	2
With Project	11	28	6	2
Phase V (2023)				
Without Project	10	28	7	2
With Project	11	29	7	2
Long-Term (2035)				
Without Project	15	34	11	4
With Project	17	36	11	4

Note: Bolded number denote an increase from without Project condition
Source: LSA, pp. 44-46

Summary of Project Impacts on Freeway Segments

With development of each phase of the Project, potentially significant impacts will occur at freeway segment and/or ramps in the study area within the 5-mile study area radius and beyond the 5-mile radius. To restore satisfactory operations at the locations that operate at unsatisfactory conditions would require capacity-enhancing improvements such as addition of lanes to the freeway and an additional lane to the ramps. The freeway facilities are under the jurisdiction of Caltrans and no mechanism to contribute fair share toward a required improvement is available. However, the required improvements to freeway segments within five miles have been specifically identified by the SANBAG 2010-2040 Measure I Strategic Plan, as shown in **Table 5.16-O**.

Table 5.16-O – Funding Sources for Freeway Segments (Inside 5-Mile Radius)

Freeway Segments	Segment Length (Miles)	Existing Lanes	Lanes With Improvements	Improvement (Number of Lanes) ^a	Funding Source
EASTBOUND					
I-10					
2. Eureka St EB Off-Ramp to 6th St EB On-Ramp	0.78	4	5	1	SANBAG Measure I
3. 6th St EB On-Ramp to University St EB Off-Ramp	0.41	4	5	1	SANBAG Measure I
4. Live Oak Canyon Rd EB On-Ramp to County Line Rd EB Off-Ramp	1.73	3	4	1	SANBAG Measure I
SR-210					
6. 5th St/Greenspot Rd EB On-Ramp to San Bernardino Ave EB Off-Ramp	1.4	2	3	1	SANBAG Measure I
7. Base Line EB On-Ramp to 5th St/Greenspot Rd EB Off-Ramp	0.24	2	3	1	SANBAG Measure I
WESTBOUND					

Freeway Segments	Segment Length (Miles)	Existing Lanes	Lanes With Improvements	Improvement (Number of Lanes) ^a	Funding Source
I-10					
8. Orange St WB Slip On-Ramp to SR-210 Interchange	0.26	5	6	1	SANBAG Measure I
9. Orange St WB Loop On-Ramp to Orange St WB Slip On-Ramp	0.25	5	6	1	SANBAG Measure I
10. 6th St WB Off-Ramp to Orange St WB Loop-On Ramp	0.32	4	5	1	SANBAG Measure I
11. University St WB On-Ramp to 6th St WB Off-Ramp	0.51	4	6	2	SANBAG Measure I
12. County Line Rd WB On-Ramp to Live Oak Canyon Rd WB Off-Ramp	1.75	3	4	1	SANBAG Measure I
SR-210					
13. I-10 Interchange to San Bernardino Avenue	0.37	3	4	1	SANBAG Measure I
14. San Bernardino Ave WB On-Ramp to 5th St/Greenspot Rd WB Off-Ramp	1.56	2	3	1	SANBAG Measure I
15. 5th St/Greenspot Rd WB On-Ramp to Base Line WB Off-Ramp	0.28	2	3	1	SANBAG Measure I

a. The improvements is either add 1 HOV (high-occupancy vehicle) or add 1 HOV and 1 mixed-flow lane.
Source: LSA

These improvements are included in the Measure I program. However, since these are freeway mainline segments under the exclusive control of Caltrans, the timing and funding of these improvements is unknown and, neither the City, as lead agency, nor the Project proponent can contribute fair share fees or implement the required improvements which must be designed and constructed by Caltrans, **impacts to the freeway mainline segments both within five miles and beyond five miles of the Project site will be significant and unavoidable until improvements are constructed.**

The two freeway interchanges that were identified in the Project-specific traffic study to require improvements due to impact of this Project (SR-210/Greenspot interchange and I-10/University interchange) are both included in the Nexus Study. Payment of Project “fair share” fees will provide for traffic mitigation. However, a temporary or short-term impact may occur since the construction timing of these interchange improvements is uncertain. Thus, it is possible that the required improvements may not be constructed in time to mitigate the Project’s impacts upon interchanges to acceptable levels. **Therefore, although the Project’s interchange impacts will be mitigated, they remain significant until such time as the interchange improvements are completed.**

Improvements will also be required for the freeway merge and diverge ramps shown in **Table 5.16-P**, below. These improvements are included in either the Measure I program or the Nexus Study. These freeway ramps are under the exclusive control of Caltrans, the timing and funding of these improvements is unknown and, neither the City, as lead agency, nor the Project proponent can contribute fair share fees or implement the required improvements which must be designed and constructed by Caltrans, **impacts to the freeway merge/diverge ramps will be significant and unavoidable until improvements are constructed.**

Table 5.16-P – Summary of Improvements for Freeway Merge/Diverge Ramps

Location	LOS without Improvement				Total Improvements Required	LOS with Improvement		Included in Measure I Or Nexus Study
	Without Project		With Project			With Project		
	AM Peak	PM Peak	AM Peak	PM Peak		AM Peak	PM Peak	
Year 2015 (Without SR-38 Connection)								
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	D	B	Yes
Year 2017 (Without SR-38 Connection)								
I-10 EB University Street Off Ramp	C	E	C	F	Add 1 Mainline Lane	C	D	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	D	B	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	D	F	D	F	Add 1 Mainline Lane	C	D	Yes
Year 2019 (Without SR-38 Connection)								
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane	C	E	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	E	E	F	E	Add 1 Mainline Lane	C	C	Yes
I-10 WB University Street On Ramp	C	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	D	B	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	E	F	E	F	Add 1 Mainline Lane	C	D	Yes
Year 2021 (Without SR-38 Connection)								
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane	C	E	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	E	F	F	F	Add 1 Mainline Lane	C	C	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	D	D	D	F	Add 1 Mainline Lane	B	C	Yes
I-10 WB University Street On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	D	B	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	E	F	E	F	Add 1 Mainline Lane	C	D	Yes
Year 2023 (Without SR-38 Connection)								
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane	C	E	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	E	F	F	F	Add 1 Mainline Lane	D	D	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	D	F	D	F	Add 1 Mainline Lane	B	C	Yes

Location	LOS without Improvement				Total Improvements Required	LOS with Improvement		Included in Measure I Or Nexus Study
	Without Project		With Project			With Project		
	AM Peak	PM Peak	AM Peak	PM Peak		AM Peak	PM Peak	
I-10 WB University Street On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane and 1 Ramp Lane	A	A	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	E	F	E	F	Add 1 Mainline Lane	C	D	Yes
SR-210 WB 5th Street/Greenspot Road On Ramp	D	F	D	F	Add 1 Mainline Lane	C	C	Yes
Year 2035 (Without SR-38 Connection)								
I-10 EB Eureka Street Off Ramp	C	F	C	F	Add 1 Ramp Lane	B	C	Yes
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane and 1 Ramp Lane	B	C	Yes
I-10 EB Live Oak Canyon Road On Ramp	C	F	C	F	Add 1 Mainline Lane	B	C	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	F	F	F	F	Add 1 Mainline Lane	D	D	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	D	F	D	F	Add 1 Mainline Lane	C	D	Yes
I-10 WB Orange Street Slip On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB University Street On Ramp	F	C	F	C	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	C	F	C	Add 1 Mainline Lane and 1 Ramp Lane	A	A	Yes
I-10 WB Live Oak Canyon Road Off Ramp	F	D	F	D	Add 1 Mainline Lane	E	C	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	F	F	F	F	Add 1 Mainline Lane	D	E	Yes
SR-210 WB 5th Street/Greenspot Road On Ramp	D	F	E	F	Add 1 Mainline Lane	C	D	Yes
Year 2021 (With SR-38 Connection)								
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane	C	E	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	F	F	F	F	Add 1 Mainline Lane	C	C	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	D	D	D	D	Add 1 Mainline Lane	B	C	Yes
I-10 WB University Street On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	D	B	Yes

Location	LOS without Improvement				Total Improvements Required	LOS with Improvement		Included in Measure I Or Nexus Study
	Without Project		With Project			With Project		
	AM Peak	PM Peak	AM Peak	PM Peak		AM Peak	PM Peak	
SR-210 WB 5th Street/Greenspot Road Off Ramp	E	F	E	F	Add 1 Mainline Lane	C	D	Yes
SR-210 WB 5th Street/Greenspot Road On Ramp	D	F	D	F	Add 1 Mainline Lane	C	C	Yes
Year 2023 (With SR-38 Connection)								
I-10 EB Eureka Street Off Ramp	C	E	C	F	Add 1 Ramp Lane	B	C	Yes
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane	C	E	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	F	F	F	F	Add 1 Mainline Lane	D	C	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	D	F	D	F	Add 1 Mainline Lane	C	C	Yes
I-10 WB University Street On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	B	F	B	Add 1 Mainline Lane	A	A	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	E	F	E	F	Add 1 Mainline Lane	C	D	Yes
SR-210 WB 5th Street/Greenspot Road On Ramp	D	F	D	F	Add 1 Mainline Lane	C	C	Yes
Year 2035 (With SR-38 Connection)								
I-10 EB Eureka Street Off Ramp	C	F	C	F	Add 1 Ramp Lane	B	C	Yes
I-10 EB University Street Off Ramp	C	F	C	F	Add 1 Mainline Lane and 1 Ramp Lane	B	C	Yes
I-10 EB Live Oak Canyon Road On Ramp	C	F	C	F	Add 1 Mainline Lane	B	C	Yes
SR-210 EB 5th St/Greenspot Rd On-Ramp	F	F	F	F	Add 1 Mainline Lane	D	D	Yes
SR-210 EB 5th St/Greenspot Rd Off-Ramp	F	F	F	F	Add 1 Mainline Lane	C	D	Yes
I-10 WB Orange Street Slip On Ramp	F	B	F	B	Add 1 Mainline Lane	C	B	Yes
I-10 WB University Street On Ramp	F	C	F	C	Add 1 Mainline Lane	C	B	Yes
I-10 WB Live Oak Canyon Road On Ramp	F	C	F	C	Add 1 Mainline Lane and 1 Ramp Lane	A	A	Yes
I-10 WB Live Oak Canyon Road Off Ramp	F	C	F	C	Add 1 Mainline Lane	E	C	Yes
SR-210 WB 5th Street/Greenspot Road Off Ramp	F	F	F	F	Add 1 Mainline Lane	D	E	Yes

Location	LOS without Improvement				Total Improvements Required	LOS with Improvement		Included in Measure I Or Nexus Study
	Without Project		With Project			With Project		
	AM Peak	PM Peak	AM Peak	PM Peak		AM Peak	PM Peak	
SR-210 WB 5th Street/Greenspot Road On Ramp	E	F	F	F	Add 1 Mainline Lane	C	D	Yes

Source: LSA, Tables MM, OO, QQ, SS, UU, WW, YY, AAA, CCC, EEE, JJJ, LLL, NNN, PPP, RRR, TTT, VVV, XXX, ZZZ,

Threshold: *Would the proposed Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

The nearest airports are Redlands Municipal Airport and San Bernardino International Airport, located approximately 2 miles southwest and 6.25 miles west of the Project site, respectively. The Project, located at the foothills at the base of the San Bernardino Mountains, will provide a mix of residential, commercial, open space, recreational uses, and community public facilities. The Project will not develop land uses with the potential to impede air traffic patterns, increase air traffic levels, or result in a change of location that results in substantial safety risks. Therefore, **no impacts** will occur in this regard.

Threshold: *Would the proposed Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

The Project includes development of an internal circulation system. Moreover, as discussed in Section 5.16.6, the Project will implement a number of mitigation measures to adequately and appropriately mitigate transportation impacts to off-site roadways. The roadways that will be developed on site, and the Project-related improvements off site, will not increase hazards due to a design feature because they will be built to applicable roadway design standards. The preceding discussion under the combined threshold, as well as the following discussion in Section 5.16.6, determined that affected off-site transportation facilities will be less than significant with mitigation measures implemented, and moreover, that the internal circulation will function at acceptable LOS at full build-out. Therefore, impacts in this regard will be **less than significant and no mitigation is required**.

Although not a hazard related to a design feature or incompatible use, in the response to Notice of Preparation (NOP), included as Appendix A to this DEIR, the City of Redlands indicated that the Project may impact existing roadways in the City of Redlands during construction as a result of construction vehicles traveling on roadways potentially impacting the signalization of intersections and resulting in wear and tear on roadways within the city. The traffic generated during construction will be minimal compared to the traffic generated during operations. Nonetheless, mitigation measures **MM AQ 3** requires the developer or construction contractor to implement a traffic control plan during construction that includes traffic control measures such as scheduling activities to minimize congestion. To reduce the wear and tear on roadways within the City of Redlands, mitigation measure **MM TRANS 2** shall be implemented, which will require construction specification to routing trucks through the City of Highland. Therefore, the short-term impacts from Project construction on roadways in Redlands are considered **less than significant after implementation of mitigation**.

Threshold: *Would the proposed Project result in inadequate emergency access?*

The Project's circulation system has been carefully planned to address both on- and off-site circulation requirements. The conceptual layout of the backbone circulation system provides direct, safe, and convenient access to and within the community. Emergency access will be maintained at all times as part of a general provision applicable to all of the Project's land use development. The preceding discussion demonstrates that roadways LOS will be achieved on and off site, with implementation of mitigation where appropriate, at all phases of development including long-term conditions. Further, as

also stated, the internal circulation system will be designed to applicable roadway design guidelines, which articulate the needs of emergency vehicles and access.

The new Greenspot Bridge will effectively bypass the narrow, two-lane existing bridge that is part of the current alignment. This bridge will be a safer means of getting across the Santa Ana River and will facilitate a greater volume of vehicles. This bridge is anticipated to be completed prior to completion of Phase I, and thus, will avoid any access impacts related to the existing narrow bridge.

Therefore, impacts in this regard will be **less than significant and no mitigation is required**.

Threshold: *Would the proposed Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

Alternative modes of travel such as bikes, pedestrians, and transit are not available in the Project site area as no such facilities exist on site in the existing condition. Specifically, the Project site is currently not served by transit within a walkable distance of a quarter-mile, and the nearest transit stop is located on Church Street and Greenspot Road, approximately five miles away from the Project site. (LSA, p. 52)

In the Project's design and development, the Project will create a pedestrian-friendly, bicycle-friendly, and transit-ready system that encourages walking and biking while providing for the safe and efficient movement of vehicles through the community. The Project will create an environment inviting to bicycle and pedestrian travel through the use of landscaped parkways and walkways separate from the street. The Project proposes sidewalks within the public rights-of-way of roadways within the Project site area. An off-street multi-use trail is also proposed to connect residential areas to open space areas within the community and to off-site regional trails and recreational amenities. The network of sidewalks and multi-use trails proposed within the Project will provide bicycle and pedestrian connectivity to all areas within the Project area and to surrounding parks, recreational trails, open space, and activity centers.

The Harmony Specific Plan provides, in most cases, 10-foot sidewalk paths separated from vehicular travel lanes, which are wide enough to accommodate both pedestrians and the casual bicyclist. On-road Class II bicycle lanes are also provided within the roadway network, which, as the City's Circulation Element identifies a Class II bike lane along Greenspot Road, the Project will contribute toward that designation. The Project provides trails that are located off-street within the Project's community greenway system, parks, and natural open space areas. Trails are designed to provide recreational and transportation opportunities for bicyclists and hikers. Certain trails will also be designated for equestrian use and will provide a connection from the Santa Ana River Trail system to the northern trail system that links to the San Bernardino National Forest. (LSA, p. 52)

Bus service within the Project site will be provided by Omnitrans. Two bus stops have generally been identified in coordination with Omnitrans (**Figure 3-12 – Project Trails and Public Transportation System**). The first stop will be located along (New) Greenspot Road, adjacent to the Neighborhood Commercial node (PA 1). The second will also be located along (New) Greenspot Road, near the Community Park (PA 44) and Neighborhood Commercial node (PA 23B). The bus stops will be curb-

adjacent and may be designed as pull out stops. As the Project develops over time, bus service may be expanded within the community. (HSP, p. 6-14)

Thus, implementation of the Project will not conflict with adopted alternative transit policies, plans, or programs. Instead, the Project will serve to greatly enhance alternative transportation infrastructure in the Project area and by its design and development will ensure high quality and performance and safety of such facilities. Therefore, impacts in this regard will be **less than significant and no mitigation is required**.

5.16.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts upon traffic or to reduce impacts to below the level of significance.

MM TRANS 1: Prior to issuance of a building permit for implementing development projects, the developer shall participate in the cost of off-site improvements through payment of “fair share” fees. The improvements are set forth in the Traffic Impact Analysis and listed under the column “Total Improvements Required” in **Table 5.16-J – Summary of Required Intersection Improvements**.

MM TRANS 2: Prior to issuance of grading permits for implementing development projects, the developer or contractor shall include truck routes in the construction specifications that require trucks access to the Project site through the City of Highland.

In addition to the required improvements set forth in the Traffic Impact Analysis and mitigation measures **MM TRANS 1** and **2** above, the developer shall also be responsible for the construction or payment of fair share towards the following off-site improvements, as directed by the City of Highland:

1. Garnet/SR-38 intersection –ultimate street and traffic improvements. Construct ultimate street and traffic improvements. Minimum lane configuration includes (i) a southbound exclusive right-turn lane, exclusive left-turn lane, through lane, and a right-turn overlap phase, (ii) an eastbound exclusive left-turn lane and a shared through/right lane, and (iii) a west bound through lane, shared through/left lane, exclusive right turn lane, and a right turn overlap phase. Construct improvements west of Garnet Street to transition from two westbound lanes to one westbound lane.
2. Garnet/Newport intersection –improvement and realignment of Garnet Street to curve northeasterly to Newport Road, eliminating the need for northbound traffic on Garnet Street to make a right-angle right turn to go east to the project via Newport Road, and creating the need for northbound traffic on Garnet Street to make a right-angle left turn to continue to go north. Construct a new traffic signal and turn pockets at the new location of the Garnet/Newport intersection, or other such alternative acceptable to the City of Highland.

3. Unless otherwise constructed by the County of San Bernardino, remove the existing Garnet Street Bridge over Mill Creek, and install a new bridge with adequate width to accommodate 2 travel lanes, bike lanes, sidewalks and barrier rails.
4. Removal of the existing pavement and reconstruction and widening of Garnet Street to 40' between Newport Avenue and SR-38 with an adequate roadway structural section.
5. Removal of the existing pavement and reconstruct and widen Newport Avenue to 40' between Garnet Street and the project with an adequate roadway structural section.
6. Removal of the existing pavement and reconstruction and widening of Greenspot Road to 40' between the "S" curve and the west limit of the Greenspot Road Realignment and Greenspot Road Bridge Project currently under construction by the City of Highland.

The developer shall be responsible for payment of fair share towards the following improvements located in the City of Highland:

7. Palm Avenue and Greenspot Road – construct a northbound exclusive right-turn lane and add a right-turn overlap phase. The existing shared through/right lane will become a through lane.
8. SR-210 Eastbound Ramps and Greenspot Road - widen and restripe the north leg of the intersection to accommodate two exclusive southbound left turn lanes and a southbound shared through/right lane. Widen and restripe the west leg of the intersection to accommodate four eastbound thru lanes, one exclusive eastbound right turn lane, and two westbound receiving lanes. Widen and restripe the east leg of the intersection to accommodate two westbound thru lanes, two westbound left turn lanes, three eastbound thru receiving lanes and one eastbound thru receiving lanes.
9. SR-210 Westbound Ramps and Greenspot Road - widen and restripe the west leg of the intersection to accommodate three eastbound thru lanes, one eastbound left turn lane, two westbound receiving left turn lanes, and two westbound thru lanes. Widen and restripe the east leg of the intersection to accommodate two exclusive westbound right turn lanes, four westbound thru lanes, and three westbound receiving thru lanes.
10. Boulder Avenue and Greenspot Road - restripe Greenspot Road west of Boulder Avenue to add a third eastbound through lane. Construct improvements on Greenspot Road east of Boulder Avenue to transition from three eastbound lanes to two eastbound lanes. Add a northbound right-turn overlap phase. Construct a third westbound through lane east of Boulder Avenue.
11. Church Street and Greenspot Road - add a southbound right-turn overlap phase. Construct an exclusive westbound right-turn lane. The existing shared through/right lane will become a through lane.
12. Weaver Street and Greenspot Road - construct a traffic signal.
13. Alta Vista and Greenspot Road - construct a traffic signal.

And the developer shall also be responsible for payment of fair share towards the following improvements located outside the City of Highland. The City of Highland shall collect the fair share payment amount and contribute such amount towards future construction of improvements by other public agencies.

14. Orange Street and SR-38 - construct a second westbound through lane. Construct improvements west of Orange Street to transition from two westbound lanes to one westbound lane. Construct a second northbound through lane. Construct improvements north of SR-38 to transition from two northbound lanes to one northbound lane. Construct a second westbound exclusive left-turn lane.
15. University Street/Central Avenue/I-10 Eastbound On-Ramp - construct a traffic signal. Construct an exclusive southbound left-turn lane and two exclusive northbound left-turn lanes. Construct freeway ramp improvements west of the intersection necessary to transition from two lanes to one lane.
16. University Street and I-10 Eastbound Off-Ramp - construct a traffic signal.
17. Bryant Street and SR-38 - construct a traffic signal. Construct an exclusive eastbound right-turn lane. The existing shared through/right lane will become a through lane.
18. Bryant Street and Oak Glen Road - construct an exclusive southbound right-turn lane and add a right-turn overlap phase. The existing shared through/right lane will become a through lane.
19. Sand Canyon Road, 14th Street, and Yucaipa Boulevard - convert northbound/southbound split phase to protected phase. Construct an exclusive northbound left-turn lane and restripe the northbound shared left/through lane to a through lane. Restripe the southbound shared left/through lane to a through lane. Construct an exclusive westbound right-turn lane and add a right-turn overlap phase. The existing shared through/right lane will become a through lane.
20. I-10 Eastbound Eureka Street Off-Ramp – construct a second off-ramp lane from the ramp diverge area.
21. I-10 Eastbound University Street Off-Ramp – construct a second off-ramp lane from the ramp diverge area.
22. I-10 Westbound Live Oak Canyon Road On-Ramp – construct a second on-ramp lane up to the ramp merge area.

Furthermore, the City of Highland will require the Project to pay development impact fees to mitigate Project-related traffic at locations within the City not analyzed specifically in the Project-specific Traffic Impact Analysis, but are analyzed in the City of Highland's development impact fee program. The amount of the development impact fee will be reduced based on the City's established development impact fee credit policy.

5.16.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

With implementation of mitigation measure **MM TRANS 1** identified above, impacts related to off-site roadways will be less than significant. However, a temporary or short-term impact may occur since the timing of construction of these improvements is uncertain. Thus, it is possible that the required improvements may not be constructed in time to mitigate the Project's impacts upon off-site intersections to acceptable levels. **Therefore, although the Project's intersection impacts will be mitigated, they remain significant until such time as the improvements are completed.**

The Project will impact regional freeway mainlines within five miles and beyond five miles of the site. All freeway segments where improvements are required within San Bernardino County are included in the Measure I program. All freeway segments where improvements are required within Riverside County are included in the TUMF program.¹⁴ Some freeway segments within Los Angeles County are included as part of the Measure R program. In addition, Metro is in the process of creating a fee program to address improvements to the freeway system through a Nexus Study. At this time, however, such programs cannot be considered to provide fully funded or timely construction of freeway improvements to provide for mitigation of Project impacts. Since the timing of these improvements to be constructed by Caltrans or regional transportation agencies, such as SANBAG, is unknown and, since no fee program exists that require neither the City, as lead agency, nor the Project proponent to contribute fair share fees or implement the required freeway mainline improvements, impacts to the freeway mainlines both within five miles and beyond five miles of the Project site will be **significant and unavoidable until improvements are constructed**. Further, as noted for intersections, for freeway segments too, most of the impacts are cumulative impacts and not direct project impacts. At this time, however, such programs cannot be considered to provide fully funded or timely construction of freeway improvements to provide for mitigation of Project impacts.

5.16.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Additional information on cumulative impacts is in Section 7 of this DEIR. However, the Project's cumulative impacts were evaluated in the TIA. Thus, the impacts described in Section 5.16.6, above, are also cumulative impacts. Therefore, the Project will cumulatively contribute to the exceedance of applicable roadway intersection and freeway standards such as LOS and the impacts are cumulatively considerable.

5.16.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

GP City of Highland, *General Plan*, March 2006. (Available at <http://www.ci.highland.ca.us/GeneralPlan/>, accessed May 31, 2013.)

¹⁴ TUMF = Transportation Uniform Mitigation Fee

- HSP City of Highland, *Harmony Draft Specific Plan*, March 2014. (Available at the City of Highland)
- LSA LSA Associates, Inc., *Traffic Impact Analysis, Harmony Specific Plan, City of Highland, San Bernardino County, California*, March 17, 2014. (Appendix M)
- OT 2013 OmniTrans, System Map, January 2013. (Available at <http://www.omnitrans.org/schedules/pdf/Omni%20-%20System%20Map%20Jan13.pdf>, accessed October 22, 2013.)
- RGP City of Redlands, General Plan, Land Use Map, October 1995. (Available at <http://www.cityofredlands.org/sites/default/files/pdfs/DSD/GeneralPlanSDE.pdf>, accessed May 31, 2013.)
- SBCGP FEIR San Bernardino County, *General Plan Program Final Environmental Impact Report and Appendices (SCH# 2005101038)*, February 2007. (Available at <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FinalEIR2007.pdf>, accessed May 31, 2013.)
- YGP City of Yucaipa, General Plan, Tab 7 – Transportation, July 2004. (Available at http://www.yucaipa.org/cityDepartments/DevelopmentServices/General_Plan/Tab_7_Transportation.pdf, accessed May 31, 2013.)

5.17 Utilities and Service Systems

This section evaluates the Project's impacts on utilities and service systems such as water, wastewater, drainage, solid waste, and dry utilities (e.g., electricity and natural gas).

The analysis in this section is based on four technical studies prepared for the Project. The analysis addressing potable and non-potable (recycled) water is based on *Harmony Specific Plan, Domestic Water System*, prepared by RBF Consulting, November 5, 2013 (cited as RBF(a)), and included as Appendix I.2 to this DEIR. The analysis addressing wastewater is based on the *Harmony Specific Plan, Sewer Analysis*, prepared by RBF Consulting, January 8, 2014 (cited as RBF(b)), and included as Appendix I.4 to this DEIR. The analysis addressing water supply is based on *Harmony Water Supply Assessment*, prepared by East Valley Water District (EVWD), September 2013 (referenced and cited as WSA), and included as Appendix I.3 to this DEIR. The analysis addressing dry utilities, i.e., electricity, telecommunications, cable, and natural gas, is based on *The Greenspot Property Dry Utility Report*, prepared by Joanna Futerman, Inc., June 2011 (cited as JFI), and included as Appendix N.1 to this DEIR.

5.17.1 Setting

5.17.1.1 Water Supply and Infrastructure

The Project site is located in the eastern end of EVWD's existing service area. The Project site is located in a portion of the EVWD service area that is not currently served with water services (2010 RUWMP, Figure 7-1). EVWD is a special district formed in 1954 through an election by local residents who wanted water service by a public water agency. Originally called the East San Bernardino County Water District, it was formed to provide domestic water service to the agriculturally based communities of Highland and East Highlands. The name of the agency was changed from East San Bernardino County Water District to EVWD in 1982. Now EVWD serves the generally urban areas of the city of Highland ("City"), which incorporated in 1987, a portion of the city of San Bernardino, and a small portion of unincorporated San Bernardino County. EVWD has a service area of approximately 33.5 square miles, encompassing 63,000 persons, but currently provides service to approximately 27.7 miles of that area. (2010 RUWMP, p. 1-11)

EVWD obtains water from three sources: groundwater from Bunker Hill Groundwater Basin, local surface water from Santa Ana River, and imported water from the State Water Project (SWP) via San Bernardino Valley Municipal Water District (SBVMWD), which is the wholesale water supplier for seven local agencies.¹ Bunker Hill Groundwater Basin is accessed from 20 wells in the western portion of the service area. These wells, in the San Bernardino Basin Area (SBBA), supply approximately 90 percent of the total water supply for EVWD. In addition to groundwater, Plant 134, a 4 million-gallon per day (MGD) water treatment plant, provides surface water from the Santa Ana River and SWP. (2010 RUWMP, p. 7-1). EVWD imports the SWP, as needed, during hydrologically dry years (EVWD (a)).

¹ The seven local retail water purveyors include EVWD; cities of Loma Linda, Redlands, Colton; city of San Bernardino Municipal Water Department; West Valley Water District; and Yucaipa Valley Water District.

Groundwater

Over the last five years, EVWD has drawn the majority of its water supply from wells located within the San Bernardino Basin Area. Currently, 20 wells provide a rated capacity of 25,900 gallons per minute (GPM). Historic groundwater production by EVWD is shown in **Table 5.17-A**. Anticipated groundwater production, from SBBA for future years is detailed on **Table 5.17-B**.

Table 5.17-A – Groundwater Volume Pumped (Acre-Feet)

Basin Name	Metered or Unmetered?	2005	2006	2007	2008	2009
SBBA	Metered	20,942	23,120	20,059	20,813	19,421
<i>Percent of total water supply</i>		<i>89</i>	<i>85</i>	<i>82</i>	<i>87</i>	<i>85</i>

Source: 2010 RUWMP, Table 7-28, p. 7-28.

Table 5.17-B – Groundwater Volume Projected to be Pumped (Acre-Feet)

Basin Name	Metered or Unmetered?	2015	2020	2025	2030	2035
SBBA	Metered	19,486	21,012	24,850	28,742	32,962
<i>Percent of total water supply</i>		<i>85</i>	<i>85</i>	<i>85</i>	<i>85</i>	<i>85</i>

Source: 2010 RUWMP, Table 7-29, p. 7-28.

Some of the EVWD’s wells are impacted by nitrate, perchlorate, fluoride, uranium, and/or volatile organic compounds (VOCs). EVWD has suspended operation at two wells, Wells 12A and 146A. As described below, EVWD has plans in place that will allow these wells to come back on-line. EVWD continues to monitor groundwater contamination and the movement of groundwater contaminant plumes. In response to water quality concerns EVWD has altered operations at other wells to compensate for the reduced capacity and the following actions have been put into place to protect EVWD supply (2010 RUWMP, p. 7-28):

- A wellhead treatment facility has been implemented to treat VOCs from Well 28A using granulated activated carbon.
- A wellhead treatment facility has been implemented to treat nitrate and uranium from Well 40A using ion exchange.
- At Plant 27 and Plant 107, wellhead nitrate and perchlorate treatment facility has been put into operation.
- A centralized treatment plant is under construction at Plant 150 to treat perchlorate from a blend of wells in the southwestern part of the service area including Wells 11A, 12A, and 28A as well as future wells. Subsequent to adoption of the RUWMP, EVWD has considered a new water treatment plant located in the general vicinity of the Project for greater reliability. The water treatment plant will treat surface water from the North Fork Water Company and/or SWP water from the SBVMWD (WSA, p. 18).
- EVWD blends water from Well 39 to deal with high fluoride levels.

- EVWD continues to monitor for nitrates in Wells 25A, 28A, and 9.
- EVWD plans to blend Wells 147, 146A, 146, and 143 to reduce uranium in Well 146A.

These past and ongoing groundwater treatment projects have demonstrated that treatment is an economically viable alternative for handling VOCs, perchlorate, nitrates, and uranium. To manage the long-term potential for continued groundwater contamination, EVWD has an on-going land acquisition program. EVWD has vacant land available for future facilities. Sites are selected for the development of new wells based on knowledge of the plumes’ movement, land availability and engineering feasibility. (2010 RUWMP, pp. 7-28, 7-29).

Based on current conditions water quality is not anticipated to affect EVWD supply reliability. However, water quality issues are constantly evolving. EVWD will take action to protect and treat supplies when needed, but it is well recognized water quality treatment can have significant costs. (2010 RUWMP, p. 7-29). Water quality is discussed in greater detail as it relates to this Project in Section 5.9 of this DEIR.

SBBA is adjudicated on a safe yield basis. EVWD therefore has the opportunity to develop additional wells and over-extract groundwater under specified conditions contained in the stipulated judgment. The wells in general have provided a stable source of water supply. Past records show that EVWD has not removed any well from its supply source during drought conditions, although, some wells had to be lowered to continue extraction of groundwater. During 1990, the driest year on record for the Southern California, EVWD was impacted only by lowered groundwater levels and increased pumping costs. EVWD maintained full capability to use all wells within its system. Extensive modeling has been used to examine groundwater recharge, groundwater pumping, basin storage, groundwater flow, and groundwater plume location and plume migration. Based on these studies it is anticipated that groundwater pumping by EVWD and other SBBA users in SBVMWD service area will not be reduced or curtailed during a single-dry or multi-dry year, as shown on **Table 5.17-C**. (2010 RUWMP, p. 7-30)

Table 5.17-C – Groundwater Supplies for Single Dry and Multiple Dry Years (Acre-Feet)

Groundwater Supply	2015	2020	2025	2030	2035
Single Dry Year ^a	27,500	33,750	40,000	46,250	52,500
Multiple Dry Year	24,000	30,250	36,500	42,750	49,000

Source: 2010 RUMWP, Table 7-30, p. 7-29.

^a Assumes EVWD is allowed to extract an additional 3,500 AFY groundwater in-lieu of receiving a full share of available SWP supplies during a single-dry year.

Local Surface Water

EVWD has current water rights of 4 MGD, or 4,500 acre-feet per year (AFY), of Santa Ana River water through stock ownership in the North Fork Mutual Water Company. EVWD is currently the major shareholder in the company and continues to pursue the purchase of additional stock. EVWD has the ability to expand to about 6.5 MGD (7,300 AFY) with the conversion of remaining agricultural properties and water shares of stock. This is expected to occur by 2015. (2010 RUWMP, p. 7-29) **Table 5.17-D** shows the existing and planned surface water supplies.

Table 5.17-D – Surface Water Supplies from Existing and Planned Sources of Water (Acre-Feet)

Source	2010	2015	2020	2025	2030	2035
Santa Ana River	3,301	7,300	7,300	7,300	7,300	7,300

Source: 2010 RUMWP, Table 7-31, p. 7-30.

Note: EVWD has current water rights of 4 MGD of Santa Ana River water with the ability to expand to about 6.5 MGD with the conversion of remaining agricultural properties and water shares of stock.

Currently, no water quality issues have been identified that affect EVWD’s surface water supplies from the Santa Ana River. However, water quality issues are constantly evolving. EVWD will take action to protect and treat the supply when needed, but it is well recognized water quality treatment can have significant costs. (2010 RUWMP, p. 7-30) Water quality is discussed in greater detail as it relates to this Project in Section 5.9 of this DEIR.

Supplies from the Santa Ana River are affected by seasonal and annual variations. Records from multiple precipitation gauges and in the Santa Ana watershed were reviewed. Year 2003 was selected as the year in the historical sequence that most closely represents median runoff levels and patterns. From the same data, year 2002 was selected as the single-dry year; this year had only 25 percent of normal precipitation. Years 2000 through 2002 were the selected as the period for the multiple-dry period. This three year period had the lowest average runoff for a consecutive multiple year period. (2010 RUWMP, p. 7-30) Anticipated local surface supplies are detailed on **Table 5.17-E**.

Table 5.17-E – Surface Water Supplies in Single Dry and Multiple Dry Years (Acre-Feet)

Anticipated Supply	Normal	Single-Dry Year	Multiple-Dry Years		
			Year 1	Year 2	Year 3
Santa Ana River	4,480	1,120	2,867	3,091	1,120
<i>Percent of Normal</i>	<i>N/A</i>	<i>25</i>	<i>64</i>	<i>69</i>	<i>25</i>
Basis of Water Year Data	2003	2002	2000	2001	2002

Source: 2010 RUMWP, Table 7-32, p. 7-30.

Imported Water Supplies

EVWD currently supplements its local supply with SWP deliveries via SBVMWD, and in the past this SWP has made up a small amount of EVWD’s water supply. EVWD anticipates seeking regular SWP supplies to supplement Santa Ana River water to run Surface Water Treatment Plant 134. Plant 134 was designed to treat Santa Ana River water and SWP and was completed in 1996. Since its construction, the plant has averaged approximately 2,700 AFY in production. Plant 134 has a nameplate capacity of 4 MGD, but production has been approximately only 60 percent of its annual capacity due to a number of issues related to reduced winter time demand and scheduled maintenance. EVWD is planning to replace the existing filters and expand the plant to 8 MGD by installing microfiltration treatment. The expansion will not only add capacity, but the plant reliability is anticipated to be much higher. This expansion will allow EVWD to increase its use of SWP. The estimated amount of imported water supply shown on **Table 5.17-**

F has been estimated by EVWD and provided to SBVMWD, and represents the supplies which are anticipated to be available to EVWD in a normal year. **Table 5.17-F** does not represent how much water EVWD may actually need or use in a given year. (2010 RUWMP, pp. 7-26 and 7-27)

Table 5.17-F – Wholesale Supplies from Existing and Planned Sources of Water (Acre-Feet)

Wholesale Source	2010	2015	2020	2025	2030	2035
Purchase from SBVMWD ^c	0	8,960	8,960	8,960	8,960	8,960

Source: 2010 RUMWP, Table 7-26, p. 7-27.

Note: This table represents the supplies anticipated to be available to EVWD, not necessarily the amount of a given supply that will be utilized by EVWD.

SWP deliveries available to EVWD in a normal year is also shown on **Table 5.17-F**, above. During times of statewide drought conditions, the availability of SWP may be reduced. These conditions are normally known in advance, providing EVWD with the opportunity to plan for the reduced supply. During a drought period, it is SBVMWD’s priority to make direct deliveries to the water treatment plants operated by the city of Redlands, West Valley Water District, Yucaipa Valley Water District, city of San Bernardino Municipal Water Department (SBMWD), and EVWD and to maintain lake levels at Big Bear Lake (Big Bear Lake water also feeds the water treatment plants of the city of Redlands and EVWD). Since EVWD’s water treatment plant can use local surface water and imported water, during a single-dry year EVWD may elect to take a small amount of imported water, making more imported water available to other agencies. In this case, EVWD would utilize additional groundwater through groundwater well production from SBBA. In a multiple dry year SBVMWD expects between 44,858 AF and 45,910 AF of water to be available, meaning SBVMWD could fulfill normal direct deliveries to water treatment plants in a multiple-dry year, including the EVWD treatment plant. (2010 RUWMP, p. 7-27) **Table 5.17-G** estimates how imported water supplies available to EVWD may be reduced during drought conditions.

Table 5.17-G – Wholesale Supplies in Single Dry and Multiple Dry Years (Acre-Feet)

Wholesale Supply	2015	2020	2025	2030	2035
Single Dry Year	500	500	500	500	500
Multiple Dry Year	8,960	8,960	8,960	8,960	8,960

Source: 2010 RUMWP, Table 7-27, p. 7-27.

5.17.1.2 Wastewater Infrastructure

As mentioned, the Project site is located within EVWD’s service area, which also provides wastewater services. The Project site is located in a portion of the EVWD service area that is not currently served with wastewater services (2010 RUWMP, Figure 7-1). Nor are there any existing sewer collection facilities in the immediate vicinity. The nearest existing sewer collection facility is located to the west in Greenspot Road approximately 10,000 feet from the Project site. From this point, sewage is conveyed to the west in existing facilities for approximately 11 miles to the Margaret H. Chandler Water Reclamation Plant (WRP) operated by SBMWD. (RBF(b), p. 1)

The SBMWD owns and has operated the WRP 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 de-nitrification and secondary clarification, ensuring all water discharged into the Santa Ana River is properly treated. The WRP is a Secondary Treatment facility serving a population of over 185,000 including the cities of San Bernardino and Loma Linda, the EVWD 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. (GP DEIR, p. 5.16-7) The wastewater reclamation facility, which includes both primary and secondary treatment, has the capacity to process 33 MGD, or 36,948 AFY, and currently processes approximately 29 MGD (2010 RUWMP, p. 10-31). In March 1996, the cities of San Bernardino and Colton jointly opened the Rapid Infiltration and Extraction (RIX) facility, where secondary-treated water undergoes the final filtering and disinfecting process to produce wastewater that is superior or equivalent to that produced by conventional filtration systems and is suitable for recycling into the Santa Ana River (GP DEIR, p. 5.16-7). The RIX (tertiary treatment) facility has a capacity of 41 MGD and currently treats 33 MGD (2010 RUWMP, p. 8-26).

The general direction of wastewater flow is from northeast to southwest towards the San Bernardino Regional Wastewater Treatment Plant. EVWD maintains a Joint Powers Agreement (JPA) with the city of San Bernardino requiring that the city of San Bernardino accept all domestic and commercial/industrial sewage generated within the regional reclamation plant's service area. (GP DEIR, p. 5.16-7)

Sewer collection systems within the City are maintained by the EVWD and the City's Department of Public Works. EVWD has prepared a Master Plan of Sewage that addresses the current and future sewer needs of the City. The EVWD's existing sewage collection system delivers over 2 billion gallons of wastewater per year to the San Bernardino Regional Wastewater Treatment Plant. This treatment plant works jointly with the cities of San Bernardino and Loma Linda. The plant must meet strict quality standards because it returns cleaned wastewater to the Santa Ana River, where it is reused by downstream communities. (GP DEIR, p. 5.16-7)

Due to the large volume of discharge of this plant to the Santa Ana River, the state Regional Water Quality Control Board (RWQCB) required the cities of San Bernardino and Colton to upgrade the quality of their wastewater discharges to the Santa Ana River to meet certain established discharge standards. In cooperation with the Santa Ana Watershed Project Authority (SAWPA), and with the approval of RWQCB, the RIX facility was constructed. This plant treats secondary treated wastewater from the two cities' treatment plants, including the San Bernardino Wastewater Treatment Plan. Wastewater from these facilities is applied to a percolation basin. The wastewater percolates through the soil, and physical and biological treatment occur, removing many harmful pollutants from the wastewater. After the wastewater infiltrates approximately 15 feet deep, the treated wastewater is extracted through shallow wells surrounding the basin and discharged to the Santa Ana River. (GP DEIR, pp. 5.16-7, 5.16-8)

For industrial wastewater and desalter concentrate, which is produced by the wastewater reclamation plants, SAWPA operates the Inland Empire Brine Line, formerly the Santa Ana Regional Interceptor Line, and oversees water quality for the Santa Ana River watershed. The Inland Empire Brine Line runs from the city of San Bernardino to a point just downstream of the Prado Dam (2010 RUWMP, p. 2-23). The

Inland Empire Brine Line delivers non-reclaimable wastewater from the upper Santa Ana River watershed to the Pacific Ocean for disposal after treatment at the Orange County Sanitation District's Regional Treatment Plant No. 1. The upstream extension of Inland Empire Brine Line to the San Bernardino Regional Wastewater Treatment Plant was completed in 1995 (GP DEIR, p. 5.16-8). A 13-mile connection to the Inland Empire Brine Line is currently being constructed (2010 RUWMP, p. 2-23). The Inland Empire Brine Line was constructed with a total capacity of 30 MGD and its current flow is 12 MGD (SAWPA Presentation).

5.17.1.3 Solid Waste Services

Two private waste collectors provide solid waste service to the City. These collectors are Cal Disposal and Jack's Disposal and Recycling, which is owned and operated by Burrtec Waste Industries. Cal Disposal is located at 26009 East 9th Street in the city of San Bernardino. Jack's Disposal and Recycling, which includes Curran Rubbish Disposal, is located at 5455 Industrial Parkway, also in the city of San Bernardino. (GP DEIR, p. 5.16-9)

Solid waste management involves source reduction, recycling and composting, and safe transformation and disposal of solid wastes. The City operates under the San Bernardino County Waste Management Division and is responsible for the operation and management of the county's solid waste disposal system that consists of six regional landfills, eight transfer stations, and five community collection centers (GP, p. 5-59). Solid waste collected in the City is disposed of at three landfills: Colton Sanitary Landfill, Mid-Valley Sanitary Landfill, and San Timoteo Sanitary Landfill. The Colton Sanitary Landfill is located approximately 13.4 miles southwest of the Project site at the western terminus of Tropica Rancho Road in the city of Colton. The Mid-Valley Sanitary Landfill is located approximately 18.1 miles northwest of Project site at 2390 N. Alder Avenue in the city of Rialto. The San Timoteo Sanitary Landfill is located approximately eight miles southwest of the Project site at the terminus of Refuse Road/Palomares Road in the city of Redlands. The Colton Sanitary Landfill and Mid-Valley Sanitary Landfill are both owned and operated by the county of San Bernardino, and the San Timoteo Sanitary Landfill is owned and operated by the city of San Bernardino. All three landfills are classified as Class III, which are suitable for disposal of non-hazardous and general municipal waste. (GP DEIR, p. 5.16-9)

The City has developed and/or participated in recycling programs throughout the area in an effort to reduce the amount of recyclable materials disposed of at area landfills. In 1991, the City sponsored a recycling program that separates, collects, and recycles glass, plastics, cardboard, and fiberboard at no cost to City residents. Both residential and commercial customers participate in the greenwaste and recycle programs that are provided. (GP DEIR, p. 5.16-9) Moreover, the City is mandated by the state to provide refuse collection every seven days, and thus, refuse collection services are mandatory (City PS). The following table shows the current capacity and intake for landfills serving the City.

Table 5.17-H – Landfill Capacity and Intake

Facility	Permitted Daily Intake (tons per day)	Total Estimated Permitted Capacity (cubic yards)	Estimated Remaining Permitted Capacity (cubic yards)	Expected Closure Date
Colton ^a	3,100	15,497,000	2,700,000	January 1, 2017
Mid-Valley ^b	7,500	101,300,000	67,520,000	April 1, 2033
San Timoteo ^c	1,000	20,400,000	11,360,000	May 1, 2016

^a CalRecycle 2011a
^b CalRecycle 2011b
^c CalRecycle 2011c

As shown on the above table, under existing permits and disposal rates, the Colton Sanitary Landfill has a remaining capacity of approximately 17.4 percent with a closure date in January 2017; Mid-Valley Sanitary Landfill has a remaining capacity of approximately 66.7 percent, with a closure date in April 2033; and San Timoteo Sanitary Landfill has a remaining capacity of approximately 55.7 percent, with a closure date in May 2016. The projected lifespan of these landfills could change based on the level of regional growth, waste generation, future expansion plans, disposal trends like recycling, and the effectiveness of new and existing waste stream reduction and recovery programs (GP, p. 4-18). The closure of other regional landfills may also affect the projected lifespan of the Colton, Mid-Valley and San Timoteo landfills. In the future, the City may utilize additional landfills within San Bernardino County, including transfer stations.

Available landfill space in San Bernardino County is decreasing. The state has enacted legislation requiring that localities reduce the amount of waste they send to landfills, such as Assembly Bills 939 and 341 (discussed further in Section 5.17.3.3). To reach this goal, it is essential that the waste stream be managed through source reduction, reuse, and recycling efforts. Reduction and recycling will increase landfill capacity. Further, as of January 1, 2011, the state enacted new CALGreen Building Standards, which require construction and demolition waste landfill diversion of a minimum of 50 percent. Further, San Bernardino County operates the Comprehensive Disposal Site Diversion Program (CSDSDP) at most disposal sites. The objective of the program is to increase recycling efforts in response to the state-mandated waste reduction goals. (C&D Guide, p. 2)

5.17.1.4 Electricity Supply and Infrastructure

Southern California Edison (SCE) provides electricity supply and infrastructure to the City (GP DEIR, p. 5.16-9). SCE maintains a local office located at 287 Tennessee Street in the city of Redlands. Local to the Project site, SCE also operates a substation, Santa Ana River No. 3, along Greenspot Road in the City, approximately 600 feet south of the Santa Ana River Bridge; and Power House No. 1 just north of Mill Creek, also referred to as Mill Creek No. 3, at the southeastern-most area of the Project site. In particular, electricity is currently provided to and around the Project site via aboveground, overhead power transmission lines. The following discussion details the existing electricity transmission facilities located off and on site.

Off-Site Facilities

Beginning along the east-west portion of Greenspot Road, east of Santa Paula Street and just south of the west end of Alder Creek Road, SCE's overhead 33 kilovolt (kV) and 12 kV Cardiff line crosses Greenspot Road from west to east. The line proceeds in an easterly direction in a position well north of the future Greenspot Road right-of-way (as part of the roadway realignment and new Greenspot Road Bridge project) until it reaches a position approximately 1,500 feet west of the centerline of Santa Ana Canyon Road. At this location, it transitions to the south side of Greenspot Road. The line continues east to Santa Ana Canyon Road, crosses the roadway, and then generally follows Santa Ana Canyon Road across the Santa Ana River to the Santa Ana River No. 3 substation. (JFI, p. 11)

Along the north-south portion of Greenspot Road, SCE's Cardiff-Greenspot transmission line is located on the west side of the roadway generally along the Project's western boundary. From the southwestern-most point of the Project site, the line extends northerly to Santa Ana Canyon Road with two points where the line breaks off to the east. Although a transmission line, Cardiff-Greenspot currently supports distribution facilities consisting of 33 kV and 12 kV circuits. The power pole line maintains a position approximately 60 feet west of Greenspot Road's centerline until it reaches the vicinity of the Santa Ana River No. 3 substation, where it transitions to a position approximately 20 feet west of Greenspot Road's centerline. This first break off from this line to the east occurs just south of the substation wherein the 33 kV and 12 kV circuits split off across Greenspot Road. The 33 kV line continues northerly across the Project site to eventually connect with the Cardiff line, and the 12 kV line terminates at a pump station mid-way across the Project site between Greenspot Road and Power House No. 1. The second break off to the east occurs across from the substation wherein the 33 kV crosses to the east side of Greenspot Road and terminates at the substation. The 12 kV circuit continues northerly, along with a Verizon telecommunications line, on the west side of Greenspot Road. It crosses the Santa Ana River and connects at Santa Ana Canyon Road with the abovementioned east-west Cardiff line, which runs east-west along the north and south side of Greenspot Road and consists of 33 kV and 12kV facilities. (JFI, pp. 8-11)

On-Site Facilities

There are several different SCE overhead distribution lines on site, and one transmission line crossing the Project site that currently supports distribution facilities. Some lines are no longer in use. (JFI, p. 20) The SCE transmission power pole line that traverses the Project site currently supports two distribution circuits consisting of 33 kV and 12 kV. There are nine transmission power poles from the top of the hill overlooking the Santa Ana River No. 3 substation, to the backside of the hill overlooking Santa Ana Canyon Road. (JFI, pp. 22-23) There are also two distribution power poles supporting 12 kV facilities on the back slope of the hill, and two other distribution power poles that are further north into the canyon. These facilities terminate at a pump station approximately 1,300 feet northeast from the Santa Ana River No. 3 substation. (JFI, p. 25)

At Emerald Avenue and Villiers Street, an SCE riser power pole located at the northwest corner dips to a buried underground residential distribution (BURD) transformer at the southwest corner. This transformer is connected to two other BURD transformers, which combined provide underground service to the residents of the three large properties located on the south side of Villiers Street, east of

Emerald Avenue. There is one other property, which is only land, on the south side of Villiers Streets at the corner of Villiers Street and Sapphire Avenue that does not currently receive utility services. (JFI, p. 39) Moreover, there are six power poles directly north of the SCE riser power pole provide service to the permanent SBVMWD facility located at the terminus of the line, approximately 1,200 feet north from the Emerald Avenue and Villiers Street intersection (JFI, p. 41). Further, 10 power poles make up the line that breaks off to the west of Emerald Avenue at the third power pole north of SCE riser power pole and three power poles break off to the east of said power pole. Both the east and west break off lines serve SBVMWD facilities. (JFI, pp. 42-43) There is also a metering pole located on the east side of Emerald Avenue, approximately 140 feet north of Villiers Street, which serves an SBVMWD facility. The metered service is currently served underground. (JFI, p. 43)

At Sapphire Avenue and Ems Avenue, there is one power pole located on the west side of Sapphire Avenue, north of Ems Avenue. There are three power poles located in the orange groves north of Sapphire Avenue. These four power poles provide service to an old irrigation well site, approximately 1,000 feet north of the Sapphire Avenue and Ems Avenue intersection. (JFI, p. 44) There is a power pole line on the north side of Ems Avenue and west of Sapphire Avenue consisting of one SCE pole and five Verizon telecommunication poles supporting SCE facilities and a small telephone cable. The first five power poles are located along the Project site boundary and the sixth power pole, and its cable span, is located approximately 100 feet west of the Ems Avenue terminus on the Project site. This power pole also has a transformer attached. (JFI, p. 46)

There are approximately seven properties east of the easterly Project site boundary that obtain access, electricity and telephone services from a roadway (Newport Avenue) and transmission power poles that cross the Project site. These single family residences are served by two separate 12 kV services that connect to the northerly and southerly group of properties. The source for the electricity service to these single family residences is the power pole line on the south side of Mill Creek Road/Highway 38. A 12 kV line break to the north and crosses the creek to SCE Power House No. 1, Millcreek, located approximately 750 feet north of Mill Creek Road/Highway 38 and 1,200 feet south of Newport Avenue. While the first three power poles north of Power House No. 1 are south of the Project site boundary, the power pole line proceeds approximately 3,500 feet north and east until the line crosses the easterly Project site boundary, providing service to the most northerly group of three single family residences. From the fifth power pole north of Power House No. 1, and the second power pole located on site, a line breaks off to the east and roughly parallels the southerly property line for approximately 3,000 feet until it crosses the easterly Project site boundary, providing service to the southerly group of four single family residences. Moreover, the combined length of the two 12 kV power pole lines is approximately 6,500 lineal feet, and consists of 22 power poles on the Project site. The Verizon telecommunications cable is also installed along these power poles at mid-pole height. (JFI, pp. 49, 51)

5.17.1.5 Telecommunications Supply and Infrastructure

The City relies on a continual supply of affordable energy resources and telecommunication services from various private companies to maintain a certain standard of living and to support the functioning of the City's economy. The utility infrastructure is expected to expand with growth and new development in the City. (GP, p. 4-19)

Verizon Communications, Inc., provides telephone service to the Project site area. The closest backbone underground system is located east of Santa Paula Street on the east-west portion of Greenspot Road at an existing residential subdivision, approximately 9,000 feet west of the future easterly bridge transition on the north-south portion of Greenspot Road. In addition, a telephone pole line supporting a small cable estimated to be 50 pair exists on the west side of the north-south portion of Greenspot Road, located approximately 20 feet west of the roadway's centerline. The line extends in this position until it reaches a location opposite the Santa Ana River No. 3 substation. At this point, the telephone pole line terminates and the cables are installed on the realigned transmission line which is also approximately 20 feet from the roadway's centerline. The cable remains on the transmission line for a total of four poles and then switches to a 12 kV distribution line that continues north over the Santa Ana River Bridge to Santa Ana Canyon Road. Further, there are currently no overhead or underground telephone facilities on the east-west portion of Greenspot Road from the east end of Santa Paula Street, where the existing backbone terminates to Santa Ana Canyon Road. (JFI, pp. 80-81)

5.17.1.6 Cable Supply and Infrastructure

Time Warner, Inc., will provide cable television service and infrastructure to the Project site area, but currently does not have any facilities in the vicinity of the Project site (JFI, p. 91).

5.17.1.7 Natural Gas Supply and Infrastructure

The Southern California Gas Company (SCG) provides natural gas service to the City, and will provide natural gas supply and infrastructure to the Project site area. SCG has a local office located at 624 West Fourth Street in the city of San Bernardino. (GP DEIR, p. 5.16-10) The availability of natural gas is based on current conditions of gas supply and regulatory policies, and SCG has indicated it provides gas service in accordance with the conditions set forth by the state Public Utilities Commission (PUC) (GP, p. 4-20). SCG anticipates that an ample supply of natural gas can be provided to the City (GP, p. 4-20).

Currently, SCG does not have any main in the vicinity of the Project site. The closest gas facilities includes a 4-inch high pressure main located 18 feet south of Greenspot Road's centerline along the east-west portion of the roadway, extending from Santa Paula Street east to a position approximately 1,480 feet west of Santa Ana Canyon Road. At this point, the main crosses to a position 18 feet north of Greenspot Road's centerline. The main then proceeds to a position 571 feet south of Santa Ana Canyon Road's centerline, where it terminates as a medium pressure main. (JFI, p. 92)

5.17.2 Thresholds of Significance

According to Appendix G of the State *CEQA Guidelines*, impacts to utilities and services systems may be considered potentially significant if the Project would:

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;

- 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;
- have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and/or
- comply with federal, state, and local statutes and regulations related to solid waste.

Additionally, while not specifically in Appendix G of the State *CEQA Guidelines*, impacts to utilities and services systems may be considered potentially significant if the Project would:

- increase demand for other utility and service systems, the construction of which could cause significant environmental effects.

5.17.3 Related Regulations

5.17.3.1 Water

Federal

Clean Water Act

The Clean Water Act (CWA) is the principal federal law that addresses water quality. The primary objectives of the CWA are to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," and to make all surface waters "fishable" and "swimmable." The implementation plan for these objectives includes the regulation of pollutant discharges to surface water, financial assistance for public wastewater treatment systems, technology development, and non-point source pollution prevention programs. The CWA also requires that states adopt water quality standards to protect public health or welfare and enhance the quality of water. The use and value of state waters for public water supplies, propagation of fish and wildlife, recreation, agriculture, industrial purposes, and navigation must also be considered by the states.

In 1972, the CWA was amended to prohibit the discharge of pollutants to waters of the United States unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The CWA focused on tracking point sources, primarily from wastewater treatment facilities and industrial waste discharges, and required implementation of control measures to minimize pollutant discharges. The CWA was amended again in 1987, adding Section 402(p), to provide a framework for regulating municipal and industrial storm water discharges. In November 1990, the United States Environmental Protection Agency (USEPA) published final regulations that establish requirements for specific categories of industries, including construction projects that encompass greater than or equal to five acres of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those greater than or equal to one acre. The regulations require that storm water and non-storm

water runoff associated with construction activity, which discharge either directly to surface waters or indirectly through municipal separate storm sewer systems (MS4s), must be regulated by an NPDES permit.

Pursuant to CWA Section 404, the United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into “Waters of the United States,” including wetlands. Waters of the United States are defined in USACE regulations 33 CFR part 328.3(a) as navigable waters in the traditional sense; however, it also includes adjacent wetlands and tributaries to navigable waters and other waters where the degradation or destruction of which could affect interstate or foreign commerce.

The CWA also requires all states to conduct water quality assessments of their water resources to identify water bodies that do not meet water quality standards. The water bodies that do not meet water quality standards are placed on a list of impaired waters pursuant to the requirements of CWA Section 303(d).

State

California Green Building Standards (CALGreen) Code

On January 1, 2011, the 2010 California Green Building Standards (CALGreen) Code took effect. The CALGreen Code was adopted as part of the California Building Standards Code in the California Code of Regulations (Part 11 of Title 24). The purpose is to encourage sustainable construction practices that reduce negative impacts on the environment through planning and design, energy efficiency, water efficiency and conservation, material conservation, resource efficiency, and environmental quality. The CALGreen Code also includes design strategies to reduce vehicle miles traveled and greenhouse gas emissions. The CALGreen Code is applicable to the planning, design, operation, construction, use, and occupancy of every newly construction building or structure, both residential and nonresidential, throughout the state. As with other uniform building codes, CALGreen is designed to provide certainty and uniformity throughout the state while ensuring that the efficient and non-wasteful consumption of finite resources is carried out through design features.

Specifically regarding water conservation, the following design standards are enumerated in the CALGreen Code to which this Project is required to comply:

- Indoor water use shall be reduced by at least 20 percent using one of the following methods: 1. Water saving fixtures or flow restrictors shall be used; 2. A 20 percent reduction in baseline water use shall be demonstrated (Section 4.303.1);
- When using the calculation method specified in Section 4.303.1, multiple showerheads shall not exceed maximum flow rates (Section 4.303.2);
- Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements (Section 4.303.3);
- Automatic irrigation systems controllers installed at the time of final inspection shall be weather-based (Section 4.304.1);
- Recycled water piping installed (Section A4.305.2);

- Recycled water is used for landscape irrigation in publicly maintained areas (Section A4.305.3);
- Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows: 1.) For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day; 2.) For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory or beauty salon or barber shop projected to consume more than 100 gal/day (Section 5.303.1.1);
- Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000 gal/day (Section 5.303.1.2);
- A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided (Section 5.303.2);
- When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time (Section 5.303.2.1);
- Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the requirements listed for each type in Items listed in Table 5.303.6. (Section 5.303.6);
- A water budget shall be developed for landscape irrigation use (Section 5.304.1);
- For new water service, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas between 1,000 square feet and 5,000 square feet (Section 5.304.2); and
- Automatic irrigation system controllers installed at the time of final inspection shall comply with the following: 1) Controllers shall be weather-based or soil-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change; 2) weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communications with the controller(s). Soil moisture-based controllers are not required to have rain sensor input (Section 5.304.3.1).

Water and Government Code

The state Water Code was established to regulate the use and conservation of water for the public benefit. State Water Code Sections 13550-13556 provide that local, regional, or state agencies shall not use water from any source of quality for non-potable uses if suitable recycled water is available as provided in Water Code Section 13550.

State Water Resource Control Board

State Water Resources Control Board (SWRCB), and nine RWQCBs are responsible for implementing the CWA and the state Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act, Section 13000, directs each RWQCB to develop a Water Quality Control Plan for all areas within its

region. The plan is the basis for each RWQCB's regulatory programs. The Project is located within the purview of the Santa Ana RWQCB (Region 8), and must comply with applicable elements of the region's plan, as well as the Porter-Cologne Water Quality Control Act.

Water Supply Laws

The Project is required to comply with Water Code Section 10910 *et. seq.*, commonly referred to as Senate Bill (SB) 610. In October 2001, SB 610 was signed into state law with an effective date of January 1, 2002. SB 610 amended existing legal requirements for analyzing water supply sufficiency for certain development projects. Water supply sufficiency is analyzed in relation to the water purveyor's existing and future water sources and the purveyor's existing and projected water demand in addition to the projected demand associated with the "project," as defined by SB 610, resulting in the production of a project-specific Water Supply Assessment (WSA). The WSA also requires additional analysis if any portion of the water supply identified to serve the project includes groundwater.

The requirements of SB 610 are triggered for certain "projects," as defined by SB 610 that is going through the CEQA process. During the CEQA process, the lead agency for the Project is required to request a WSA from the appropriate water purveyor that will serve the project.

SB 610 defines a "project" as:

- a residential subdivision of 500 dwelling units or more;
- a shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- a commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- a hotel or motel having more than 500 rooms;
- an industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor space; or
- a mixed-use project including one or more of the aforementioned projects or any other project demanding an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

At full build-out, the Project site will encompass approximately 3,632 residential dwelling units of varying densities ranging from Estate Residential (1 dwelling unit per acre) to High-Density Residential (15 dwelling units per acre). The residential component of the Project alone meets the "project" definition of SB 610, and as such, a WSA is required for this Project. The Project's WSA was prepared and approved by EVWD in September 2013. A copy of the WSA is included as Appendix I.3 to this Draft EIR.

Urban Water Management Planning Act

In 1983, the state Legislature enacted the Urban Water Management Planning Act, which was codified into the state Water Code Sections 10610 to 10656. Water Code Section 10610.4 requires urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies.

Every five years, water suppliers are required to develop urban water management plans to identify short-term and long-term water demand management measures to meet growing water demands. EVWD, as a water supplier, is required to prepare and adopt an Urban Water Management Plan (UWMP). The Project is expected to comply with the requirements of the Urban Water Management Planning Act.

Water Conservation in Landscaping Act

The Water Conservation Act of 2009, or Senate Bill 7x-7, which was enacted in November 2009, set a requirement for water agencies to reduce their per capita water use by the 2020. The overall goal is to reach a statewide reduction of per capita urban water use of 20 percent by December 31, 2020, with an intermediate 10 percent reduction by December 31, 2015. Demand reduction can be achieved through both conservation and the use of recycled water as a potable demand offset.

Local

Santa Ana Watershed Project Authority

Water supply and water quality in the Santa Ana Watershed are overseen by the SAWPA, a joint powers authority of the Eastern Municipal Water District, Inland Empire Utilities Agency, Orange County Water District, SBVMWD, and Western Municipal Water District. The City is located within the jurisdictional boundary of the SBVMWD.

SAWPA's program to address the water resource needs for the region is identified as the Santa Ana Integrated Watershed Program and serves as the regional water management plan for the entire watershed. This program was initiated in 1998 with SAWPA's Water Resources Plan. The Water Resources Plan described the measures that must be taken to more efficiently utilize both local and imported water resources. This plan was updated and expanded in 2002 as SAWPA's 2002 Santa Ana Integrated Watershed Plan and most recently in November 2010 as the One Water One Watershed Plan. Projects included in the plan are funded in part through a variety of sources including agency resources such as utility user fees and general revenue, regional agencies such as Metropolitan Water District of Southern California for conservation and local resource projects, federal funding, state grant funding such as Proposition 84, and loans such as the State Revolving Fund.

Regional Water Facilities Master Plan

The SBVMWD Regional Water Facilities Master Plan provides the San Bernardino Valley with an implementation strategy within the basin to meet future demand requirements for the region and is the UWMP for the San Bernardino Valley. The plan gives the highest priority to further development of local supplies, with imported water being used to meet the remaining needs. Other resource management strategies of the plan include water conservation, groundwater management, surface water management, imported water management, reclaimed water management, and spreading operations management. This implementation strategy provides the municipal water providers with the ability to meet future water demand within the San Bernardino Valley.

City of Highland General Plan

The General Plan sets forth goals and policies to implement the City's vision. The General Plan is the primary reference when making development and conservation decisions that involve or impact the

City. The Public Facilities and Services Element describes the systems and sets policy for water, wastewater, drainage, and other infrastructure systems that also support proposed land uses. In addition, it provides policy direction for service programs related directly to the use of these facilities. The applicable Public Facilities and Services Element goals and policies to this Project are listed below:

- Goal 4.2:** Provide a water system that produces high quality water, sufficient water pressure and necessary quantities of water to meet domestic demands.
- Policy 4.2.1:** Continue to work with the East Valley Water District to provide an efficient and economic distribution of adequate water supply and pressure to the District's service areas in Highland.
- Policy 4.2.2:** Ensure a high quality water supply that meets or exceeds State and Federal health standards.
- Policy 4.2.3:** Work with the East Valley Water District and local elected representatives to better define the future availability of water for the Highland community.
- Policy 4.2.4:** Work with the East Valley Water District to promote water conservation and education programs, such as public education programs available through the Environmental Learning Center in Highland.

The Project will comply with the applicable General Plan goal and policies.

5.17.3.2 Wastewater State

California Green Building Standards (CALGreen) Code

On January 1, 2011, the CALGreen Code took effect. The CALGreen Code was adopted as part of the California Building Standards Code in the California Code of Regulations (Part 11 of Title 24). The purpose is to encourage sustainable construction practices that reduce negative impacts on the environment through planning and design, energy efficiency, water efficiency and conservation, material conservation, resource efficiency, and environmental quality. The CALGreen Code also includes design strategies to reduce vehicle miles traveled and greenhouse gas emissions. The CALGreen Code is applicable to the planning, design, operation, construction, use, and occupancy of every newly construction building or structure, both residential and nonresidential, throughout the state. As with other uniform building codes, CALGreen is designed to provide certainty and uniformity throughout the state while ensuring that the efficient and non-wasteful consumption of finite resources is carried out through design features.

Specifically regarding wastewater, the following design standards are enumerated in the CALGreen Code to which this Project is required to comply:

- Recycled water piping installed (Section A4.305.2);
- Recycled water is used for landscape irrigation in publicly maintained areas (Section A4.305.3); and

- Each building shall reduce the generation of wastewater by one of the following methods: 1.) The installation of water-conserving fixtures or 2.) Utilizing non-potable water systems (Section 5.303.4).

Regional Water Quality Control Board

Operation of the SBWRP is subject to regulations set forth by the state Department of Health Services and SWRCB. NPDES permits are required for operators of MS4s, construction, projects, and industrial facilities who discharge to surface waters within the City.

Water Recycling Act

Enacted in 1991, the Water Recycling Act established water recycling as a priority in the state. The act encourages municipal wastewater treatment districts to implement recycling programs to reduce local water demands.

Local

City of Highland General Plan

The Public Facilities and Services Element describes the systems and sets policy for water, wastewater, drainage, and other infrastructure systems that also support proposed land uses. The applicable Public Facilities and Services Element goals and policies to this Project are listed below:

- Goal 4.3:** Provide a safe and effective sewer system that meets the needs of Highland residents, businesses and visitors.
- Policy 4.3.1:** Continue an ongoing dialogue with the East Valley Water District regarding funding and scheduling of any additional sewage facilities needed to serve the City.
- Policy 4.3.2:** Work with relevant agencies to determine the long-term supply of reclaimed wastewater and service to potential future uses within the City.
- Policy 4.3.3:** Encourage Grey Water Recycling, especially for residential use irrigation.

The Project will comply with the applicable General Plan goal and policies.

5.17.3.3 Solid Waste

Federal

With the exception of determining where disposal sites are located and operational standards, there are no federal policies that apply to solid waste for the Project.

State

California Green Building Standards (CALGreen) Code

On January 1, 2011, the CALGreen Code took effect. The CALGreen Code was adopted as part of the California Building Standards Code in the California Code of Regulations (Part 11 of Title 24). The purpose is to encourage sustainable construction practices that reduce negative impacts on the environment through planning and design, energy efficiency, water efficiency and conservation, material conservation, resource efficiency, and environmental quality. The CALGreen Code also includes design strategies to reduce vehicle miles traveled and greenhouse gas emissions. The CALGreen Code is applicable to the planning, design, operation, construction, use, and occupancy of every newly

construction building or structure, both residential and nonresidential, throughout the state. As with other uniform building codes, CALGreen is designed to provide certainty and uniformity throughout the state while ensuring that the efficient and non-wasteful consumption of finite resources is carried out through design features.

Specifically regarding solid waste, the following design standards are enumerated in the CALGreen Code to which this Project is required to comply:

- Work with local agencies to develop alternative waste reduction methods given that diversion or recycle facilities do not exist or are not located reasonably close to the jobsite. (Section 4.408.1);
- Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency (Section 4.408.2);
- Establish a construction waste management plan or meet local ordinance, whichever is more stringent (Section 5.408.1);
- Submit plan per this section to enforcement authority (Section 5.408.2);
- Provide documentation of the waste management plan that meets the requirements listed in Section 5.408.2 Items 1 thru 4 and the plan is accessible to the enforcement authority (Section 5.408.2.1);
- Recycle and/or salvage for reuse a minimum of 50 percent of nonhazardous construction and demolition debris or meet local ordinance, whichever is more stringent (Section 5.408.3);
- A copy of the completed waste management report shall be provided (Section A5.408.3.1.1);
- 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled (Section 5.408.4); and
- Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (Section 5.410.1).

Integrated Waste Management Act

Solid waste regulation in the state is governed by the Integrated Waste Management Act of 1989, which is commonly known as Assembly Bill (AB) 939.² AB 939, codified into the state Public Resources Code, emphasizes a reduction of waste disposed in state landfills. To achieve a reduction of waste in landfills, AB 939 requires all city and county plans to include a waste diversion schedule with the goals to divert 25 percent of solid waste from landfills by 1995 and divert 50 percent of solid waste from landfills by the year 2000. To achieve these goals, AB 939 emphasizes that cities and counties reduce the production, recycle, and reuse solid waste.

² AB 939 (Sher), Chapter 1095, 1989. Available at <http://www.calrecycle.ca.gov/Laws/Legislation/CalHist/1985to1989.htm>

Mandatory Commercial Recycling Measure

This measure incorporates the aim of AB 939 and increases the solid waste diversion rate to 75 percent by 2020. Approximately 60 percent of landfill waste is generated by the commercial sector, and as a result the state passed AB 341,³ which expands mandatory recycling to multi-family residential uses of five dwelling units or more, and commercial or public entities that generate more than four cubic yards of commercial solid waste per week, effective July 1, 2012. Requiring commercial recycling will help keep recyclable materials out of landfills, conserve resources, extend the life of the landfill, and will reduce greenhouse gas emissions by diverting waste from landfills. Reducing waste through recycling will also help reduce overall disposal costs, thus providing an economic benefit.

Local

City of Highland General Plan

The Public Facilities and Services Element describes the systems and sets policy for water, wastewater, drainage, and other infrastructure systems that also support proposed land uses. The applicable Public Facilities and Services Element goals and policies to this Project are listed below:

- Goal 4.5:** Minimize, recycle and dispose of solid waste in an efficient and environmentally sound manner.
- Policy 4.5.3:** Reduce the volumes of solid waste material sent to landfills by continuing source reduction, recycling, and composting programs in compliance with State law and encouraging the participation of all residents and businesses in these programs.
- Goal 5.18:** Continue to improve Highland’s solid waste management and recycling efforts.
- Policy 5.18.1:** Continue to provide services to resident and businesses that facilitate community cleanup, curbside collections and diversion of oil and other hazardous waste materials.
- Policy 5.18.3:** Maintain a comprehensive public education program, coordinated, in part, through the Environmental Learning Center, to stimulate recycling, reuse and waste reduction by its resident and businesses.
- Policy 5.18.4:** Continue to implement the policies and programs identified in the City’s SRR (Source Reduction and Recycling Element) and HHW (Household Hazardous Waste Element), and develop measures to evaluate their effectiveness.

The Project will comply with the applicable General Plan goals and policies.

5.17.3.4 Other Utilities (Transmission Lines, Telecommunications, Cable, and Natural Gas)

Federal

There are no federal policies that apply to the Project in this regard.

³ AB 341 (Chesbro), Chapter 476, 2011. Available at http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0301-0350/ab_341_bill_20111006_chaptered.pdf

State

Public Utilities Commission

The state PUC is responsible for regulating the electric, natural gas and telecommunication industries excepting cable television. The continued provision of energy and other utilities in the City as well as the conservation of energy relies on coordination between private utility companies and the federal, state, and local governments. This DEIR provides a project-level associated with the relocation of existing electrical transmission and distribution lines to satisfy the CEQA requirements of PUC General order 131-D. General Order 131-D, which was adopted June 8, 1984 and modified August 11, 1995, includes rules relating to the planning and construction of electric generation, transmission/power/distribution line facilities and substation located in California.

Protection of Underground Infrastructure

The state Government Code Section 4216-4216.9 requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for Southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of a project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of a project's activities.

Local

City of Highland General Plan

- Policy 4.1.4:** Continue to ensure that public water, sewer, drainage and other facilities needed for a project phase are constructed prior to or concurrent with initial development within that phase, unless otherwise approved by the City.
- Policy 4.1.7:** Continue to coordinate with public service and utility companies to assure the long-term provision of services including water, wastewater, solid waste, electricity, natural gas and other private utilities (e.g., cable, Internet, telephone) for City residents.
- Policy 4.1.17:** Continue to require that all new development pay the applicable Development Impact Fees established by the City Council.
- Goal 4.6:** Coordinate with private utility companies to ensure the adequate provision of electricity, natural gas and telecommunication infrastructure to existing and new development.
- Policy 4.6.1:** Continue to coordinate with the local gas and electric companies on the location and timing of additional energy facilities needed within the City.
- Policy 4.6.2:** Coordinate with private utilities to provide Highland residents, schools and businesses with an efficient telecommunications infrastructure, including telephone, cable and high-speed services, such as high-speed Internet.

The Project will comply with the applicable General Plan goals and policies.

5.17.4 Project Design Features

The Project's design features include development standards specific to utilities and service systems that will be implemented as the Project is realized to build-out. In addition, all utility lines will be placed underground, excluding electrical lines greater than 34.5 kilovolts (kV). Moreover, the Project also proposes phasing its development, which affects impacts on utilities and service systems as well. The Project's build-out will be realized in phases to facilitate development of the Specific Plan area while assuring the provision of infrastructure necessary to support the planned development. Development is assumed to occur in a number of phases over time. The phased development of the Specific Plan area will commence in a manner designed to address the following objectives:

- Orderly build-out of the community based upon market and economic conditions.
- Implementation of financing mechanisms without creating a financial or administrative burden on the City.
- Provision of adequate infrastructure and public facilities concurrent with development of each phase.
- Protection of public health, safety and welfare.

The exact timing, location, and extent of individual phases are largely dependent on the private decisions of developers and landowners who are, in turn, influenced by market conditions. Phasing will also likely be influenced by relative capital costs associated with extending infrastructure and services to different phases are anticipated to generally occur in a west to east pattern. It is logical to assume that initial and subsequent phasing will key off of extensions of existing infrastructure located within or near the Specific Plan area. Conceptual phasing of the Project was previously shown on **Figure 3-13 – Conceptual Phasing Map**.

Moreover, the Project will include design features and standards regarding the proposed potable water system, recycled (non-potable) water system, wastewater system, and drainage system, which are enumerated in the following.

Potable water system development standards (RBF(a), p. 11):

- All water lines shall be designed per EVWD requirements, and installed underground in accordance with the requirements and specifications of the California Department of Public Health, and inspected per EVWD standards.
- The location of facilities shall conform to EVWD and California Department of Public Health standards.
- Water conservation measures will be incorporated into all development within the Specific Plan area in accordance with SBVMWD and EVWD water conservation plan. Such measures include installation of water savings devices and systems for distributing non-potable water for irrigation where possible.
- Any design of off-site facilities shall be coordinated with the affected property owners and EVWD.

- The design of all water facilities shall provide fire protection to the satisfaction of the City of Highland.
- Interfering portions of the Redlands Aqueduct will be relocated in a manner and location agreeable to Bear Valley Mutual Water Company.
- Interfering portions of the Bear Valley Highline will be relocated in a manner and location agreeable to Bear Valley Mutual Water Company.
- Portions of the Tres Lagos well, waterline, and reservoir may be removed, relocated, or an alternate source of water will be made available in a manner and location agreeable to owners of the Tres Lagos Mutual Water Company.

Recycled (non-potable) water system development standards (HSP, p. 5-2):

- All non-potable water lines shall be designed per EVWD requirements, installed underground in accordance with the requirements and specifications of the California Department of Public Health, and inspected per EVWD standards.
- The location of facilities shall conform to EVWD and California Department of Public Health standards.
- Non-potable water facilities shall be constructed per EVWD standards for supplying non-potable water to eligible irrigated lands.
- Water conservation measures will be incorporated into all development within the Specific Plan area to include water saving devices and systems including the use of non-potable water for irrigation where possible.
- Any design of off-site facilities shall be coordinated with the affected property owners and EVWD.

Wastewater systems development standards (RBF(b), pp. 2-3):

- All sewer lines shall be designed per EVWD requirements and installed in accordance with the requirements and specifications of the California Department of Public Health.
- The location of facilities shall conform to EVWD and California Department of Public Health standards.
- A "Report of Waste Discharge" shall be submitted to and approved by the Regional Water Quality Control Board prior to recordation of the first tentative tract map (TTM) (except a TTM for financing purposes) for the Harmony Specific Plan.
- A Waste Discharge Permit and/or NPDES Permit shall be issued to EVWD by the appropriate authorities for the proposed sewage treatment plant prior to issuance of any grading permit for the Harmony Specific Plan.

Drainage system development standards (HSP, p. 5-3):

- Drainage and flood control facilities and improvements shall be provided in accordance with City requirements and the Conceptual Drainage Plan.
- Storm drain facilities shall ensure the acceptance and disposal of 100-year storm runoff without damage to streets or adjacent property.
- Prior to approval of the first TTM (except TTM for financing purposes) a detailed hydrology study and hydraulic calculations shall be submitted to and approved by the City of Highland. The study and calculations shall define rates of storm water runoff for pre- and post development conditions, identify the size and location of proposed improvements and demonstrate compliance with the latest San Bernardino County MS4 permit.
- Prior to issuance of a grading permit containing lots which lie within Zone A (100-year flood plain) of the most current FIRM documents, the applicant shall provide evidence to the City of Highland that a Conditional Letter of Map Revision (CLOMR) has been received from FEMA stating that the completion of proposed improvements will remove the subject area from the flood plain.
- Prior to issuance of a building permit for residential, commercial, and other habitable structures for any area previously identified in Zone A of the FIRM documents, the applicant shall provide evidence that a Letter of Map Revision (LOMR) has been issued by FEMA for the subject area.

5.17.5 Environmental Impacts before Mitigation

Threshold: *Would the proposed Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

The City operates under the Santa Ana RWQCB, and currently meets all Santa Ana RWQCB wastewater treatment requirements. The Project proposes development of residential, neighborhood commercial, parks and recreational facilities, and community public facilities with approximately 50 percent of the Specific Plan area is reserved for parks, recreation, and open space. As such, the Project will not discharge pollutants such as industrial sludge, noxious gases, medical wastes, or radioactive materials.

To ensure that the Project will not exceed wastewater treatment requirements, the Project will comply with Highland Municipal Code Chapter 13.04, which regulates wastewater discharges and the requirements established by the Santa Ana RWQCB.

Additionally, the Project will be required to follow all federal and state regulations pertaining to wastewater discharge. With adherence to these requirements and those established by the Santa Ana RWQCB, the Project will result in **no impacts**.

Threshold: *Would the proposed Project 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?*

Proposed Water System

The Project’s total water demand is estimated at 3,605 AFY, of which approximately 37 percent is proposed for irrigating public open space and other non-residential uses (RBF(a), p. 1). An evaluation of alternative neighborhood commercial uses determined that the most conservative demand estimate (highest) excluded the optional Neighborhood Commercial overlay. The water demands are estimated based on unit usage communicated from EVWD. The EVWD 2008 Water System Master Plan estimated future demands based on statistical analysis of existing EVWD consumption records. This provided a determination of Estimated Consumption Units, which combined the uses of all land use categories for projecting future demands. Because specific land uses are proposed, the water usage factors used for the Project utilized the specific land use factors based on consultation with EVWD. (RBF(a), p. 1) **Table 5.17-I** calculates the indoor and outdoor demands for the Project.

Table 5.17-I – Estimated Water Demand

Land Use	Gross Acres	Units	GPD/Ac	Total Demand (GPD)	CAP ^a	GPD/C AP	Water Demand (GPD)	
							Indoor	Outdoor
Residential								
0-2 du/ac	84.4	81	2,060	173,864	288	90	25,880	147,985
2.1 - 6.0 du/ac	382.1	1,630	2,921	1,116,114	5,787	90	520,785	595,329
6.1 - 12.0 du/ac	146.4	1,188	3,498	512,107	4,217	90	379,566	132,541
12.1 - 20.0 du/ac	34.4	518	4,615	158,756	1,611	90	144,988	-
20.1 - 30.0 du/ac	10.7	215	4,615	49,381	669	90	60,179	-
Subtotal Residential	658	3,632	-	-	12,571	-	1,131,397	889,623
Commercial	5.7	-	2,413	13,754	-	-	11,003	2,751
Parks/Rec/ Community Greenway	226.8	-	3,400	771,120	-	-	-	771,120
Manufacture d Slope	72	-	3,400	244,800	-	-	-	244,800
School (classroom)	4.15	-	1,450	6,018	-	-	6,018	-
School (irrigation)	4.15	-	2,500	10,375	-	-	-	10,375
Open Space	535.2	-	-	-	-	-	-	-

Land Use	Gross Acres	Units	GPD/Ac	Total Demand (GPD)	CAP ^a	GPD/C AP	Water Demand (GPD)	
							Indoor	Outdoor
Roads/Public Facilities	151.4	-	1,000	151,400	-	-	-	151,400
TOTAL	1,657.4			3,218,486 (3,605 AFY)			1,148,418 (1,286 AFY)	2,070,068 (2,319 AFY)

Notes:

GPD = gallons per day; GPD/Ac = gallons per day per acre; CAP = capacity; du/ac = dwelling units per acre

Source: RBF (a), Table 1, p. 2.

^a Based on 3.45 persons per dwelling unit for all DU; therefore assumes 3.11 persons/DU for residential densities greater than 10 DU/Ac, and 3.55 persons/DU for densities less than 10 DU/Ac.

The irrigation component of the Harmony water demand is delineated to aid in evaluating water supply alternatives. In addition, the analysis is based on irrigation during off-peak hours in order to preclude coincident peaking of irrigation and domestic demands. Ensuring that irrigation demands do not add to the normal peaking can minimize pipe sizes and enhance water quality. It should be noted that major slopes within selected planning areas have been categorized as non-residential outdoor (Manufactured Open Space) that would be irrigated during off-peak hours. **Table 5.17-J – Water Demand Summary**, describes the potable water and irrigation water demands.

Table 5.17-J – Water Demand Summary

System	Average Water Demand	
Potable Water	2.04 MGD	2,283 AFY
Irrigation Water	1.18 MGD	1,322 AFY
Total	3.22 MGD	3,605 AFY

Source: RBF(a), p. 2.

A cursory water system computer model analysis was performed and indicates that the Project will require a backbone delivery system consisting of pipelines 24-, 20-, and 16-inches in diameter for the various water pressure zones. Based on basic standards for public water systems, the minimum pipeline size for in-tract systems is generally 8-inch diameter pipeline. Therefore, the water system for the Harmony Specific Plan would include pipelines ranging from 8-inch to 24-inch. (See **Figure 5.17-3 – Water Master Plan**) A separate distribution system for serving irrigation demands, as would result under Water Supply Alternative 2 described below, could reduce pipe sizes and allow direct use of non-potable water for irrigation uses.(RBF(a), p. 9)

EVWD completed their participation in SBVMWD’s 2010 UWMP and is currently preparing a new District-wide water master plan. EVWD indicates that the new master plan will evaluate developing EVWD’s rights to local and imported water sources at the east end of their service area. These sources include Santa Ana River surface water rights (via the North Fork Mutual Water Company) and their imported water rights to SWP water via their partnership with SBVMWD. Two other sources may include expanding their groundwater production – developing a new conjunctive use groundwater basin and developing a separate wellfield specifically for the Harmony Specific Plan. (RBF(a), p. 3)

Initial indications are that EVWD will elect to develop its currently unused water resources and increase redundancy and reliability for its current operation. Future improvements implemented by EVWD may include a SBVMWD turn-out and a water treatment plant (WTP) in the vicinity of the Project site. These improvements are conceptual and no location has been determined. The new water system for the Project is proposed to interconnect with EVWD's existing facilities at the east end. The interconnection will benefit both Harmony and existing EVWD consumers by taking advantage of additional local water sources and its availability at a higher hydraulic gradient. (RBF(a), p. 3)

The pipeline connection from the Project site to EVWD's existing system requires crossing the Santa Ana River. It is currently proposed that the replacement of Greenspot Bridge provide this crossing capacity. The current design of the new bridge allows for up to five 12-inch diameter water pipelines. (RBF(a), p. 3) **Figure 5.17-1** shows EVWD's existing water supply wells and existing treatment facilities as well as the conceptual location of the WTP. **Figure 5.17-2** shows the Santa Ana River and the North Fork Pipeline, and the SBVMWD raw imported water pipeline. Also shown in **Figure 5.17-2** are the Redlands Aqueduct and the Bear Valley Highline, which also traverse through the Project site.

Recycled water could be a feasible source of water for irrigation if a wastewater reclamation facility were constructed within the Project site. The wastewater supply flows would be solely from future development within Harmony. (RBF(a), p. 6)

Three water supply alternatives have been developed based on recent and on-going discussions between the owner/developer and EVWD (RBF(a), p. 6). However, EVWD has indicated that the third alternative is no longer recommended for the Project and thus is not evaluated further in the DEIR. None of these scenarios contemplate utilizing water from the Tres Lagos Mutual Water Company.

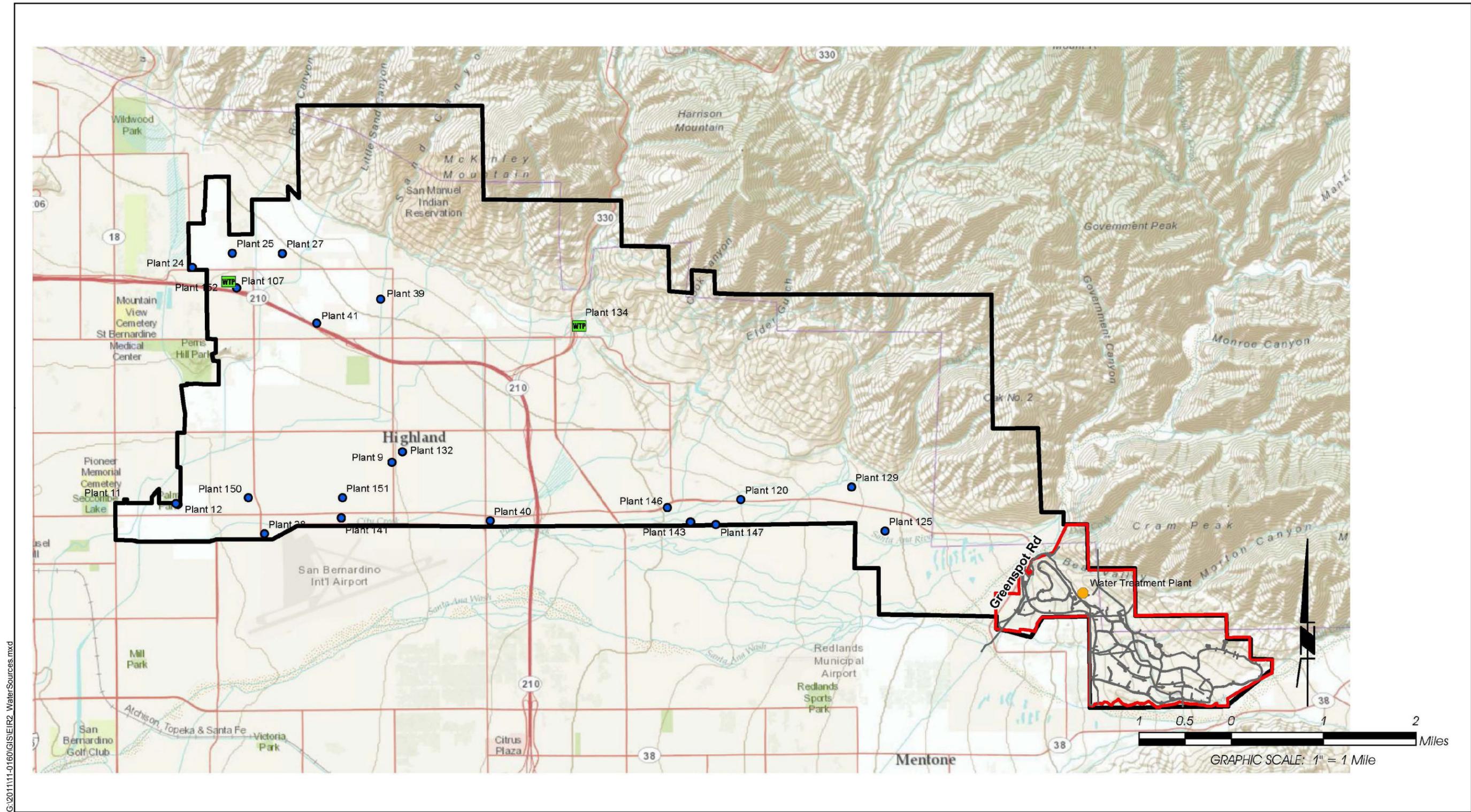
Water Supply Alternative 1 – Total Water Service from Local Pipelines.

This alternative assumes water service provided by EVWD incorporates local surface water or imported raw water from existing local pipelines traversing through the Project site. This involves utilizing the raw local or imported water holdings of the North Fork Mutual Water Company and SBVMWD. These existing local water supply sources would provide primary water service to Harmony. (See **Figure 5.17-2**) The only off-site facility required for this alternative is a transmission pipeline (approximately 10,000 linear feet) in Greenspot Road connecting the Project to existing EVWD facilities. (See **Figure 5.17-2**) The precise mix of water is unknown at this time and would be at EVWD's discretion.

Water Supply Alternative 2 – Water Service from Local Pipelines and Recycled Water for Irrigation.

This alternative would develop water supply from the local systems in the same way as Alternative 1, but also envisions a new wastewater reclamation facility (also called wastewater treatment plant or WWTP) on the Project site. Alternative 2 would also require a transmission pipeline in Greenspot Road connecting the Project to existing EVWD facilities. (See **Figure 5.17-2**) Recycled water will be produced by the on-site WWTP and supplied to the Project to meet Harmony's estimated irrigation demands that total approximately 37 percent of the Project's total water needs. Use of a separate "non-potable water" source would require a dual water system for Harmony. The Recycled Water Master Plan is shown in **Figure 5.17-4**, below.

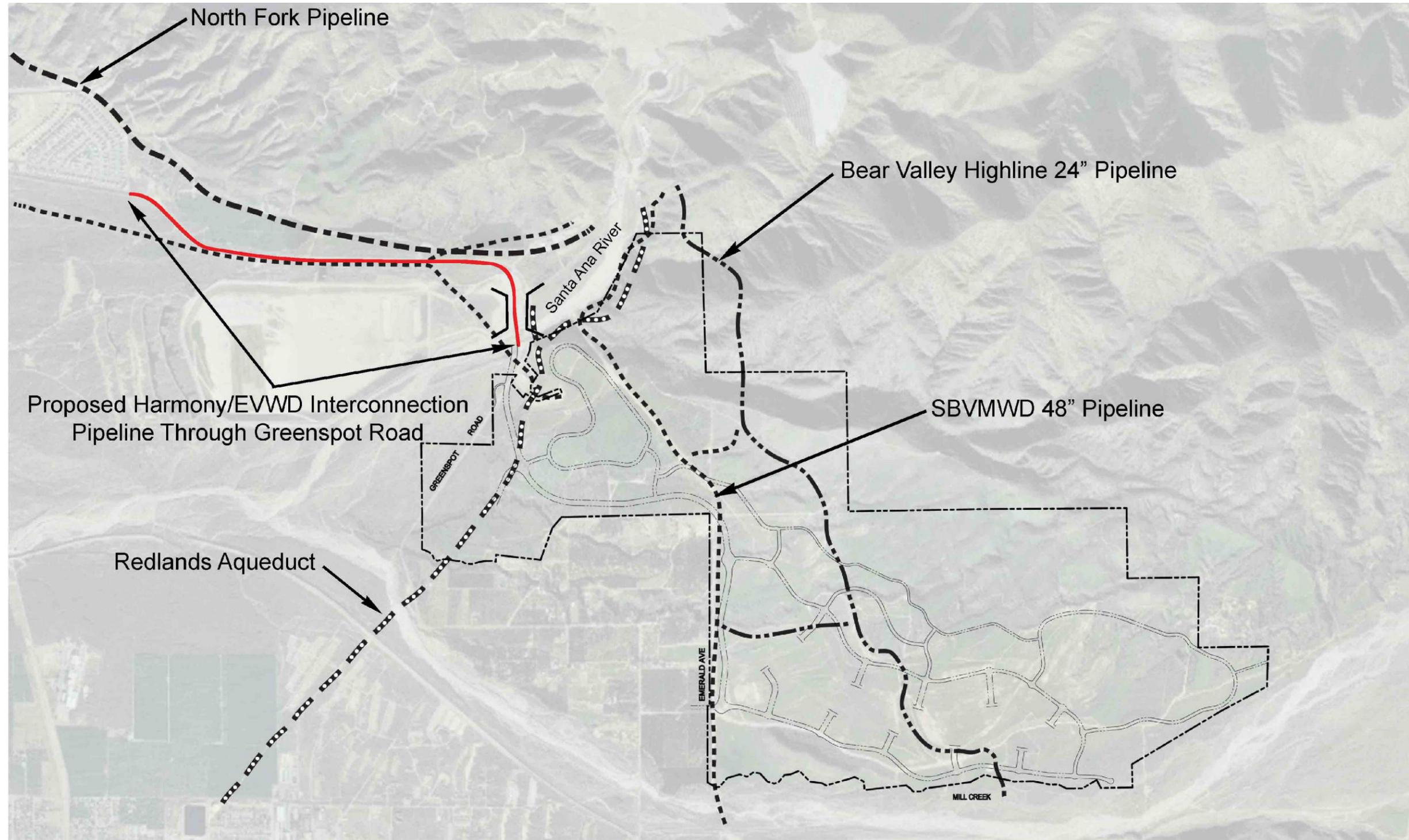
In summary, the Project may include the construction of a new water treatment facility on the Project site. If constructed, this facility will be designed per EVWD requirements and thus the facility in and of itself will not cause significant environmental effects. Although it has not been determined whether the potential water treatment plant will be located on the Project site, any impacts with regards to the potential water treatment plant's possible location within the Project site have been evaluated in Section 5 of this DEIR. If a new water treatment plant is not constructed within the Project site, existing and planned EVWD treatment facilities have enough capacity to treat Harmony's water demand because water demand from the Project site was incorporated in both EVWD's 2008 Water Master Plan (because it incorporated the Sunrise Ranch area that generated a higher water demand than the Project) and the new District-wide 2014 Water System Master Plan that was approved in February 2014. The only new-off-site facility required to connect the Project to EVWD's water supply is the interconnection to existing EVWD facilities in Greenspot Road. This pipeline will be constructed within previously disturbed areas of Greenspot Road and crossing the Santa Ana River via the new Greenspot Road Bridge, which has capacity for the proposed pipeline. Thus, **the Project's construction or expansion of water treatment facilities will not result in significant impacts.** No mitigation is required.



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Source: RBF, 2013.

Figure 5.17-1 – Water Supply Sources
Harmony Specific Plan Draft EIR

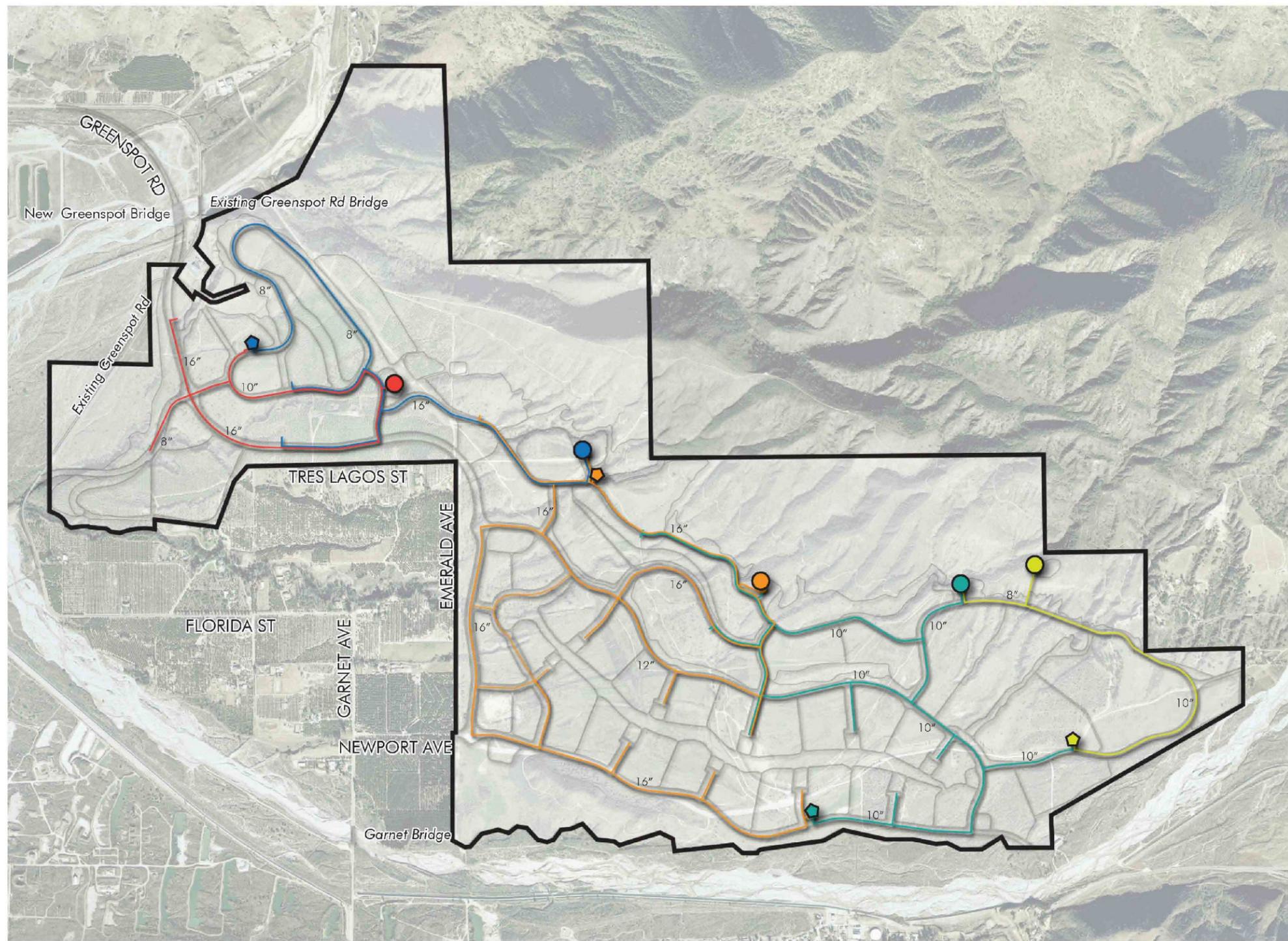


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Source: RBF, 2013

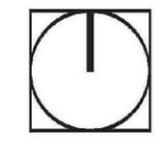
Figure 5.17-2 – Regional Water Pipelines
Harmony Specific Plan Draft EIR

G:\2011\11-0160\GIS\EIR2_RecycledWaterMasterPlan.mxd



LEGEND

- Service 1820 - 1980
- Reservoir
- Service 1980 - 2145
- Reservoir
- ⬠ PRS
- Service 2145 - 2305
- Reservoir
- ⬠ PRS
- Service 2305 - 2470
- Reservoir
- ⬠ PRS
- Service 2470 - 2630
- Reservoir
- ⬠ PRS



Source: Harmony Specific Plan, Exhibit 5-4,
Recycled Water Master Plan

Figure 5.17-4 – Recycled Water Master Plan
Harmony Specific Plan Draft EIR

Proposed Wastewater System

The Project’s wastewater flows are estimated based on criteria established in EVWD’s Wastewater Collection System Master Plan (WCSMP), dated October 18, 2013. (RBF(b), p. 1) **Table 5.17-K** summarizes the wastewater flow estimate for the Project.

Table 5.17-K – Estimated Wastewater Generation

Land Use	Gross Acres	Units	CAP ^a	GPD/CAP	Average Wastewater Generation (gpd)
Residential					
1-2 du/ac	84.4	81	288	90	25,920
2.1 - 6.0 du/ac	382.1	1,630	5,787	90	520,830
6.1 - 12.0 du/ac	146.4	1,188	4,217	90	379,530
12.1 - 18.0 du/ac	34.4	518	1,611	90	144,990
20.0 - 30.0 du/ac	10.7	215	669	90	61,210
<i>Subtotal Residential</i>	<i>658.0</i>	<i>3,632</i>	<i>12,572</i>	-	<i>1,131,480</i>
Commercial	5.7	-	-	-	11,003
Parks/Ag/Rec	226.8	-	-	-	-
Manufactured Slope	72.0	-	-	-	-
School (classroom)	4.15	-	-	-	6,018
School (irrigation)	4.15	-	-	-	-
Open Space	535.2	-	-	-	-
Roads/Public Facilities	151.4	-	-	-	-
TOTAL	1,657				1,148,501

Notes:

GPD = gallons per day; CAP = capacity; du/ac = dwelling units per acre

Source: RBF(b), Table 1, p. 2.

^a Based on average 3.45 persons/du for all du densities; therefore assumes 3.11 persons/du for densities greater than 10 du/ac, and 3.55 pers/du for densities less than 10 du/ac.

According to EVWD standards, the Project will install collection sewer mains ranging in size from 8 inches to 15 inches in diameter (RBF(b), p. 2). The backbone collection trunks will consist of 15-inch and 12-inch diameter pipelines while the in-tract collection system will require 10-inch and 8- inch diameter pipelines. **Figure 5.17-5 –Sewer Master Plan** shows the internal wastewater collection plan for the Project.

As previously stated, there are no existing sewer collection facilities in the immediate vicinity of the Harmony Specific Plan. The nearest existing sewer collection facility (aka “Greenspot East”) is located to the west in Greenspot Road approximately 10,000 feet from the Project site. From this point,

wastewater is conveyed to the west in existing facilities for approximately 11 miles to the Margaret H. Chandler WRP operated by SBMWD. (RBF(b), p. 1)

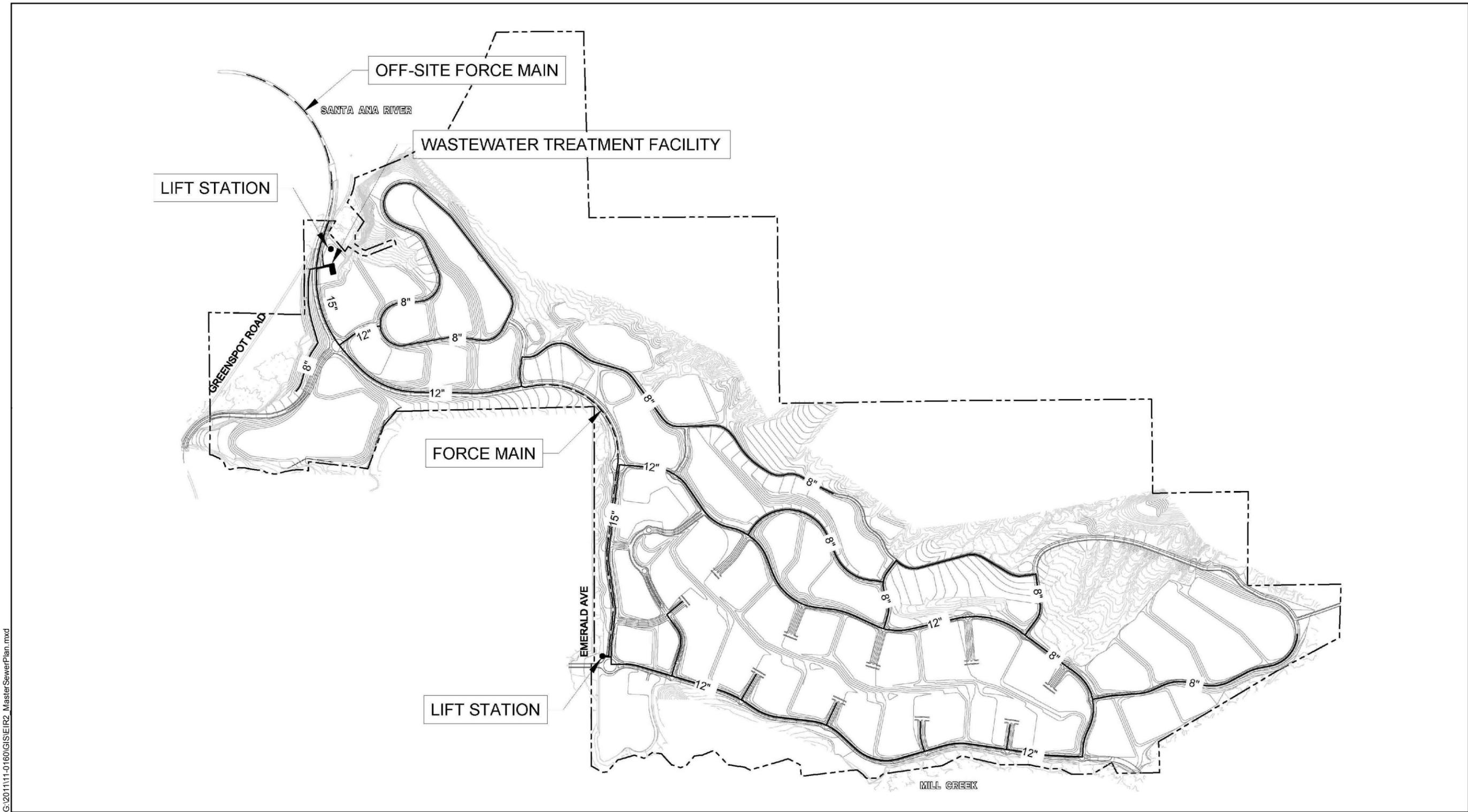
To treat the Project's wastewater, an on-site wastewater treatment plant is proposed in Planning Area A. **Figure 5.17-5** also indicates the potential for an Off-site Force Main that would be located in Greenspot Road and would connect to the existing Greenspot East sewer line. This force main provides two functions. During the initial building phase there will be insufficient sewage generated to operate a wastewater treatment plant requiring the use of "make-up water". Alternatively, the proposed lift station and force main will send the initial sewage flows to the Greenspot East sewer line. Once the wastewater treatment plant is fully operational the lift station and force main will serve as an emergency discharge line. (RBF(b), p. 2)

The on-site wastewater treatment facility would have capacity solely to treat wastewater from the Project site, and operated by either EVWD or by private contractor hired by EVWD.

The on-site facility could be equipped with solids handling systems eliminating the need to utilize any sewer capacity in existing EVWD facilities. Recycled water would be produced and used within the Project site. However, because flows to the new facility are derived only from development within Harmony, recycled water would not be immediately available until sufficient flows were developed making it feasible to produce recycled water. Additionally, on-site wet weather storage is limited; therefore, a Regional Water Quality Control Board Discharge Permit would be required. (RBF(b), p. 5)

The on-site wastewater treatment facility would discharge into the Santa Ana River. Waste discharge requirements will be established by the Santa Ana Regional Water Quality Control Board (Regional Board) as part of the NPDES permit process for the on-site treatment facility. The conditions of the waste discharge requirements will be consistent with the water quality objectives for downstream receiving waters as set forth in the Basin Plan. The Regional Board will identify waste discharge requirements for both dry and wet weather conditions.

In summary, the Project includes the construction of a new wastewater treatment facility on the Project site. The facility will require both a secondary (biological) treatment process and a tertiary (filtration and disinfection) treatment process. The treatment process will also include a disinfection system and an odor control system (RBF(b), p. 10). This facility will be designed per EVWD requirements and thus the facility in and of itself will not cause significant environmental effects. The new wastewater treatment facility will adhere to the Regional Board waste discharge requirements for both dry and wet weather conditions. Any impacts with regards to the potential wastewater treatment plant's location within the Project site have been evaluated in Section 5 of this DEIR. The only new-off-site facility required for the Project's wastewater system is the interconnection to existing EVWD facilities in Greenspot Road (the Greenspot East sewer line). This off-site force main will be constructed within previously disturbed areas of Greenspot Road and crossing the Santa Ana River via the new Greenspot Road Bridge, which has capacity for the proposed pipeline. Thus, **the Project's construction or expansion of wastewater treatment facilities will not result in significant impacts.** No mitigation is required.



G:\2011\11-0160\GIS\EIR2_MasterSewerPlan.mxd

Source: RBF, 2014.

Figure 5.17-5 – Master Sewer Plan
Harmony Specific Plan Draft EIR

Threshold: *Would the proposed Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

The Project proposes a comprehensive on-site storm water drainage system intended to collect, convey and deliver storm flows in accordance with City requirements. (See **Figure 5.9-4 – Drainage Master Plan.**) The primary goal of the storm water management system is to prevent flooding and protect property by providing safe, effective site drainage. As discussed previously, the Specific Plan area contains eight watersheds or tributary areas, see **Figure 5.9-2 – Tributary Areas** in Section 5.9 – Hydrology and Water Quality, which are impacted by the Specific Plan ranging in size from 26 acres to 482 acres. The Specific Plan area generally receives storm water runoff from the foothills lying to the north and northeast. The runoff is conveyed through the Project site and ultimately reaches the Santa Ana River to the west or Mill Creek on the south.

The construction-related potential environmental impacts from installation of these facilities are accounted for in the analysis of impacts throughout this DEIR. With implementation of Project design features, compliance with applicable regulatory requirements, and mitigation measures related to biological and cultural resources, impacts resulting from the construction of these on-site storm drain facilities will be **less than significant**.

Threshold: *Would the proposed Project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

A *Water Supply Assessment (WSA)* was prepared for the proposed Project by EVWD, pursuant to SB 610 and included in Appendix I.3 of this DEIR. The projected water demand associated with the proposed Project (**Table 5.17-I**, above) was included and accounted for as part of the 2010 RUWMP. The 2010 RUWMP includes an identification and demonstration of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the Project, and a description of the quantities of water received in prior years under the existing water supply entitlements, water rights, or water service contracts. It also includes groundwater supply information and a description of the groundwater basin, historical and projected groundwater production, and sufficiency of the groundwater basin from which the Project will be supplied. (WSA, p. 1) -

The 2010 RUWMP anticipated service area growth for EVWD that is summarized in **Table 5.17-L – Population Projections for EVWD Service Area**, which is based on population projections from the Southern California Association of Governments. (WSA, p. 9)

Table 5.17-L – Population Projections for EVWD Service Area

	2010	2015	2020	2025	2030	2035
Service Area Population ^a	63,055	66,157	80,212	106,218	121,666	137,369

Source: WSA, Table 3, p. 9.

^a Growth projection data source: Southern California Association of Governments.

The population projections also include the development potential of the Sunrise Ranch area starting in 2020. The Sunrise Ranch area was estimated to have a much greater population than the proposed Project. The Project site is within the Sunrise Ranch area. Thus, the 2010 RUWMP accounted for the development of the Project and provides a conservative analysis because the Project's estimated population is much lower than that of the Sunrise Ranch area. (WSA, pp. 9, 19)

Groundwater Supply

The Project will rely primarily on current groundwater production from the SBBA. The SBBA was defined by the Western Judgment adjudication in 1969. The SBBA has a surface area of approximately 140.6 square miles and lies between the San Andreas and San Jacinto faults. The SBBA encompasses the Bunker Hill sub-basin (8-02.06) as defined by California Department of Water Resources (DWR) and also includes a small portion of the Yucaipa Basin (8-02.07) and Rialto-Colton Basin (8-02.04) also as defined by DWR. The SBBA also includes local and imported surface water supplies. (WSA, p. 14)

The Western Judgment established the natural safe yield of the SBBA to be a total of 232,100 AFY for both surface water diversions and groundwater extractions. Of this amount, SBVMWD agencies are allocated 167,238 AFY, and agencies in Riverside County are allocated the remaining 64,862 AFY (excluding any specific groundwater banking performed by Riverside county agencies). SBVMWD retail agencies are allowed to extract more than 167,238 AFY from the SBBA, but extractions over this amount require a like amount of import and recharge by SBVMWD. The Western-San Bernardino Watermaster provides an annual accounting of the total extractions as compared to the safe yield. In years when total extractions are less than the safe yield, a "credit" is given. In years when total extractions are greater than the safe yield, a "debit" is given. If the net result is a debit condition, the replenishment obligation is triggered. As of the accounting performed for the 2009 Annual Western-San Bernardino Watermaster Report, the District has 211,323 AF of credit accumulated in the SBBA. (WSA, p. 15)

EVWD currently draws the majority of its water supply from groundwater wells located within the SBBA. Based on average annual production during the Western Judgment base period (1959-1963), EVWD has established rights to extract 14,217 AFY from the SBBA. Based on information received from EVWD, this pumping capacity will be augmented upon annexation of wells currently owned by the Project (formerly Sunrise Ranch), Landmark Land Company, and Clinton Cogbill. These annexed wells may add 2,307 AFY to the existing rights, bringing the total base period production right to 16,524 AFY. (WSA, p. 15)

As EVWD will rely on these local groundwater sources, a detailed description and analysis of the amount and location of groundwater pumped by the public water system for the past five years (2005-2009) is reflected in **Table 5.17-A. Table 5.17-M – EVWD Projected Groundwater Pumping Rates, 2015-2035 (AFY)** shows the projected amount of groundwater to be pumped by EVWD.

Table 5.17-M – EVWD Projected Groundwater Pumping Rates, 2015-2035 (AFY)

	2015	2020	2025	2030	2035
Projected Groundwater Demand	19,486	21,012	24,850	28,742	32,692
<i>Percent of Total Water Supply</i>	85	85	85	85	85

Source: WSA, Table 9, p. 14.

^a Percent of total water supply based on projected water pumped to projected water demand.

These projected groundwater pumping rates from the 2010 RUWMP are based on no recycled water use and an estimated population for the area including the Project site development of 32,400 persons, which is based on the earlier Sunrise Ranch area proposal (WSA, p. 19). According to the 2010 RUWMP, no overdraft of the SBBA groundwater basin exists or is anticipated in the future as a result of new development.

Recycled Water Supply

EVWD provides sewage collection service to its customers. Wastewater treatment is provided by a regional wastewater treatment plant, located downstream and outside of EVWD’s service area. A Joint Powers Authority (JPA) was formed in 1957 between EVWD and the neighboring city of San Bernardino whereby the city of San Bernardino treats all sewage generated within the EVWD service area. Wastewater from the EVWD service area is treated to secondary levels at the San Bernardino Regional Wastewater Treatment Plant and to tertiary levels at the Rapid Infiltration/Extraction (RIX) Plant. An average day demand of approximately 7.3 million gallons per day (MGD) of sewage is collected by EVWD and treated at the regional plant. In 1995, the City of San Bernardino began operation of RIX to provide treatment of up to 41.0 MGD of secondary effluent from the existing plants of the City of San Bernardino and the City of Colton. The RIX plant is located approximately six miles southwesterly and downstream of EVWD’s southwesterly boundary. The JPA responsible for the RIX plant actively pursues markets for the tertiary water as a means of reducing the demand for local groundwater supply. EVWD is helping to finance the City of San Bernardino’s recycled water project and intends to take advantage of the enhanced SBBA groundwater storage which will result. The location of RIX makes providing recycled water to customers upstream of the plant (e.g., East Valley Water District) cost-prohibitive at this time. However, depending on how the City of San Bernardino’s recycled water infrastructure develops, it may become feasible for EVWD to serve recycled water to the western-most portions of its service area in the future. (WSA, pp. 22-23).

Other Water Supply Sources

Imported water available to EVWD is from the SWP purchased from SBVMWD. EVWD currently supplements its local supply with SWP deliveries from SBVMWD. In the past, SWP supply has made up a small amount of EVWD’s water supply. EVWD anticipates seeking regular SWP supplies to supplement Santa Ana River water to run Surface Water Treatment Plant 134. Plant 134 was designed to treat Santa Ana River and SWP water and was completed in 1996. Since its construction, the Plant has produced, on average, approximately 2,700 AFY. Plant 134 has a design capacity of 4 MGD, but production has been significantly lower (approximately 60 percent of design capacity) due to a number of issues related to

reduced winter demand and scheduled maintenance. EVWD plans to replace the existing filters and expand the Plant to 8.0 MGD by installing microfiltration treatment. The expansion will add capacity and enhance reliability and will result in an increased use of SWP water by EVWD. The estimated amount of imported water supply projected to be available to EVWD in a normal year is reflected in **Table 5.17-N – Wholesale Supplies, Existing and Planned Sources of Water (AF)**. (WSA, pp. 12-13)

Table 5.17-N – Wholesale Supplies, Existing and Planned Sources of Water (AF)

Wholesale Source	2015	2020	2025	2030	2035
Purchased from SBVMWD	8,960	8,960	8,960	8,960	8,960

Note: This table represents the supplies anticipated to be available to EVWD, not necessarily the amount of a given supply that will be utilized by EVWD

Source: WSA, Table 6, p. 13

During times of State-wide drought conditions, the availability of SWP water may be reduced. However, these conditions are normally known in advance, providing EVWD with the opportunity to plan for the reduced supply. During a drought period, it is SBVMWD’s priority to make direct deliveries to the water treatment plants operated by Redlands, WVWD, YVWD, SBMWD, and EVWD and to maintain lake levels at Big Bear Lake (Big Bear Lake also supplies the water treatment plants of Redlands and EVWD). (WSA, p. 13)

Because EVWD’s water treatment plant can use local surface water and imported water, during a single-dry year EVWD may elect to reduce its imported water take, thereby conserving imported water for use by other agencies. In this case, EVWD would utilize additional groundwater through groundwater well production from the SBBA. In a multiple-dry year SBVMWD expects between 44,858 AF and 45,910 AF of water to be available, thus fulfilling its obligation to provide direct deliveries to water treatment plants in a multiple-dry year, including the EVWD treatment plant. (WSA, p. 13)

Historical and Projected Water Supplies and Demands

EVWD utilizes a mix of groundwater, local surface water, and imported water. Groundwater has made up approximately 85 percent of EVWD’s supply in recent years. Surface water from the Santa Ana River has made up the next largest share of EVWD’s supply, and imported was a minor supply. (WSA, p. 12)

EVWD has current water rights of 4 MGD (4,480 AFY) of Santa Ana River water through stock ownership in the North Fork Mutual Water Company. EVWD is currently the major shareholder in the company and continues to pursue the purchase of additional stock. EVWD has the ability to expand to about 6.5 MGD (7,300 AFY) with the conversion of remaining agricultural properties and water shares of stock. This is expected to occur by 2015. (WSA, p. 20) **Table 5.17-O – Current and Planned Water Supplies and Projected Demand (AF)** shows EVWD’s current and planned water supplies as well as the projected average water demand based on the population growth projections shown on **Table 5.17-L**.

Table 5.17-O – Current and Planned Water Supplies and Projected Demand (AF)

Water Supply Source	2010	2015	2020	2025	2030	2035
Existing						
Imported	0	8,960	8,960	8,960	8,960	8,960
Groundwater	19,421	24,000	30,250	36,500	42,750	49,000
Local Surface Water	3,301	3,380	4,480	4,480	4,480	4,480
Total Existing Supplies	22,722	37,440	43,690	49,940	56,190	62,440
Planned						
Imported	0	0	0	0	0	0
Groundwater	0	2,307	2,307	2,307	2,307	2,307
Local Surface Water	0	2,820	2,820	2,820	2,820	2,820
Total Planned	0	5,127	5,127	5,127	5,127	5,127
Total Existing and Planning Supplies	22,722	42,567	48,817	55,067	61,317	67,567
<i>Total Projected Average Water Demand^a</i>	--	25,472	30,901	36,544	42,267	48,076
Remaining Surplus	--	17,095	17,916	18,523	19,050	19,491

Source: WSA, Table 12, p. 24.

^a Per 2010 RUWMP Tables 7-14, 7-15 and 7-16

EVWD is currently enhancing its ability to utilize its existing water supply sources through several projects that are in various phases of implementation, from planning to preliminary design to construction. Currently, EVWD is expanding Plant 134 from 4.0 to 8.0 MGD by removing the existing Roberts filters and installing membrane microfiltration. The expansion of this plant will add 2,700 GPM (4.0 MGD) of capacity and enhance plant reliability as the membrane microfiltration modules would be able to treat water that could not be treated before due to high turbidity levels. (WSA, p. 23)

As reported in the 2014 Water System Master Plan, EVWD recently completed the expansion of Plant 134 from 4.0 to 8.0 MGD (EVWD(b), p. 6-13) Also subsequent to the RUWMP, the EVWD has evaluated other options for greater reliability and would accelerate the construction of a water treatment plant near the Project site to treat water available from North Fork Water Company and/or raw SWP water from SBVMWD. (WSA, p. 23)

Moreover, EVWD’s projected supply and demand comparison in multiple hydrologic conditions over a 20-year period is shown on the following table. While the table does not account for recycled water, it

accounts for the effects of the future demand reduction as required by the Water Conservation Act of 2009 (SBx7-7). The hydrologic conditions include a “normal” year, which is a year in the historical sequence that best represents median runoff levels and patterns, a “single-dry” year, which is generally the lowest annual runoff for a water source on record, and “multiple-dry” years, which is generally the lowest annual runoff for three or more consecutive years. (WSA, pp. 25-27)

Table 5.17-P – Projected Supply and Demand in Multiple Hydrologic Scenarios

	2015	2020	2025	2030	2035
<i>Normal Year</i>					
Supply Totals (AFY)	40,260	46,510	52,750	59,010	65,260
Demand without Conservation (AF)	25,472	30,901	36,544	42,267	48,076
Conservation (AF)	2,547	6,180	7,309	8,453	9,615
Total Adjusted Demand	22,925	24,721	29,235	33,814	38,461
Difference (Supply Minus Demand) (AF)	17,335	21,789	23,525	25,196	26,799
Difference (as % of Supply)	43%	47%	45%	43%	41%
Difference (as % of Demand)	76%	88%	80%	75%	70%
<i>Single-Dry Year</i>					
Supply Totals (AFY)	29,825	36,075	42,325	48,575	54,825
Demand without Conservation (AF)	28,020	33,991	40,198	46,494	52,883
Conservation (AF)	2,802	6,798	8,040	9,299	10,577
Total Adjusted Demand	25,218	27,193	32,158	37,195	42,307
Difference (Supply Minus Demand) (AF)	4,607	8,882	10,167	11,380	12,518
Difference (as % of Supply)	15%	25%	24%	23%	23%
Difference (as % of Demand)	18%	33%	32%	31%	30%
<i>Multiple-Dry Years (First Dry Year)</i>					
Supply Totals (AFY)	37,632	43,882	50,132	56,382	62,632
Demand Totals (AF)	25,218	27,193	32,158	37,195	42,307
Difference (AF)	12,414	16,689	17,974	19,187	20,325
Difference (as % of Supply)	33%	38%	36%	34%	32%
Difference (as % of Demand)	49%	61%	56%	52%	48%
<i>Multiple-Dry Years (Second Dry Year)</i>					
Supply Totals (AFY)	37,997	44,247	50,497	56,747	62,997

	2015	2020	2025	2030	2035
Demand Totals (AF)	25,218	27,193	32,158	37,195	42,307
Difference (AF)	12,779	17,054	18,339	19,552	20,690
Difference (as % of Supply)	34%	39%	36%	34%	33%
Difference (as % of Demand)	51%	63%	57%	53%	49%
Multiple-Dry Years (Third Dry Year)					
Supply Totals (AFY)	34,785	41,035	47,285	53,535	59,785
Demand Totals (AF)	25,218	27,193	32,158	37,195	42,307
Difference (AF)	9,567	13,842	15,127	16,340	17,478
Difference (as % of Supply)	28%	34%	32%	31%	29%
Difference (as % of Demand)	38%	51%	47%	44%	41%

Notes:

Source: WSA, Table 13, p. 25; Table 14, p. 26; Table 15, p. 27.

Water Supply Reliability

The Project will rely primarily on current groundwater production from SBBA. SBBA is adjudicated on a safe-yield basis. EVWD has the opportunity to develop additional wells and over-extract groundwater under specified conditions contained in the stipulated judgment. The wells in general have provided a stable source of water supply. Past records show that EVWD has not removed any well from its supply source during drought conditions, although, some wells had to be lowered to continue extraction of groundwater. During 1990, the driest year on record for Southern California, EVWD was impacted only by lowered groundwater levels and increased pumping costs. EVWD maintained full capability to use all wells within its system. Extensive modeling has been used to examine groundwater recharge, groundwater pumping, basin storage, groundwater flow, and groundwater plume location and migration. Based on these studies it is anticipated that groundwater pumping by EVWD and other SBBA users in San Bernardino Valley service area will not be reduced or curtailed during a single-dry or multi-dry year. (WSA, p. 19)

These projected groundwater pumping rates are identified in the 2010 RUWMP and based on no recycled water use and an estimated population for the area including the Project site development of 32,400 persons, which is based on the earlier Sunrise Ranch area proposal (WSA, p. 19). And according to the 2010 RUWMP, no overdraft of the SBBA groundwater basin exists or is anticipated in the future as a result of new development.

Water Shortage Contingency

EVWD adopted a water shortage contingency plan that identifies the level of shortage, prohibitions and associated consumption reduction, penalties and charges. The Water Shortage Contingency Plan was updated in Ordinance 375 (2010), which defines stages of action depending on water supply conditions, as follows: Stage 1 is activated under “normal conditions”; Stage 2 is activated under “threatened water

supply conditions”; and Stage 3 is activated under “water shortage emergencies.” (2010 RUWMP, p. 7-36)

Stage 1 encourages all water users to prevent waste or unreasonable use of water. Stage 2 is activated in the event EVWD’s ability to provide water to its customers is threatened, in which case the Board of Directors may, after a public hearing, adopt resolution declaring a water shortage condition. Stage 2 would mandate, among other things, that landscape irrigators minimize runoff, and may result in irrigation time restrictions. Stage 3 would result in mandatory conservation measures, and the General Manager is empowered to quickly declare a water shortage emergency. Stage 3 enforces many water use restrictions/curtailments such as prohibiting large common area and golf course irrigation, new construction meters, gutter flooding, non-recirculating fountains, customer plumbing leaks, hosing of hard surfaces, and automatic water serving in restaurants. The ordinance is instrumental in actively achieving five of the 2010 RUWMP’s Demand Management Measures. (2010 RUWMP, pp. 7-36, 7-37)

At the regional planning level, in the event of interruption or significant reduction of water supply through drought, natural disaster such as an earthquake, a regional power outage, or a toxic spill that prevents delivery of potable-quality water, the San Bernardino Valley RUWMP agencies also participate in the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP). The IRWMP includes strategies and projects to overcome water shortages during emergencies. In addition, all the RUWMP agencies participate in the Emergency Response Network of the Inland Empire (ERNIE) which is a water/wastewater mutual aid network within San Bernardino and Riverside counties. Each of the retail water agencies has identified voluntary and mandatory conservation measures that will go into effect during different stages of water shortage. (2010 RUWMP, p. ES-13)

Conclusion

Based on the supply entitlements, capacities and reliability included in the 2010 RUWMP, EVWD has sufficient supply under normal and drought conditions. The Project’s normal demand was estimated at 3,605 AFY, which is approximately 20 percent of EVWD’s projected demand for 2035. Total projected water demand is significantly less than EVWD’s projected water supplies at each five-year increment to year 2035; therefore, the public water system (EVWD) will have sufficient supplies to satisfy the demands of the Project, in addition to existing and planned future uses. (WSA, p. 28) Therefore, impacts regarding available water supply will be **less than significant**. No mitigation is required.

Threshold: *Would the proposed Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?*

Sewer service to the Project will be provided by EVWD. EVWD presently provides sewer collection services to customers in their service area. There are no existing sewer collection facilities in the immediate vicinity of the Specific Plan area. The closest existing sewer collection facility is located to the west in Greenspot Road approximately 10,000 feet from the Specific Plan area. From this point sewage is carried in existing facilities westerly approximately 11 miles to the San Bernardino Regional Wastewater Treatment Plant (WRP) operated by the city of San Bernardino. The Project’s wastewater generation is 1.15 MGD (RBF(b), p. 2). The existing EVWD collection facilities are not adequately sized to

carry the wastewater generated from the Project. Therefore, the Harmony site will be served by a new on-site wastewater treatment plant that will have capacity solely to treat wastewater from the Project. Wastewater generation, treatment plant sizing, system hydraulics and facility planning are based on a conceptual level study prepared by RBF Consulting. This concept utilizes the recycled water to irrigate the landscaping in the common areas. Development of the on-site wastewater treatment plant, which will also produce recycled (non-potable) water for use on site, will be guided by Project design features and all applicable regulations. For example, the wastewater treatment plant will conform to EVWD and California Department of Public Health standards, a Waste Discharge Permit and/or NPDES Permit will be issued to EVWD prior to issuance of any grading permit, and wastewater will be treated to Title 22 regulations. Therefore, impacts regarding wastewater capacity will be **less than significant**.

Threshold: *Would the proposed Project be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?*

The City’s solid waste is collected by Cal Disposal and Burrtec Waste Industries. These services can be provided to the Specific Plan area through extension of existing franchise agreements. Solid waste collected within the City is sent to Class III landfills, which are suitable for disposal of nonhazardous and general municipal waste. Nearly all of the solid waste collected in the City is disposed at the San Timoteo Landfill near the city of Redlands. The remainder of the waste is disposed at the Colton Landfill in the city of Colton, and the Mid-Valley Landfill in the city of Rialto.

As discussed, the Project’s build-out will be realized in phases to facilitate development of the Specific Plan area while assuring the provision of infrastructure necessary to support the planned development. The following table shows the estimated solid waste by phase and at full build-out with and without the overlay.

Table 5.17-Q – Estimated Solid Waste Generation by Phase

Land Use	Size	Total Generated Residents ^a / Employees ^b	Solid Waste Generation Rate	Solid Waste Generation		Amount of Combined Permitted Intake at Landfills ^c	
				Per Day (lbs)	Per Day (tons)		
Without Neighborhood Commercial (NC) Overlay							
Build Out	Residential	3,632 du	12,385 res	1 lb/res/day	12,385	6.2	0.053%
	Commercial	143,095 sf	286 emp	14.9 lbs/emp/day	4,261	2.1	0.018%
Total at build-out without solid waste diversion					16,646	8.3	0.072%
Total at build-out with 50% diversion (AB 939)					8,323	4.2	0.036%
Total at build-out with 75% diversion (AB 341)					4,163	2.1	0.018%
With Neighborhood Commercial (NC) Overlay							
Build out	Residential	3,467 du	11,822 res	1 lb/res/day	11,822	5.9	0.051%
	Commercial	306,445 sf	613 emp	14.9 lbs/emp/day	9,134	4.6	0.04%

Land Use	Size	Total Generated Residents ^a / Employees ^b	Solid Waste Generation Rate	Solid Waste Generation		Amount of Combined Permitted Intake at Landfills ^c
				Per Day (lbs)	Per Day (tons)	
Total at build-out without solid waste diversion				20,956	10.5	0.091%
Total at build-out with 50% diversion (AB 939)				10,478	5.2	0.045%
Total at build-out with 75% diversion (AB 341)				5,239	2.6	0.022%

Notes:

Numbers rounded to nearest whole, except per day (tons) which are rounded to the nearest tenth, and amount of combined permitted intake at landfills, which are rounded to nearest thousandth.

du = dwelling units; sf = square feet; res = residents; emp = employees; lb = pound

^a Based on 3.41 persons per household based on the Draft 2012 Housing Element, Table 8.6 (Housing Element)

^b Based on 1 employee per 500 square feet.

^c Combined permitted daily intake of Colton, Mid-Valley, and San Timoteo landfills (11,600 tons).

As shown, without landfill diversion the Project will generate an estimated 16,646 pounds (8.3 tons) of solid waste per day without the NC overlay, and 20,956 pounds (10.5 tons) per day with the NC overlay. Annually, this solid waste generation amounts to approximately 3,029 tons without the NC overlay, and 3,833 tons with the NC overlay. Based on existing landfill availability shown previously on **Table 5.17-H**, the Project’s daily solid waste generation without the NC overlay represents 0.27 percent of Colton Landfill’s daily permitted intake, 0.11 percent of Mid-Valley Landfill’s daily permitted intake, and 0.83 percent of San Timoteo Landfill’s daily permitting intake. The Project’s daily solid waste generation with the NC overlay represents 0.34 percent of Colton Landfill’s daily permitted intake, 0.14 percent of Mid-Valley Landfill’s daily permitted intake, and 1.05 percent of San Timoteo Landfill’s daily permitting intake. Further, the collective daily intake of these three landfills is 11,600 tons, of which the Project would represent 0.07 percent without NC overlay, and 0.09 percent with NC overlay at full build-out.

It should also be noted that the Project’s solid waste generation will likely be less than the quantities shown on **Table 5.17-Q**, above, due to compliance with AB 939 and AB 341. When factoring the mandated diversion rate of 50 percent pursuant to AB 939, the Project without the NC overlay will generate 8,323 pounds (4.2 tons) per day at full build out, which is 0.04 percent of combined landfills’ permitted daily intake; and with the NC overlay the Project will generate 10,478 pounds (5.2 tons) per day at full build out, which represents 0.05 percent of combined landfills’ permitted daily intake. As this Project will not be fully realized until after 2020, City and Project compliance with AB 341 will entail a 75 percent diversion rate resulting in 4,163 pounds (2.1 tons) per day without the NC overlay and 5,239 pounds (2.6 tons) per day with the NC overlay, which both represent 0.02 percent as compared to the existing combined landfills’ permitted daily intake.

Although for the sake of comparison, at current intake levels, the existing landfills that serve the City can adequately accommodate the Project. However, to date, the expected closure dates for the Colton Landfill and Sam Timoteo landfills under current, approved state permits will close before full build-out of the Project. Even still, with the regulatory nature of landfills in the state, it is possible these landfills will be expanded and/or their closure date postponed in the near future. Thus, these closure dates should not be regarded as definite, as these identified landfills may still potentially serve the Project.

Additionally, other regional landfills may be utilized in the future by the City, as well as transfer stations, which serve as transfer point of regional solid waste to ample landfills farther away in another region.

According to the current San Bernardino Countywide Integrated Waste Management Plan, which is prepared to reduce dependence on landfilling solid waste and ensure an effective and coordinated effort to safely manage solid waste, the county continues to have disposal capacity available for solid waste generated, but not diverted, in excess of 15 years as required under Public Resources Code Section 41701, also known as AB 939 (SBCIWMP 2012 Review, p. 23). Permitted disposal capacity is available at the California Street, Colton, Mid-Valley, and San Timoteo landfills located in the San Bernardino Valley region. Based on actual 2011 data, the system-wide characteristics indicate that the county has an estimated site-life of 63 years of refuse capacity (SBCIWMP 2012 Review, p. 23). Moreover, the county has identified San Timoteo and Landers landfills for potential expansion. The estimated closure years for these two sites are 2016 and 2018, respectively. The county is in the process of preparing an EIR for the expansion of the Landers landfill, and no substantial actions have been implemented, as yet, on the planned expansion of the San Timoteo Landfill (SBCIWMP 2012 Review, p. 24).

The five-year update review report of the San Bernardino County Integrated Waste Management Plan concluded that while there has been a reduction in growth within the last five years, the character of the county's waste stream has not significantly changed. The goals, objectives, and policies of the management plan are still applicable and consistent with applicable laws and regulations. The annual reports and information system for the county and each city are up to date. Based on the updated status provided by the annual reports, the continuing development and implementation of selected and alternative programs, the information received from the county's Local Task Force, the recent amendments to the countywide Siting Element and Non-Disposal Facility Element, and the information presented in the five-year review report, San Bernardino County determined that no other revision to the Integrated Waste Management Plan is necessary. (SBCIWMP 2012 Review, p. 31)

The Project is not expected to cause adverse, long-term impacts to landfill capacity in the region; even if one of the identified landfills serving the City was not expanded or permit extended, but instead was closed, the City would be required by law (AB 939) to start planning for a new landfill with other member cities within the jurisdiction. Moreover, to reduce waste disposal in landfills, AB 939 and AB 341 also require city and county agencies to divert 50 percent of its solid waste from landfills and achieve up to 75 percent diversion rate by 2020. Commercial and public entities producing at least four cubic yards of solid waste per week, single-family residential housing, and multi-family residential housing with five or more dwelling units are all required to provide recycling programs as pursuant to these legislations. City and county agencies are subject to daily fines if solid waste diversion goals are not met. Further, the City is required to prepare and submit a Source Reduction & Recycling Element, and the City has developed an array of recycling programs in an effort to reduce the amount of solid waste to local landfills. These programs include a no-cost Citywide curbside recycling program for households, office recycling in all City departments, education programs on recycling, and participation in a program by San Bernardino County to encourage residents to provide Christmas trees for mulching

at regional landfills. Further, all new construction is subject to the CALGreen Code, which requires green design and construction techniques be applied.

The Project will also incorporate a recycling program planning for construction throughout the community, and installation of recycling bins during operation will be a general landscape standard. Recycling receptacles will also be provided at each picnic table in the proposed community park (Planning Area 44) as well as the neighborhood parks (Planning Areas 19B and 47), and as part of the street furniture. Moreover, the Project will provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling; separate recycling and waste receptacles will be provided at all public garbage bins along sidewalks, at public facilities, and commercial centers. Further, as required by the CALGreen Code, the Project will also prepare and submit for approval a construction and demolition waste management plan.

Therefore, as existing Citywide programs and compliance to said legislations and CALGreen Code will be applicable to the Project, as the county has identified sufficient landfill capacity for at least the next 63 years in its latest report, and in addition to the programs and standards proposed by the Project itself, impacts to solid waste will be **less than significant**.

Threshold: *Would the proposed Project comply with federal, state, and local statutes and regulations related to solid waste?*

Federal, state, and local statutes and regulations regarding solid waste generation, transport, and disposal are intended to assure adequate landfill capacity through mandatory reductions in solid waste quantities (e.g., through recycling and composting of green waste) and the safe and efficient transport of solid waste. The Project will comply with all regulatory requirements regarding solid waste, including AB 939 and AB 341. AB 939, which is administrated by the California Department of Resources Recycling and Recovery required local governments to achieve a landfill diversion rate of at least 50 percent by January 1, 2000, through source reduction, recycling, and composting activities. Moreover, AB 341 increases the minimum solid waste diversion rate to 75 percent by 2020, and mandates multi-family residential uses of five dwelling units or more and commercial or public entities that generate more than four cubic yards of commercial solid waste per week to recycle. Such regulations will be applicable to this Project and adherence is mandatory. Further, mandates set forth by the CALGreen Code aim to reduce solid waste generation and promote recycling and diversion design and activities, to which this Project is required to comply. Therefore, regarding solid waste statutes and regulations, this Project will result in **no impacts**.

Threshold: *Would the proposed Project increase demand for other utility and service systems, the construction of which could cause significant environmental effects?*

Development of the Project will result in additional demand for other utilities within the City or near the Specific Plan area including electric, gas, and telecommunication services. A portion of the existing off-site power pole line operated by SCE near Greenspot Road will be relocated as part of the City's Greenspot Bridge project (JFI, pp. 18-19). There are several different SCE overhead distribution lines on the Project site, and there is one transmission line crossing the Project site that currently supports

distribution facilities. These facilities will all require some kind of action, varying in scope from permanent removal, temporary relocation, permanent aerial relocation, conversion to underground, to connection to future backbone utilities (JFI, p. 20). Lines that are no longer used can be removed and their easements quitclaimed as early as is convenient with proper approval from SCE. Some of the overhead services may need to be maintained in place pending the construction and energizing of the future underground system; however, following the connection to the new backbone, the overhead facilities will be removed and the associated easements quitclaimed (JFI, p. 20). Further, due to the topography, attempting to protect some of the power poles in place may result in conflicts with the grading process, necessitating temporary overhead relocations around conflict areas (JFI, p. 21).

The Project will also adhere to SCE's rules, including the aboveground enclosure initiative, and payment of associated fees. SCE has provided the Project with a "will serve" letter, which is available in the *Dry Utility Report* (JFI, p. 109). In addition, regarding the concern of electromagnetic fields (EMF) generated from electric currents, such as power lines and telecommunications and broadcasting facilities, the no definitive link has been made between disease and living in proximity to EMF based on studies by the World Health Organization and state PUC. (The state PUC regulates private utilities.) Due to the lack of scientific or medical conclusions about potential health effects from utility electric facilities and power lines, the PUC adopted Seven Interim Measures that help to address public concern on this subject. The interim EMF requirements apply to SCE. (JFI, pp. 35, 38) Thus, no direct or indirect impacts on human and environmental health are anticipated from EMF.

Regarding telecommunications lines, Verizon does not currently have any facilities in the vicinity of the Project site, but will serve the Project with fiber-optic cable. The size and quantity of ducts and structures in the backbone substructures will therefore be less than was previously required for convention copper installations. (JFI, p. 79) The substructure for the telephone backbone system is generally installed for Verizon by the land developer. When the substructure has been completed to the satisfaction of Verizon, it is cabled and is subsequently taken into plant by Verizon. (JFI, p. 87) Verizon has also provided a "will serve" letter for this Project, which is available in the *Dry Utility Report* (JFI, p. 110). As their lines will utilize the backbone utilities, no impact is anticipated.

Time-Warner currently does not have any facilities in the vicinity of the Project; however, when required, Time-Warner will build their fiber-optic facilities to the Project site and install them within the future backbone street in joint trench with the electric, telephone, and gas facilities (JFI, p. 90). Time-Warner has provided a "will serve" letter to the Project, which is available in the *Dry Utility Report* (JFI, p. 112). As their lines will utilize the backbone utilities, no impact is anticipated.

SCG does not have any main in the vicinity of the Project. SCG has provided a "will serve" letter to the Project, which is available in the *Dry Utility Report* (JFI, p. 111). SCG will probably not serve the Project site with the 4-inch diameter medium pressure main in Greenspot Road north of the existing bridge. It will likely be considered insufficient to the needs of the Project, especially since there are currently no other supporting gas facilities in the vicinity of the Project. At this time it is too early to predict how the Project will ultimately be served by SCG; however, it is likely their facilities will utilize the backbone utilities. (JFI, pp. 91-92) As that is assumed to be the case, no impact is anticipated.

In conclusion, the Project will increase demand for other utility and service systems. However, the construction of these facilities will **not result in significant impacts**. Therefore, no mitigation is required.

5.17.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measure that could minimize significant adverse impacts (State *CEQA Guidelines* Section 15126.4) Impacts to utilities and service systems are less than significant and thus no mitigation measures are required.

5.17.7 Summary of Project-Specific Environmental Effects after Mitigation Measures are Implemented

The Project will comply with applicable wastewater treatment requirements. The Project will have sufficient water supplies available. The construction of new stormwater facilities and water and wastewater treatment facilities proposed by the Project will not result in a significant impact on the environment. The Project will be served by a landfill with sufficient capacity to accommodate its disposal needs. Thus, potential impacts to utilities and service systems **will be less than significant**.

5.17.8 Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Utilities and Service Systems include water, wastewater, drainage, solid waste disposal, and other dry utilities, e.g., electricity, natural gas, and cabling/telecommunications services. The geographic context for cumulative impacts for each of these services is different as discussed in the following paragraphs.

Water service and supply will be provided to the Project by EVWD. Water supply for the Project is included in the 2010 RUWMP, which concluded that water supplies will meet or exceed water demands in a normal year, a single dry year, and a multiple dry year period. (2010 RUWMP, pp. ES-6—ES-8, 2-6, 7-30.) Thus, cumulative impacts regarding water supply will be **less than significant**.

During the initial building phase when there will be insufficient sewage generated to operate the on-site wastewater treatment plant, the Project wastewater is treated at the Margaret H. Chandler Water Reclamation Plant (WRP), the geographic context would be EVWD's service area because EVWD has a contractual arrangement with the San Bernardino Municipal Water Department (SBMWD) for treatment. Current capacity at the WRP is 33 million gallons per day (mgd) and the current average flow is approximately 26 mgd (29,100 AFY) (2010 RUWMP, p. 7-40). The 2010 RUWMP anticipated flows to increase 5.4 mgd by 2035,⁴ which includes full buildout of the Project (2010 RUWMP, p. 10-33). Since the anticipated 2035 flows (26 mgd existing + 5.4 future mgd = 31.4 mgd) are less than the treatment capacity of the WRP (33 mgd), cumulative impacts will be less than significant.

Once the on-site wastewater treatment plant is fully operational; the geographic context for cumulative impacts would be the Harmony Specific Plan. Because all Project-generated wastewater is being treated on-site, there would be no cumulative impacts in this regard.

⁴ The flows in 2035 are projected to be 35,216 AFY (31.4 mgd).

With regards to infrastructure, impacts resulting from the construction of new on-site water and sewer collection facilities have been evaluated in Section 5 of this DEIR. Impacts associated with off-site facilities are limited to the paved road right-of-way and previously disturbed areas of Greenspot Road and as such is would not contribute to a cumulatively considerable impact.

Solid waste generated within the City is disposed of a landfills operated by the County of San Bernardino Solid Waste Management Division (SWMD); thus the geographic context for cumulative impacts is the San Bernardino County. Development of the Project and other development throughout San Bernardino County will increase the amount of solid waste requiring disposal. As required by Assembly Bill (AB) 939 and AB 341, every city and county in California must comply with certain solid waste diversion rates. Assuming the required diversion is achieved, there is adequate capacity at the solid waste disposal sites that serve the City (GP EIR, p. 5.16-15). Therefore, cumulative impacts to solid waste will be **less than significant**.

Electric, gas, and telecommunication facilities are provided to the City by SCE, SCG, and Verizon and Time Warner, respectively. These utilities have provided “will serve” letters for the Project. The impact of the expansion of these facilities is not cumulatively considerable and is **less than significant**.

Additional information about cumulative impacts is provided in Section 7 of this DEIR.

5.17.9 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

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|---------------------|---|
| CalRecycle
2011a | California Department of Resources Recycling and Recovery, <i>Jurisdictional Landfill Overview: California Waste Stream Profiles, Active Landfills Profile for Colton Sanitary Landfill (36-AA-0051)</i> , webpage. (Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/36-AA-0051/Documents/Permit/43432.pdf , accessed August 25, 2011.) |
| CalRecycle
2011b | California Department of Resources Recycling and Recovery, <i>Jurisdictional Landfill Overview: California Waste Stream Profiles, Active Landfills Profile for Mid-Valley Sanitary Landfill (36-AA-0055)</i> , webpage. (Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/36-AA-0055/Documents/Permit/41235.pdf , accessed August 25, 2011.) |
| CalRecycle
2011c | California Department of Resources Recycling and Recovery, <i>Jurisdictional Landfill Overview: California Waste Stream Profiles, Active Landfills Profile for San Timoteo Sanitary Landfill (36-AA-0087)</i> , webpage. (Available at http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=36&FACID=36-AA-0087 , accessed August 25, 2011.) |
| GP | City of Highland, <i>General Plan</i> , March 2006. (Available at http://www.ci.highland.ca.us/GeneralPlan/ , accessed September 8, 2012.) |
| GP-DEIR | City of Highland, <i>General Plan and Development Code Update Environmental Impact Report</i> , September 2005. (Available at the City of Highland.) |
| PS | City of Highland Public Services Department, <i>Trash and Refuse</i> , webpage. |

(Available at <http://publicservices.cityofhighland.org/Trash/>, accessed February 3, 2012.)

C&D Guide	County of San Bernardino Department of Public Works, Solid Waste Management Division, <i>Construction & Demolition Waste Recycling Guide & Directory</i> , January 2010. (Available at http://www.sbcounty.gov/greencountysb/content/builders/20100405_construction_demolition_recycling_guide.pdf , accessed September 24, 2012.)
SBCIWMP 2012 Review	County of San Bernardino Department of Public Works, Solid Waste Management Division, <i>Five-Year CIWMP Review Report</i> , November 2012. (Available at http://www.sbcounty.gov/dpw/public_notices/pdf/CIWMP-review.pdf , accessed September 24, 2012.)
EVWD (a)	East Valley Water District, <i>Sources of Water Supply, Where Does East Valley Water Come From?</i> , website. (Available at http://www.eastvalley.org/about-east-valley-water-district/sources-of-water-supply/ , accessed December 16, 2011.)
EVWD(b)	East Valley Water District, <i>2014 Water System Master Plan</i> , February 2014. (Available at http://www.eastvalley.org/AgendaCenter/ViewFile/Agenda/02122014-594 , accessed February 21, 2014.)
HSP	City of Highland, Harmony Draft Specific Plan, March 2014. (Available at the City of Highland.)
WSA	East Valley Water District, <i>Harmony Water Supply Assessment</i> , September 2013. (Appendix I.3.)
JFI	Joanna Futerman, Inc., <i>The Greenspot Property Dry Utility Report</i> , June 2011. (Appendix N.)
RBF(a)	RBF Consulting, <i>Harmony Specific Plan, Domestic Water System Analysis</i> , November 5, 2013. (Appendix I.2.)
RBF(b)	RBF Consulting, <i>Harmony Specific Plan, Sewer Analysis</i> , January 8, 2014. (Appendix I.4.)
RBF(c)	RBF Consulting, <i>Hydrology and Sedimentation Technical Study</i> , Harmony Specific Plan, City of Highland, San Bernardino County California, December 2013 (Appendix I.1)
2010 RUWMP	San Bernardino Valley Municipal Water District, <i>Amended Draft 2010 San Bernardino Valley Regional Urban Water Management Plan</i> , September 2012. (Available at http://webserver.sbvmd.com/imgs/reports/Amended_RUWMP/FINAL_Am_RUWMP.pdf , accessed June 2013.)
SAWPA Presentation	Santa Ana Watershed Project Authority, <i>Brine Line Presentation</i> , March 2010. (Available at http://www.sawpa.org/documents/sari/BrineLine3-23-10.pdf , accessed February 2, 2012.)

SECTION 6 – Consistency with Regional Plans

Section 15125(d) of the *CEQA Guidelines* requires an EIR to discuss any inconsistencies between the proposed Project and applicable general and regional plans. The purpose of this section is to discuss the proposed Project’s consistency with the regional and local growth forecasts, the Southern California Association of Governments (SCAG) *2012-2035 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS)*, the SCAG Compass Regional Growth Principles, and to provide an analysis of the Project’s impacts on the population, housing, and job projections for the region. SCAG is the designated Metropolitan Planning Organization, and as such, is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality. Additionally, a discussion of the Project’s impacts upon the growth forecasts and its compliance with SCAG’s regional policies is discussed in this section.

A discussion of the proposed Project’s consistency with the Air Quality Management Plan is contained in Section 5.3, Air Quality. Section 5.7, Greenhouse Gas Emissions, discusses consistency with the SCAG SCS, Section 5.10, Land Use and Planning discusses consistency with the applicable General Plan policies, and Section 5.16, Transportation/Traffic discusses consistency with the San Bernardino Congestion Management Program.

6.1 Setting

6.1.1 SCAG Regional Growth Forecasts

Population forecasts for the City and surrounding area are provided by SCAG in the *2012-2035 RTP/SCS Growth Forecast Appendix (SCAG(a))*. The FTP growth forecast is updated every four years, and was recently updated in 2012. The SCAG RTP Growth Forecast is broken down into separate growth forecasts for individual cities and unincorporated County areas. The *Growth Forecast* projects a Year 2035 population of 2,750,000 persons within the San Bernardino County, which includes all cities and unincorporated county areas.

Table 6-A – SCAG San Bernardino County Forecasts, reflects SCAG’s population forecasts for the entire San Bernardino County area.

Table 6-A – SCAG San Bernardino County Forecasts

	2008	2020	2035
Population	2,016,000	2,268,000	2,750,000
Households	606,000	698,000	847,000
Employment	701,000	810,000	1,059,000
Jobs-to-Housing Ratio¹	1.16:1	1.16:1	1.25:1

Source: SCAG(a), *Growth Forecast Appendix*, April 2012, p.36. (Available at http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.pdf, accessed May 23, 2013.)

¹ The total number of jobs relative to the total number of households.

Table 6-B – SCAG City of Highland Forecasts, depicts the SCAG population forecasts for City of Highland, which includes the proposed Project site.

Table 6-B – SCAG City of Highland Forecasts

	2008	2020	2035
Population	53,000	58,600	67,300
Households	15,400	17,700	20,300
Employment	6,000	7,800	9,100
Jobs-to-Housing Ratio¹	0.39:1	0.44:1	0.45:1

Source: SCAG(a), *Growth Forecast Appendix*, April 2012, p.36. (Available at http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.pdf, accessed May 23, 2013.)

¹ The total number of jobs relative to the total number of households.

Jobs-to-housing ratio is used as an indicator of how jobs-rich or jobs-poor a community is. SCAG's April 2001 report titled, *The New Economy and Jobs/Housing Balance in Southern California* (SCAG(b)), states that "a balance between jobs and housing in a metropolitan region can be defined as a provision of an adequate supply of housing to house workers employed in a defined area (i.e., community or subregion). Alternately, a jobs/housing balance can be defined as an adequate provision of employment in a defined area that generates enough local workers to fill the housing supply." Generally, a ratio of less than 1-to-1 indicates a jobs-poor area, and a ratio of more than 1-to-1 indicates a jobs-rich area. The much larger SCAG region as a whole is, by definition, balanced. Based upon the 2012 Growth Forecast data shown in **Table 6-A** and **Table 6-B**, San Bernardino County is projected to have 1.25 jobs per housing unit in 2035, which is by definition jobs-rich, while the City of Highland is projected to have 0.45 jobs per housing unit in 2035, which is considered jobs-poor.

6.2 Related Regulations

6.2.1 SCAG Regional Comprehensive Plan

The Regional Comprehensive Plan (RCP) was prepared in 2008 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 the Southern California region for their information and voluntary use for preparing local plans and handling local issues of regional significance.

6.2.2 SCAG Regional Transportation Plan

SCAG is the regional planning agency with responsibility for reviewing the consistency of local plans, projects, and programs with regional plans. It is a federally-designated metropolitan organization for six Southern California counties, including San Bernardino County. As such, SCAG is mandated to create regional plans that address transportation, growth-management, hazardous waste management, and air quality.

SCAG is mandated by the federal government to prepare the RTP every four years. The RTP was most recently updated in April 2012 as the *Regional Transportation Plan 2012-2035 Sustainable Communities Strategy* (RTP/SCS) (SCAG(c)). The RTP/SCS provides a framework for the future development of the regional transportation system and addresses all modes of transportation within the region. At the regional level, the goals, objectives, and policies in the RTP/SCS are used for measuring consistency with an adopted plan.

6.2.3 SCAG Compass Growth Visioning Program

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, SCAG has brought together the goals and ideas of interdependent subregions, counties, cities, communities, and neighborhoods. This process is called Southern California Compass, and the result is a shared “Growth Vision” for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG began Compass in 2002, spearheaded by the Growth Visioning Subcommittee, which consists of civic leaders from throughout the region.

In the short-term, SCAG’s growth visioning process has found common ground in a preferred vision for growth and has incorporated it into immediate housing allocation and transportation planning decisions. In the long-term, the Growth Vision is a framework that will help local jurisdictions address growth management cooperatively and will help coordinate regional land use and transportation planning. The result of this growth visioning effort is SCAG’s 2004 *Growth Vision Report* (SCAG(d)).

The *Growth Vision Report* presents the comprehensive Growth Vision for the six-county SCAG region as well as the achievements of the Compass process. It details the evolution of the draft vision, from the study of emerging growth trends to the effects of different growth patterns on transportation systems, land consumption, and other factors. The *Growth Vision Report* concludes with a series of implementation steps – including tools for each guiding principle and overarching implementation strategies – that will guide Southern California toward its envisioned future.

6.3 Environmental Impacts before Mitigation

6.3.1 Project/Regional Growth Forecast Comparative Analysis

As described in Section 3.0, Project Description, the proposed Project will construct a up to 3,632 dwelling units on the Project site without the Neighborhood Commercial Overlay and 3,467 dwelling units with the Neighborhood Commercial Overlay. Based on the City of Highland’s average household size of 3.41 persons per dwelling unit, the Project would generate a total of up to approximately 12,385 persons. The following table presents the Project's population.

Table 6-C – Projected Project Population

Land Use Type	Generation Rate (persons per dwelling unit) ¹	Dwelling Units	
		Without neighborhood Commercial Overlay	With neighborhood Commercial Overlay
Residential	3.41	3,632	3,467
Total Population		12,385	11,822

¹ Based on the Draft 2012 Housing Element, Table 8.6 (Housing Element)

The Project’s population comprises between 0.55% and 0.52% of the forecasted population for San Bernardino County and between 21.13% and 20.17% of the forecasted population for the City of Highland in 2020. In 2035, the Project’s population will comprise between 0.45% and 0.43 % of the

forecasted population for San Bernardino County and between 18.40% and 17.57% of the forecasted population for the City of Highland.

The Harmony Specific Plan also includes 5.7 acres of Neighborhood Commercial uses and includes an additional 13.9 acres of Neighborhood Commercial uses within the Neighborhood Commercial Overlay. This results in between 62,073 square feet and 225,423 square feet of commercial uses with and without the overlay, respectively. Using an employment generation factor of 1 employee per 500 square feet of commercial building space, this Project can be projected to generate between 124 and 451 jobs, with and without the Neighborhood Commercial Overlay, respectively. The following table presents the Project’s projected employment.

Table 6-D– Projected Project Employment

Land Use Type	Generation Rate (SF/Employee) ¹	Square Footage	
		Without Neighborhood Commercial Overlay	With Neighborhood Commercial Overlay
Neighborhood Commercial	500	62,073	225,423
Total Employment		124	451

¹ Based on the Riverside County General Plan Appendix E: Socioeconomic Buildout Projection Assumptions & Methodology (RCGP Appendix E)

Assuming the creation of between 124 and 451 new jobs could be generated by the proposed Project, implementation would represent an increase of approximately 1.59% to 5.78% of the forecasted employment for the City in 2020, and an increase of approximately 1.36% to 4.96% in 2035. The proposed jobs would increase the jobs-to-housing ratio.

As previously described above, the 2012 SCAG growth forecast indicates that in the year 2020 the jobs-to-housing ratio for the City would be 0.44, which is by definition jobs-poor. If the Project were not implemented, the jobs-to-housing ratio would be expected to improve by 2035 to 0.45. However, the City would still be jobs-poor. Thus, implementation of the Project would increase the jobs-to-housing ratio.

6.3.2 Consistency Analysis

Regional Plans affecting the Project are the 2012 RTP/SCS and the SCAG Compass Regional Growth Principles. The Project's consistency with these policies are discussed in **Table 6-E – Project Consistency with SCAG’s 2012 Regional Transportation Plan** and **Table 6-F – Project Consistency with SCAG’s Compass Growth Visioning Regional Growth Principles**, below.

Table 6-E – Project Consistency with SCAG’s 2012 Regional Transportation Plan

SCAG 2012 RTP Goals		Statement of Consistency, Non-Consistency or Not Applicable
<i>RTP G1</i>	<i>Align the plan investments and</i>	This goal is specific to the RTPs investments and policies, and

SCAG 2012RTP Goals		Statement of Consistency, Non-Consistency or Not Applicable
	<i>policies with improving regional economic development and competitiveness.</i>	therefore does not apply to the proposed Project.
RTP G2	<i>Maximize mobility and accessibility for all people and goods in the region.</i>	<p>The proposed Project is not a transportation improvement project and will not create significant changes to the existing transportation system. Rather, the proposed Project includes the development of a master planned community with residential, commercial/retail, parks and open spaces.</p> <p>Currently the proposed Project is located 6 miles east of the SR-210 freeway, 4.5 miles north of the I-10 freeway, and just north of SR-38. Access to the Project through the City of Highland is limited to Greenspot Road, a paved, two-lane road, and Newport Avenue, a paved street which runs east-west through the southern portion of the Project and provides limited access from the City of Redlands and incorporated San Bernardino County.</p> <p>The proposed Project contains a circulation plan that addresses both on and off-site circulation requirements proposed street improvements and reinforces the goal of creating a pedestrian friendly environment. Provisions are planned for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Sidewalks connecting residential neighborhoods with parks and community facilities are planned within the public rights-of-way of roadways. Off-street trails connect residential areas to open space and off-site trails and recreational amenities.</p> <p>In addition, two potential bus stops have been identified in the Project, in coordination with the transit agency. As the Project develops overtime, bus service may be expanded within the community. Exhibit 6-3, Trails and Public Transportation, from the Harmony Specific Plan, illustrates potential bus stop locations and pedestrian and bicycle connectively system within the Project area. Through the plans proposed by the Project, mobility and accessibility for all people served by the Project and the surrounding area have been improved.</p> <p>Therefore, the proposed Project complies with this goal.</p>

SCAG 2012RTP Goals		Statement of Consistency, Non-Consistency or Not Applicable
RTP G3	<i>Ensure travel safety and reliability for all people and goods in the region.</i>	See Response to RTP G2. As stated above, provisions are made for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Therefore, the proposed Project complies with this goal.
RTP G4	<i>Preserve and ensure a sustainable regional transportation system.</i>	The proposed Project is not a transportation improvement project and will not create significant changes to the existing transportation system. Nonetheless, to help preserve the existing transportation system and to ensure improvements to the proposed circulation network are made and that area-wide traffic conditions do not worsen as development occurs, Section 5.16 Traffic/Transportation discusses proposed traffic improvements that will be required to maintain the required LOS. In addition, a Development Agreement is proposed by the Project which will include provisions for phasing of development and the methods of financing of construction, operation of maintenance of public facilities, infrastructure improvements, and services for the Specific Plan area, including any transportation improvements. Therefore, the proposed Project complies with this goal.
RTP G5	<i>Maximize the productivity of our transportation system.</i>	See response to Goal RTP G2. Therefore, the proposed Project complies with this goal.
RTP G6	<i>Protect the environment and health for our residents by improving air quality and encouraging active transportation.</i>	As discussed above, development of the Project would facilitate a circulation plan that reinforces the goal of creating a pedestrian friendly environment. Provisions are planned for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Sidewalks connecting residential neighborhoods with parks and community facilities are planned within the public rights-of-way of roadways. Off-street trails connect residential areas to open space and off-site trails and recreational amenities. Two potential bus stops have also been identified in the Project, in coordination with the transit agency. In addition, the Project has developed a comprehensive list of sustainable design strategies for residential and nonresidential development that exceed the minimum standards in the community and exceed the measures outline in CALGreen

SCAG 2012RTP Goals		Statement of Consistency, Non-Consistency or Not Applicable
		<p>(2010), including some sustainable best practices from exemplary communities that are applicable to the Project.</p> <p>Mitigation measure discussing impacts to air quality are discussed in Section 5.3, Air Quality, of this DEIR. Compliance with these mitigation measures, as well as development of the sustainable design strategies and circulation plan proposed for the Project would help alleviate air quality impacts and encourage additional modes of transportation.</p> <p>Therefore, the proposed Project complies with this goal.</p>
RTP G7	<i>Actively encourage and create incentives for energy efficiency, where possible</i>	<p>Development within the Project is focused on integrating principles and best practices of sustainability and green design. The Project has developed a comprehensive list of sustainable design strategies, including requiring buildings to meet or exceed the minimum standard design required by the California Energy Standards and the installation of energy-efficient windows. All of these standards are outlined in Table 10.1 of the Specific Plan.</p> <p>Therefore, the proposed Project complies with this goal.</p>
RTP G8	<i>Encourage land use and growth patterns that facilitate transit and non-motorized transportation</i>	<p>See response to Goal RTP G2.</p> <p>Therefore, the proposed Project complies with this goal.</p>
RTP G9	<i>Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.</i>	<p>The proposed Project is not a transportation improvement Project and will not establish a new transportation system nor create significant changes to the existing transportation system.</p> <p>Therefore this goal is not applicable to the proposed Project.</p>

Table 6-F – Project Consistency with SCAG’s Compass Growth Visioning Regional Growth Principles

Growth Visioning Principles	Statement of Consistency, Non-Consistency or Not Applicable
<p>Principle 1: Improve mobility for all residents.</p> <ul style="list-style-type: none"> • <i>Encourage transportation investments and land use decisions that are mutually supportive.</i> • <i>Locate new housing near existing jobs and new jobs near existing housing.</i> • <i>Encourage transit-oriented development.</i> • <i>Promote a variety of travel choices.</i> 	<p>The Project site is designated in the General Plan Land Use Plan as the Seven Oaks Dam Policy Area, which is intended as a significant prime master planned residential area that could accommodate 100’s or even 1000’s of residential housing units.</p> <p>The proposed Project is a master planned community that will be planned comprehensively to ensure quality development. The Specific Plan calls for a variety of housing types that are supported by services, in a well-planned environment. The Specific Plan accommodates 3,632 residential units on 658 acres within 49 distinct residential planning areas, consistent with the intention of the General Plan. The Specific Plan incorporates a variety of housing types into its land use plan in order to address lifestyle considerations of singles, families, and empty nesters.</p> <p>The proposed Project contains a circulation plan that addresses both on and off-site circulation requirements proposed street improvements and reinforces the goal of creating a pedestrian friendly environment. Provisions are included for the safe and efficient movement of vehicular traffic through the community, as well as a safe environment for pedestrian movement and bicycle traffic. Sidewalks connecting residential neighborhoods with parks and community facilities are planned within the public rights-of-way of roadways. Off-street trails connect residential areas to open space and off-site trails and recreational amenities.</p> <p>In addition, two bus stops have been identified in the Project, in coordination with the transit agency. As the Project develops overtime, bus service may be expanded within the community. Exhibit 6-3, Trails and Public Transportation, from the Harmony Specific Plan, illustrates potential bus stop locations and pedestrian and bicycle connectively system within the Project area. The land use and circulation</p>

Growth Visioning Principles	Statement of Consistency, Non-Consistency or Not Applicable
	<p>plan encourage a variety of travel-choices and encourage non-vehicular travel.</p> <p>Therefore, the proposed Project complies with this principle.</p>
<p>Principle 2: Foster livability in all communities.</p>	
<ul style="list-style-type: none"> • <i>Promote infill development and redevelopment to revitalize existing communities.</i> • <i>Promote developments, which provide a mix of uses.</i> • <i>Promote “people scaled,” walkable communities.</i> • <i>Support the preservation of stable, single-family neighborhoods</i> 	<p>The majority of the Project site is currently undeveloped, and is designated in the General Plan Land Use Plan as the Seven Oaks Dam Policy Area, which was intended as a significant prime master planned residential area. Consistent with the intent, the Project proposes a master planned community with residential uses with a range of densities consistent with the intent of this policy. In addition, other land uses such as neighborhood commercial, parks, and natural open spaces are planned within the Project.</p> <p>As discussed above, the proposed Project includes a circulation plan that reinforces the goal of creating a pedestrian friendly environment, with provisions for a safe environment for pedestrian movement and bicycle traffic. Harmony’s trail network provides opportunities for bicyclists, hikers, and equestrians. Various types of trails offer a wide range of experiences, from hiking/trekking equestrian trails in the natural areas to paved sidewalks and multipurpose trails in urban areas.</p> <p>Therefore, the proposed Project complies with this principle and goals.</p>
<p>Principle 3: Enable prosperity for all people.</p>	
<ul style="list-style-type: none"> • <i>Provide, in each community, a variety of housing types to meet the housing needs of all income levels.</i> • <i>Support educational opportunities that promote balanced growth.</i> • <i>Ensure environmental justice regardless of race, ethnicity or income class.</i> • <i>Support local and state fiscal policies that encourage balanced growth.</i> 	<p>The proposed Project is a master planned residential community with an array of residential densities ranging from estate residential to high density residential product types to meet a wide variety of homebuyer market segments. The Specific Plan incorporates a variety of housing types into its land use plan in order to address lifestyle considerations of singles, families, and empty nesters, and meet the needs of most income</p>

Growth Visioning Principles	Statement of Consistency, Non-Consistency or Not Applicable
<ul style="list-style-type: none"> <i>Encourage civic engagement.</i> 	<p>groups.</p> <p>As part of The Harmony Specific Plan, one potential school site has been identified. The development of this elementary school will be based on the need of the school district. In addition to this traditional educational facility, the Specific Plan calls for nature and agricultural education through a series of interpretive signs along the trail network and at the Santa Ana River woolly star set aside area.</p> <p>The proposed Project includes Neighborhood Commercial uses in Planning Area 20B and Neighborhood Commercial Overlays in Planning Areas 20A, 20C, 35, and 40. Without the Neighborhood Commercial Overlay the Project will have approximately 5.7 acres containing 62,073 square feet (SF) of commercial uses at build-out. With the Neighborhood Commercial Overlay the Project will have approximately 21.6 acres containing 225,423 SF of commercial uses. In addition to the Neighborhood Commercial planning areas, the Project will also include an approximately 1 acre agricultural park that will allow a Farmer’s Market.</p> <p>The proposed Project does not include any new type of development that is not already anticipated in the City of Highland General Plan. The Project proposes residential densities for the Project site that differ from the General Plan densities; however the Project includes a general plan amendment so that the Project will be consistent with the City General Plan. The City of Highland is housing-rich and jobs-poor. The proposed Project would support balanced growth by introducing land uses that would provide employment opportunities, as described above.</p> <p>Prior to Project approval, the public is afforded the opportunity to be involved in the development process through the use of public hearings. Therefore the Project encourages civic engagement during the development process.</p>

Growth Visioning Principles	Statement of Consistency, Non-Consistency or Not Applicable
	<p>Therefore, the proposed Project complies with this principle and goals.</p>
<p>Principle 4: Promote sustainability for future generations.</p>	
<ul style="list-style-type: none"> • <i>Preserve rural, agricultural, recreational and environmentally sensitive areas.</i> • <i>Focus development in urban centers and existing cities.</i> • <i>Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.</i> • <i>Utilize “green” development techniques.</i> 	<p>Residential neighborhoods within the Specific Plan are sited to maximize open space and to preserve sensitive habitat areas, ridges, and canyons. In addition, the Specific Plan includes approximately 535 acres of natural open space which will preserve in perpetuity scenic resources and topographic features. Finally, design guidelines and development standards within the Specific Plan address aesthetic integration of uses within the site and with surrounding areas. The focus is to provide architectural, landscape, streetscape, and site design enhancements to ensure quality development while recognizing the area’s unique history and natural resources.</p> <p>The Project has also developed a comprehensive list of sustainable design strategies for residential and nonresidential development that exceed the minimum standards in the community and exceed the measures outline in CALGreen (2010), including some sustainable best practices from exemplary communities that are applicable to the Project. All of these standards are outlined in Table 10.1 of the Specific Plan.</p> <p>Therefore, the proposed Project complies with this principle and goals.</p>

The tables above reflect that the proposed Project would be consistent with all applicable SCAG policies. Consistency or inconsistency with SCAG regional policies does not result in physical changes to the environment and therefore, no significant effects on the environment.

6.4 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

Cal GREEN California Building Standards Commission, *Guide to the (Non Residential) California Green Building Standards Code*, November 2010. Available at

- <http://www.bsc.ca.gov/Home/CALGreen.aspx>, accessed on August 25, 2011.
- Housing Element City of Highland, *Draft 2014–2021 Housing Element (5th Cycle)*, 2012. (Available at http://www.ci.highland.ca.us/Downloads/Files/DraftHousingElement/Draft_Housing_Element.pdf, accessed May 31, 2013.)
- RCGP Appendix E County of Riverside, *Riverside County General Plan Appendix E: Socioeconomic Buildout Projection Assumptions & Methodology*, 2003. (Available at <http://www.tlma.co.riverside.ca.us/genplan/content/appendix/appendix.html>, accessed May 31, 2013.)
- SCAG(a) Southern California Association of Governments, *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy, Growth Forecast Appendix*. April 2012. (Available at http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.pdf, accessed on May 23, 2013.)
- SCAG(b) Southern California Association of Governments, *The New Economy and Jobs/Housing Balance in Southern California* April 2001. (Available at <http://www.scag.ca.gov/Housing/pdfs/balance.pdf>, accessed on December 5, 2011.)
- SCAG(c) Southern California Association of Governments, *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy*, April 2012. (Available at <http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx>, accessed on June 2013.)
- SCAG(d) Southern California Association of Governments, *Southern California Compass, Growth Vision Report*, June 2004. (Available at <http://www.compassblueprint.org/files/scag-growthvision2004.pdf>, accessed May 31, 2013.)

SECTION 7 – Other CEQA Topics

The State *CEQA Guidelines* stipulate several general content requirements for EIRs. Those applicable to this Project include: cumulative impacts (Section 15130), unavoidable adverse impacts (Section 15126(b)), irreversible changes (Section 15126 (c)), and growth inducing impacts (Section 15126(d)). The following addresses each of these general requirements.

7.1 Cumulative Impact Analysis

7.1.1 Introduction

CEQA requires that an EIR examine the cumulative impacts associated with a project, in addition to project-specific impacts. The discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone (State *CEQA Guidelines* Section 15130(b)).

As stated in Section 15130(a) of the State *CEQA Guidelines*, an EIR “shall discuss cumulative impacts of a project when the project’s incremental effect is cumulatively considerable.” “Cumulatively considerable” means that “the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects as defined in Section 15130” (State *CEQA Guidelines*, Section 15065(c)). Section 15355 of the State *CEQA Guidelines* states that “cumulative impacts” occur from “...the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.”

The EIR must examine “reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project” (State *CEQA Guidelines* Sections 15130(a)(3) and 15130(b)(5)). A cumulative impact is not considered significant if the impact can be mitigated to below the level of significance through mitigation, including providing improvements and/or contributing funds through mitigation fee payment programs.

7.1.2 Assessment of Cumulative Impacts

State *CEQA Guidelines* Section 15130(b)(1) requires that a discussion of cumulative impacts be based on either 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 (“the list method”); or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact (“summary of projections method”).

This EIR utilizes the “summary of projections method” approach and/or the “list method” approach in the cumulative analysis, as appropriate for each issue area.

Section 15130(d) of the State *CEQA Guidelines* states that, “Previously approved land use documents such as general plans, specific plans, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impact analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or area-wide cumulative impacts of the proposed project have been adequately addressed, as defined in Section 15152(f), in a certified EIR for that plan.” Additionally, if a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact. (Section 15130(e) of the State *CEQA Guidelines*)

In those instances where the “summary of projections method” is used, the cumulative impact analysis is based on information contained in the City of Highland General Plan and Draft Environmental Impact Report (SCH No. 2005021046), certified by the City Council in March 2006. Additionally, the Project is consistent with the land use designation and policies of the City General Plan. Both of these documents are hereby incorporated by reference.

In those instances where the “list method” approach is used in the cumulative analysis, the analysis focuses on whether the impacts of the proposed Project are cumulatively considerable within the context of combined impacts caused by other past, present, or future projects. The cumulative impact scenario considers other projects proposed within the Project area that have the potential to contribute to cumulatively considerable impacts. The list of projects considered in this analysis includes development projects provided by the City Highland and surrounding jurisdictions that were evaluated in the Project-specific Traffic Impact Analysis (LSA(a)) and are shown in **Table 7-A – Cumulative Development Projects**. The locations of these cumulative projects in relation to the Project site are shown in **Figure 7-1 – Cumulative Projects within City of Highland, Figure 7-2 – Cumulative Projects within City of Redlands**, and **Figure 7-3 – Cumulative Projects within City of Yucaipa**.

Table 7-A – Cumulative Development Projects

No.	Project Name	Land Use	Project Size (units) ¹
City of Highland (refer to Figure 7-1 for location)			
A	Santa Ana River Wash	Cement Plant	--
B	Blossom Trails	Single Family Residential Residential Condominium	14 DU 306 DU
C	Calvary Chapel Church	Church	--
D	121 SFD Gated Community	Single Family Residential	121 DU
E	San Manuel Village – Partial Built	Restaurant with Drive Through	3.50 TSF
		Restaurant	5.80 TSF
		Bank with Drive Through	5.20 TSF
		Restaurant with Drive Through	5.00 TSF
F	Highland Crossroads	Retail	42.84 TSF
		Bank with Drive Through	5.00 TSF

No.	Project Name	Land Use	Project Size (units) ¹
G	30,000 SF Retail Center at Boulder Avenue/Greenspot Road	Fast Food Retail	14.38 TSF 16.33 TSF
H	Centerstone – 133 SFH	Residential	133 DU
I	Greenspot Village & Marketplace	Residential/Retail	--
J	Fresh & Easy	Retail	14.25 TSF
K	Dairy Queen	Restaurant with Drive Through	2.24 TSF
L	Walmart Expansion	Retail	--
M	Denny's	Specialty Retail Sit Down Restaurant	17.20 TSF 4.80 TSF
N	William Homes	Residential	36 DU
O	Industrial Center on Palm	Industrial	39.75 TSF
P	Farmer Boys	Restaurant with Drive Through	3.6 TSF
Q	Greenspot Retail Office	Retail	5.00 TSF
R	Chong Homes	Residential	5 DU
S	Orange New Jersey Pro Office/Professional/Warehouse	Industrial Park	126.9 TSF
T	Berry St. Peters (Light Industrial Building)	General Light Industrial	8.6 TSF
U	Randal Brank (Medical Office Addition)	Medical-Dental Office Building	25.0 TSF
V	St. Adelaide's Expansion – New Ministry Offices	General Office Building	9.0 TSF
W	Jack Lanphere (Industrial Buildings)	General Light Industrial	25.0 TSF
X	CT Realty Corporation (Business Park)	Business Park	85.0 TSF
Y	KZ Holdings (Mixed Use)	Residential	64 DU
Z	Town Center Retail (Family Dollar)	Shopping Center	101.3 TSF
AA	Immanuel Baptist Church	Church	90.00 TSF
AB	Gas Station and Motel Expansion	Convenience Store Motel	4.3 TSF 38 Units
AC	Village Commercial	Shopping Center	9.9 TSF
AD	Commercial Retail Center	Shopping Center	6.0 TSF
AE	Peter Le (Residential)	Single Family-Detached	8 DU
AF	Hispano Investor (Residential)	Single Family-Detached	17 DU
AG	Golden Security Bank (Residential)	Single Family-Detached	11 DU
AH	North American Residential	Single Family-Detached	8 DU
AI	Ross Jones (Residential)	Single Family-Detached	4 DU
AJ	South Terminus of Lillian Lane (Residential)	Single Family-Detached	13 DU

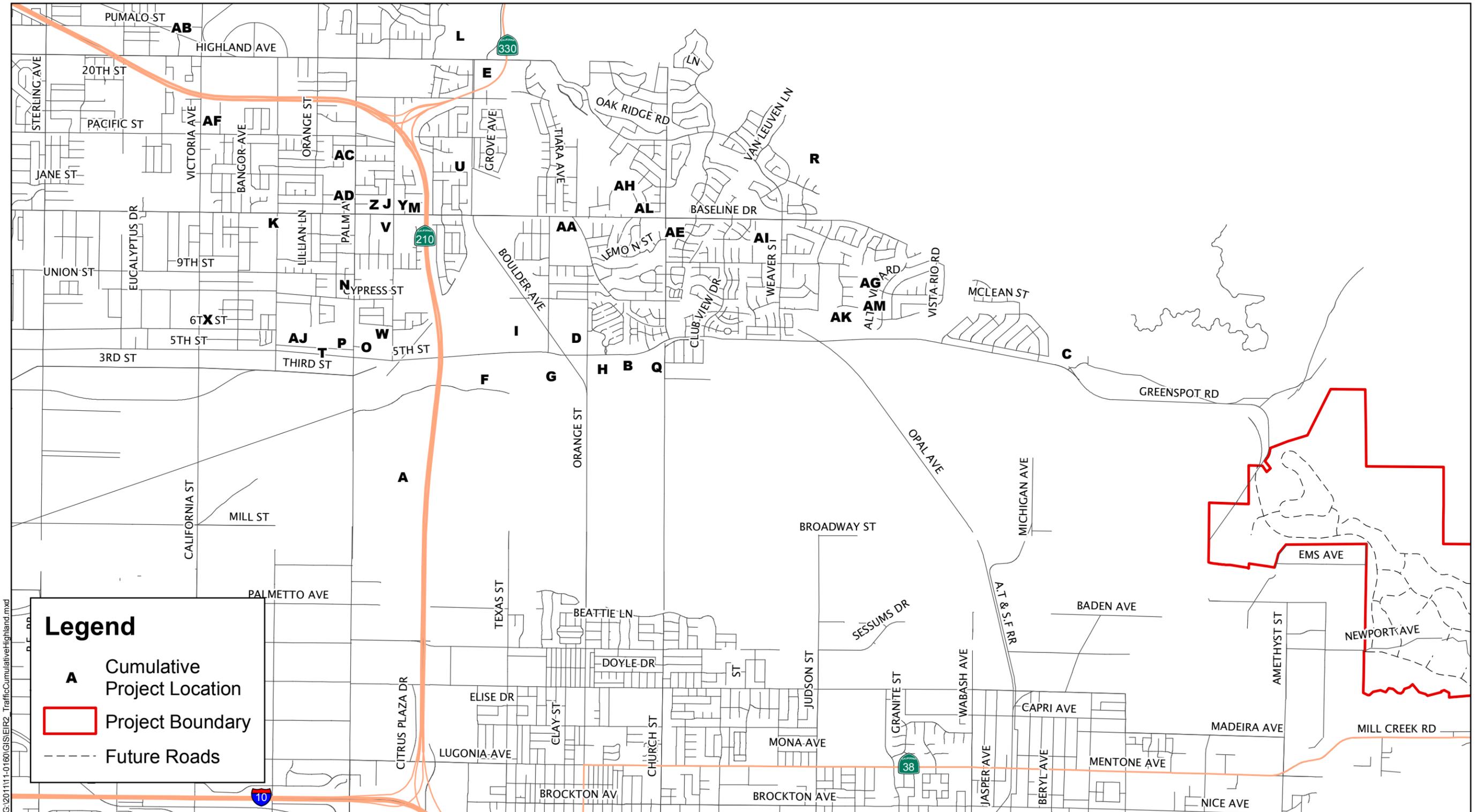
No.	Project Name	Land Use	Project Size (units) ¹
AK	Wright (Residential)	Single Family-Detached	50 DU
AL	Assisted Living Facility	Senior Housing ²	88 DU
AM	Alta Vista and Santa Ana	Single Family-Detached	56 DU
AN	Southeast Corner of Base Line and Siene Avenue	Retail	23.5 TSF
AO	Northwest Corner of Base Line and Boulder Avenue (Kevin Chong)	Bank	5.2 TSF
AP	Pepito's	Restaurant/Commercial	Remodel
City of Redlands (refer to Figure 7-2 for location)			
A	Research/Lugonia/Almond	Industrial Park	880.1 TSF
B	South of I-10/West of California St.	Shopping Center	51.1 TSF
C	NE of Plum Ln. & Idaho St.	General Office Building	8.1 TSF
D	South of Orange Tree Ln./West of Nevada St.	General Office Building	51.4 TSF
E	South of Lugonia Avenue West of Nevada St.	Hotel	102 RMS
F	415-495 Park Ave.	Medical-Dental Office Building	122.6 TSF
G	NE of Alabama St. & Orange Ave.	Condominium/Townhomes	77 DU
H	NE of Orange Ave & Kansas St.	Senior Adult Housing-Attached	160 DU
I	Buckeye between Pioneer, Palmetto & Riverbluff	High-Cube Warehouse	1,100.0 TSF
J	Buckeye between Pioneer, Palmetto & Riverbluff	High-Cube Warehouse	205.0 TSF
K	SW of Tennessee St. & Lugonia Ave.	Shopping Center	8.05 TSF
L	South of Redlands Blvd./ West of Kansas St.	Self-Service Car Wash	7 STALL
M	708 Brookside Ave.	General Office Building	7.00 TSF
N	520 Brookside Ave.	Church	15.1 TSF
O	North of San Bernardino Ave.	High-Cube Warehouse	500.0 TSF
P	NE of Texas St/Third St.	Residential	12 DU
Q	S of I-10 & W of Eureka St.	Shopping Center	150.3 TSF
R	S of Pearl Ave between Eureka St. & Third St.	Shopping Center	18.2 TSF
S	SE of Lugonia Ave & Orange St.	Shopping Center	6.75 TSF
T	1135 Orange St.	Shopping Center	3.24 TSF
U	SW of Lugonia Ave. & Church St.	Condominium Townhomes	37 DU
V	SE of Lugonia Ave & Occidental	Residential	12 DU
W	S of San Bernardino Ave./W of Grove St.	Residential	10 DU
X	Between San Bernardino & Pioneer/E of Deanna Way	Residential	26 DU
Y	N of San Bernardino Ave./ W of Judson St	Residential	74 DU

No.	Project Name	Land Use	Project Size (units) ¹
Z	S of Palmetto/E of Alabama	Residential	33 DU
AA	S of Palmetto & East of Alabama Ave.	High-Cube Warehouse	200.0 TSF
AB	N of San Bernardino Ave. & E of California St.	High-Cube Warehouse	500.0 TSF
AC	SE of New York/San Bernardino Ave.	Residential	121 DU
AD	N of Palmetto between Nevada and Alabama	High-Cube Warehouse	535.0 TSF
AE	Mountain Grove – San Bernardino & Alabama (County)	Shopping Center Hotel Multiplex Movie Theater	595.0 TSF 78 RMS 3,500 Seats
AF	NW Corner of Almond & Alabama (County)	Shopping Center High-Turnover (Sit-Down) Restaurant General Office Building Hotel	11.5 TSF 15.0 TSF 149.0 TSF 180 RMS
AG	Redlands Commerce Center (County)	General Office Building Shopping Center Hotel	60.8 TSF 60.8 TSF 244 RMS
AH	NE of Orange St. & Lugonia Ave.	Residential	228 DU
AI	1020-1050 Nevada	Industrial Park	63.6 TSF
AJ	Madeira Ave W. of Sapphire	Residential	27 DU
AK	SW Corner of San Bernardino Ave. & Wabash	Residential	76 DU
AL	SE Corner of Grove St. & Sylvan Blvd.	Condominium/Townhomes	40 DU
AM	1020-1050 Nevada	Industrial Park	141.0 TSF
AN	1222 Indiana Ct.	General Light Industrial	5.6 TSF
AO	NE of Wabash Ave. & Nice Ave.	Mini-Warehouse	60.9 TSF
AP	North of Palmetto west of Alabama	General Light Industrial	48.0 TSF
AQ	Nevada St. & Palmetto Ave. (County)	High-Cube Warehouse	400.0 TSF
AR	Southwest of Almond Ave. & San Bernardino Ave	High-Cube Warehouse	703.0 TSF
AS	560 W. Colton Ave.	Shopping Center	3.2 TSF
AT	Northeast of Occidental Drive	Residential	36 DU
AU	Northwest of Tennessee & San Bernardino Ave.	Shopping Center	275.0 TSF
AV	North side of Pioneer Ave, between California St. & Nevada St.	High-Cube Warehouse	809.3 TSF
AW	600 W. San Bernardino Ave.	General Office Building	14.0 TSF
AX	1776 Park Avenue	Medical-Dental Office	52.6 TSF
AY	Alessandro Road/ Sunset Hills	Single Family Residential	27 DU
AZ	500 East Citrus	Recreational Center	21.0 TSF
BA	CUP 10-04	General Light Industrial	42 TSF
BB	CUP 10-02	Self Service Car Wash	3 STALLS

No.	Project Name	Land Use	Project Size (units) ¹
BC	Center Street/Burke Street	Single Family Residential	15 DU
BD	Santa Fe Depot	Retail/Fast Food	5.7 TSF
BE	Ford Street/Patricia Drive	Church	20.5 TSF
City of Yucaipa (refer to Figure 7-3 for location)			
A	TTM 14429	Residential	57 DU
B	TTM 14297	Residential	33 DU
C	TTM 17031	Residential	33 DU
D	TTM 16067	Residential	35 DU
E	TTM 17642	Residential	40 DU
F	TTM 16785	Residential	36 DU
G	07-240/CUP	Commercial	87.1 TSF
H	10-092/CUP	Commercial	196.0 TSF
I	08-131/CUP	Church School	60.0 TSF 30.0 TSF
J	TTM 18114	Residential	37 DU
K	09-069/CUP	Condominium/Townhomes	77 DU
L	TTM 15884	Residential	198 DU
M	TTM 16470	Residential	49 DU
N	TTM 18174	Residential	70 DU
O	TTM 18208	Residential	42 DU
P	Freeway Corridor Specific Plan	Residential Multi-Family Residential Commercial Business Park	1,487 DU 960 DU 172 AC 26 AC

Source: LSA, Tables E, F, and G

Notes: 1 TSF = thousand square feet; DU = dwelling unit; RMS = rooms



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Source: LSA, Dec. 2012;
San Bernardino County GIS, 2013.

Figure 7-1 – Cumulative Projects within City of Highland
Harmony Specific Plan Draft EIR

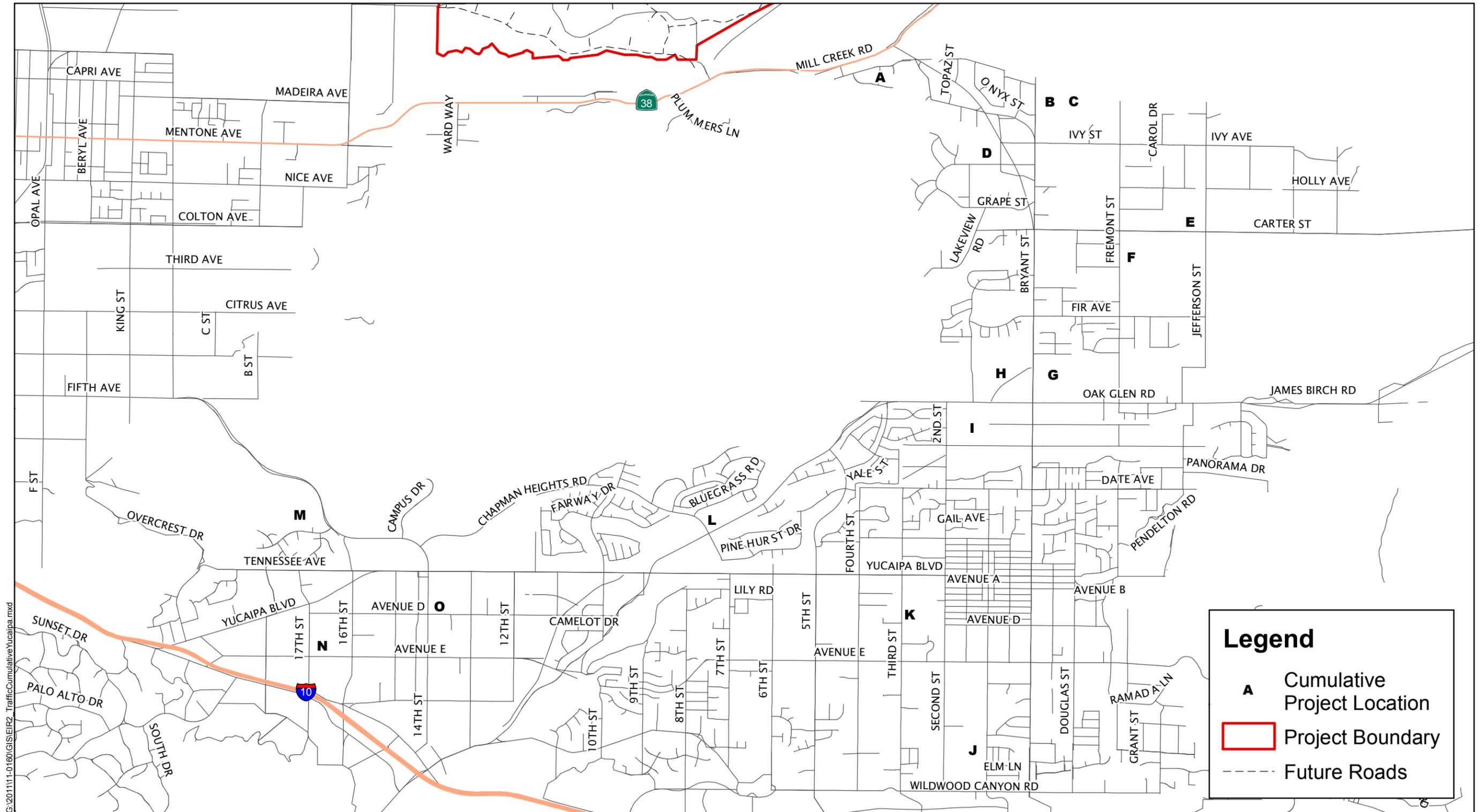


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Sources: LSA, Dec. 2012;
San Bernardino County GIS, 2013.

Figure 7-2 – Cumulative Projects within City of Redlands

Harmony Specific Plan Draft EIR



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Source: Figure 18, Harmony Specific Plan Traffic Impact Analysis, LSA, Dec. 2012.

Figure 7-3 – Cumulative Projects within City of Yucaipa
Harmony Specific Plan Draft EIR

The geographic scope (or cumulative impact area) used for each environmental issue is different depending upon the potential area of effect. For example, the geographic scope for air quality would be the South Coast Air Basin (Basin), while the geographic scope for cumulative aesthetics impacts would be the viewshed, and the geographic scope for traffic/circulation would be the roadways in the Project vicinity that could be affected by the cumulative projects.

7.1.3 Aesthetics

The geographic scope for impacts related to aesthetics consists of the viewshed surrounding the Project site. The area immediately surrounding the Project site is characterized by mostly gently sloping and rolling terrain with moderately to steeply sloping terrain to the north and northeast, which includes the San Bernardino Mountains. The Santa Ana River is located to the west, agricultural land (citrus groves) to the southwest, and Mill Creek to the south. Additionally, there are several low-density rural residences located south and west of the Project site as well as to the east. Farther north and northwest of the Santa Ana River is the Seven Oaks Dam and agricultural land (citrus groves), and farther south of Mill Creek are areas of open space following by single-family residential units and Crafton Hills. The area to the east of the Project site is primarily open space with scattered rural residences, and scattered areas of agricultural land (citrus groves).

For cumulative development to contribute to a significant cumulative impact on aesthetics, those cumulative development projects typically must be contiguous to the Project site and/or be located within the same viewshed, i.e., viewable from the same points as the Project. The known and foreseeable cumulative development projects include projects in the City as well as projects in the cities of Redlands and Yucaipa are listed above in **Table 7-A** and are shown in **Figure 7-1** through **Figure 7-3**.

As shown in **Figure 7-1** through **Figure 7-3**, the nearest cumulative project to the Project site in the City is Calvary Chapel Church (marked on **Figure 7-1** with a "C"), north of Greenspot Road and west of La Cresta Street, approximately 1.45 miles northwest of the Project site. The nearest cumulative project in the City of Redlands is a 27 residential-unit project (marked on **Figure 7-2** with an "AJ"), west of Sapphire Avenue along Madeira Avenue, approximately 1.2 miles southwest of the Project site. Also, the nearest cumulative project in the City of Yucaipa is a 57 residential-unit project (marked on **Figure 7-3** with an "A"), south of Mill Creek Road/SR-38 at its intersection with Bryant Street, approximately one mile southeast of the Project site.

The nearest cumulative projects in the adjacent cities represent low-profile projects that are not anticipated to exceed two stories in height due to the nature of the proposals being single-family residential and a church. The associated visual character of these projects, including sources of potential light and glare during day- and nighttime, will not contribute to a cumulatively considerable aesthetic impact to the Project area due to their distance from the Project site and each other. Further, although all of the cumulative development projects are anticipated to include lighting for security and/or decorative purposes, all lighting associated with the cumulative development projects will be installed per the standards and ordinances of the City and the cities of Redlands and Yucaipa (as appropriate). These standards are intended to protect the views of the nighttime sky by requiring all lighting to be directed downward and away from adjacent properties and the sky. (GP EIR, p. 5.1-21)

Views from these cumulative project sites of the Project may be possible due to the higher elevation of the Project site; however, due to the distance neither the Project nor these cumulative project sites will result in a cumulatively considerable significant impact, which is also due to the geographic “isolation” of the Project site to these other projects which are closer to greater concentrations of existing development. Further, as shown in **Figure 5.1-2 – Conceptual Photo Simulation**, the Project will not block views of the San Bernardino Mountains, which is the major scenic resource in the area (GP EIR, p. 5.1-17).

Thus, known and foreseeable development projects are not close enough to the Project site to contribute to a cumulatively considerable and significant impact on aesthetics. Therefore, cumulative impacts on aesthetics will be **less than significant**.

7.1.4 Agricultural and Forestry Resources

Because agricultural and forestry resources are of statewide significance, the geographic scope for cumulative impacts for these resources is the State of California.

Implementation of the proposed Project will not contribute to a cumulative loss or conversion of forest lands, because there are no existing or designated forest lands on the Project site.

There are no specific agricultural land use designations within the City (GP EIR, p. 5.2-5). The General Plan designates the Project site as “Planned Development,” thus the analysis in the General Plan EIR regarding cumulative impacts to agricultural resources is applicable to the proposed Project.

Under the General Plan’s Agriculture/Equestrian land use designation, existing, active agricultural production will be allowed to continue on a limited basis. However, development per the General Plan will result in the ultimate conversion of approximately 200 acres of Farmland¹ within the City (GP EIR, p. 5.2-8). The General Plan EIR concluded, that even with implementation of mitigation, development of the City per the General Plan would result in a significant and unavoidable impact with regards to the conversation of Farmland to non-agricultural uses (GP EIR, pp. 5.2-8-5.2-9). The mitigation measure included in the General Plan EIR, MM 5.2-1, requires preparation of a site-specific agricultural resource impact evaluations and consideration of conservation easements as partial compensation for site-specific projects that result in a direct loss of agricultural land prior to any City approval for projects on lands containing Farmland (GP EIR, p. 5.2-11).

Development of the proposed Project will continue the historic trend of converting mapped Farmland throughout the City to non-agricultural uses. Specifically, implementation of the Harmony Specific Plan will result in the conversion of approximately 74 acres of Farmland as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (20.4 acres of Prime Farmland, 50.4 acres of Farmland of Statewide Importance, and 3.4 acres of Unique Farmland) to non-agricultural uses. However, the mapped Farmland does not meet the state Department of Conservation’s definition of Farmland because no agricultural production has taken place on the Project site for over 20 years (DEIR, p. 5.2-10). As discussed in Section 5.2, Agricultural and

¹ Farmland refers to land designated by the California Department of Conservation as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Forestry Resources, development per the Harmony Specific Plan will result in a less than significant impact with regards to the conversion of Farmland due to the lack of existing agricultural uses and a LESA model score indicating the less than significant impacts

Because the Project development will contribute a less than significant impact to the conversion of Farmland to non-agricultural use, the Project's contribution to Farmland conversion is **not cumulatively considerable**.

7.1.5 Air Quality

Due to the defining geographic and meteorological characteristics of the Basin, the cumulative area for air quality impacts is the South Coast Air Basin (Basin) itself. As discussed in Section 5.2.4 (Air Quality, Related Regulations, Criteria Air Pollutants), the portion of the Basin within which the City is located is designated as a non-attainment area for NO₂ under State standards, and for ozone, PM-10 and PM-2.5 under both state and federal standards.

As stated in Section 5.3 (Air Quality) of the DEIR, SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same. Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. Based on SCAQMD's regulatory jurisdiction over regional air quality, it is reasonable to rely on its thresholds to determine whether there is a cumulative air quality impact. The SCAQMD mass daily significance thresholds for VOC and NO_x are exceeded during construction. Thus, the Project would have a cumulatively considerable increase in emissions due to construction-related VOC and NO_x. In terms of localized air quality impacts, construction of the Project would not have a cumulatively considerable impact due to criteria pollutant emissions. For the Project "with NC overlay" and "without NC overlay", operational emissions would exceed the SCAQMD's mass daily threshold for VOC, NO_x, CO, and PM-10 emissions. Thus, the Project would have a cumulatively considerable increase in emissions due to operational-related VOC, NO_x, CO, and PM-10 emissions.

Because the Project's emissions exceed applicable SCAQMD thresholds during construction and operation, the Project will result in **significant and unavoidable cumulative impacts**.

7.1.6 Biological Resources

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that substantially diminish or result in the loss of an important biological resource, or those that would conflict with local, State, and/or Federal resource conservation plans, goals, or regulations. Impacts can be locally adverse but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis. Given the biological resources affected by the proposed Project, the geographic context for cumulative impacts is the Santa Ana River corridor. (RBF(a), pp.45-48)

As noted in Section 5.4 – Biological Resources, the Project will not contribute to cumulative impacts to: the existing population of Santa Ana River Woollystar (SARWS), slender-horned spineflower, San

Bernardino kangaroo rat (SBKR), Riversidean alluvial fan sage scrub (RAFSS) habitat, Coastal California Gnatcatcher (CAGN), southwestern willow flycatcher (SWWF), least Bell's vireo (LBVI), burrowing owl, or riparian habitat because these species and/or their habitat are not present on the Project site, the Project has been designed to avoid areas of suitable habitat, or where the Project would result in adverse impacts to sensitive species or habitat mitigation is incorporated to reduce impacts to less than significant levels. (RBF(a), pp. 45-48)

Implementation of the Project will not adversely affect regional wildlife corridors in or adjacent to the site including Santa Ana River Corridor, Mill Creek Corridor, and the Morton Canyon Corridor. The Project will adversely affect the existing Crafton Hills Linkage corridor; however, implementation of mitigation measure **MM BIO 6** will reduce impacts to this corridor to less than significant levels. Cumulative development within the Crafton Hills Area could result in potential impacts to the movement of wildlife along the Mill Creek corridor. However, Project impacts will be mitigated to less than significant. (RBF(a), p. 46)

For the reasons discussed above, **cumulative impacts to biological resources are less than significant with mitigation** due to the minimal amount of permanent loss of intact biological habitat or sensitive species that depend on these resources, permanent preservation of 535 acres of open space throughout the Project site, and incorporation of mitigation measures **MM BIO 1 through MM BIO 6**. (RBF(a), p.45-48)

7.1.7 Cultural Resources

Cultural resources impacts are site-specific with regard to any given resource. Cumulatively, then, impacts that may be considered cumulative simply relate to the loss of cultural resources in general over time throughout the region. As discussed in Section 5.5, Cultural Resources, with implementation of the mitigation measures recommended potential direct adverse impacts to historic and archaeological resources will be mitigated to below a level of significance. Direct impacts to the Bear Valley Highline Aqueduct and the Redlands Aqueduct will be less than significant through documentation of these resources as required by **MM CR 2 and MM CR 3**.

As with archaeological and historic resources, paleontological resources may be considered cumulative simply as they relate to the loss of resources in general over time throughout the region. No fossils have been found or recorded from the project site. However, the Project area consists of deposits that are known to have yielded fossil specimens. Therefore, the potential to find fossils within portions of the Project site is high. Impacts related to destroying unique paleontological resources or sites are significant. By implementing **MM CR 4** potential impacts to paleontological resources will be reduced to less than significant.

With adherence to and implementation of the City's Historic and Cultural Preservation Ordinances, General Plan policies 5.8.1, 5.8.2, and 5.8.3, mitigation measures **MM CR 1 through MM CR 5**, as well as adherence to standard federal, state, and City regulations, impacts to historical resources, archaeological resources, and paleontological resources will **be less than significant**.

Because cumulative impacts to cultural resources relate to the general loss of such resources over time throughout a region, the geographic scope for cumulative impacts to cultural resources is the City and its Sphere of Influence. The City is considered historically, archaeologically, and paleontologically sensitive; thus development, redevelopment, and grading within the City has the potential to impact the Historic District and other properties designated as eligible for listing on the National Register of Historic Places or the California Register of Historic Resources, historic water transportation sites are present, and significant archaeological and paleontological resources (GP EIR, pp. 5.5-16-5.5-17). To reduce impacts to significant historical, archaeological, and paleontological resources, the Highland General Plan incorporates policies and programs to protect and/or document these resources as part of the City's development review process and mitigation measures that require preparation of technical studies, coordination with Native American Tribes, and the presence of monitors during construction if necessary. (GP EIR, pp. 5.5-17-5.5-20)

Therefore, the General Plan EIR concluded with adherence to and implementation of General Plan policies, mitigation measures, and standard federal, state, and City regulations, cumulative impacts to historical resources, archaeological resources, and paleontological resources will be **less than significant with mitigation**. (GP EIR, p. 5.5-20; GP Findings, p. 3-4)

7.1.8 Geology and Soils

Geologic hazards are localized by nature, as they are related to the soils and geologic character of a particular site. Cumulative impacts could occur related to an earthquake, if the magnitude of the quake and location of the fault(s) traversed the region. However, these impacts are not caused by the Project, rather they are the result of the seismic event. Impacts due to seismic activity would be cumulative if state and local building and development codes and regulations (existing regulatory requirements) were not being implemented throughout the region. Since earthquake faults are present throughout San Bernardino County, the geographic scope for cumulative impacts related to geology and soils is San Bernardino County.

Pursuant to City, San Bernardino County, and State Building Code requirements, all new development will be required to incorporate appropriate design and construction measures to guard against ground shaking hazards. Further, the Project and all other projects and structures within the City and San Bernardino County will be constructed in compliance with existing seismic safety regulations of the California Building Code and International Building Code, which requires the use of site-specific engineering and construction standards identified for each class of seismic hazard. In addition, both the City and San Bernardino County require geological and geotechnical investigations in areas of potential seismic or geologic hazards as part of the environmental and development review process.

The City and the unincorporated areas of San Bernardino County are subject to a number of potential geologic hazards that have the potential to impact future build-out of these areas per their respective general plans. These hazards, including fault rupture hazards, ground shaking, liquefaction, landslides and rockfalls, seismically-induced settlement, subsidence and collapsible soils, and soil erosion and loss of topsoil were addressed in Chapter IV, Section 7 of the County 2007 General Plan Program EIR, Section 5.6 of the Highland General Plan EIR, and Section 5.6, Geology and Soils of this DEIR.

Cumulatively, build-out of the County 2007 General Plan, the Highland General Plan, and the Harmony Specific Plan will contribute significantly to the increased exposure of people and property to seismic, slope, soil instability, and wind hazards. However, It was determined that these impacts will be reduced to below the level of significance through implementation of San Bernardino County General Plan EIR mitigation measures GEO-1 through GEO-5 (SBGP EIR, pp. IV-74-IV-76), Highland General Plan Policies (GP EIR, pp. 5.63-18-5.6-19), Project Design Features, existing regulatory requirements, and mitigation measures **MM GEO 1** and **MM GEO 2**, as discussed in Section 5.6, Geology and Soils of this DEIR.

Since all local jurisdictions in the region are subject to local, state and federal laws, including CEQA, cumulative impacts related to geologic and soils safety are **less than significant**.

7.1.9 Greenhouse Gas Emissions

Greenhouse gases (GHG) are those gases that will contribute to global climate change; therefore, the cumulative impact area for GHG emissions is the earth's atmosphere.

As stated in Section 5.7.7 of the DEIR, a project's GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. This DEIR concludes that, while the Project is consistent with SCAG's RTP/SCS and meets AB 32's requirements to reduce emissions by 28.5 percent, as well as the City of Highland General Plan policies designed to reduce GHG impacts (in part because the Project's design features significantly reduce Project GHG emissions), some of the GHG emissions associated with the Project can be reduced only by measures to be implemented by other governmental agencies which are outside the City's jurisdiction. If these actions are not taken by other agencies, the Project would make a significant adverse contribution to cumulative impacts. Therefore, this DEIR recommends that the City, if it approves the Project, adopt a finding pursuant to Public Resources Code Section 21081(a)(2) that in order for the Project's cumulative GHG emissions to be less than significant, measures that are within the responsibility and jurisdiction of other public agencies can and should be adopted by such other public agencies must be implemented. Such measures would include measures by the California Air Resources Board to improve vehicle emission fuel standards or measures by the California Public Utilities Commission and other agencies to increase the use of renewable energy by public utilities to reduce emissions associated with the generation of electricity, which can and should be adopted by such other public agencies.² If such measures are implemented, the Project's contribution to cumulative GHG emissions would be less than significant. If such measures are not adopted or implemented by those agencies, the Project's contribution to cumulative GHG impacts would rise to the level of significance. The City of Highland expects that such other agencies will implement these measures. Therefore, the Project is **not expected to have a significant cumulative impact on GHG emissions**.

7.1.10 Hazards and Hazardous Materials

The cumulative impact area for impacts relative to the use of hazardous materials is the City and its sphere of Influence. The proposed Project, along with buildout per the General Plan, may use and/or

² Such a finding is suggested to be made as described by the California Supreme Court, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority et. al.*, at page 31: <http://www.courts.ca.gov/opinions/documents/S202828.PDF>

store hazardous materials and universal wastes. Established procedures require businesses to disclose storage and handling of hazardous materials and hazardous waste, to establish and implement emergency response plans, and to cooperate in periodic reporting and inspections.

Implementation of the proposed Project with incorporation of the Project design features discussed previously in Section 5.8.4, Hazards and Hazardous Materials, compliance with federal, state, and local regulations, and mitigation measures **MM HAZ 1** through **MM HAZ 8**, will not result in any significant impacts. With respect to the other development within the City, each project will be required to evaluate its own project-specific potential impacts, including those associated with the release of hazardous materials into the environment, or from exposure to a health hazard, in excess of regulatory standards; exposure of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; or the location of a listed hazardous materials site, etc. Since hazardous material and risk of upset conditions are largely site-specific, this would occur for each individual project affected, in conjunction with development proposals on these properties. Further, all future developments within the City and surrounding areas are required to follow all federal, state, and local laws and regulations regarding hazardous materials and other hazards.

In light of the existing regulatory framework governing the storage and use of hazardous materials and waste, the Project's cumulative impact related to hazard and hazardous materials is less than significant, and the Projects contribution is not considerable.

Thus, through compliance with federal, state, and local laws and regulations pertaining to hazards and hazardous materials, cumulatively considerable impacts are reduced to a level that is less than significant.

As the geographic scope for hazards is the City and its sphere of Influence, cumulative impacts on airport land use plans and private airstrips are measured by the build-out of the General Plan. Airport authorities and other agencies regulate aircraft activity. The City, which does not have an airport or private airstrip within its jurisdiction (GP EIR, Figure 5.7-1 and p. 5.7-14), has no direct authority over surrounding airports. The State Aeronautics Act of the California Public Utilities Code establishes statewide requirements for the airport land use compatibility planning and requires nearly every county to create an Airport Land Use Commission (ALUC) or other alternative. San Bernardino County opted for an alternative to the ALUC and delegated responsibility to prepare an Airport Land Use Compatibility Plan to each airport proprietor. (GP EIR, pp. 5.7-7 – 5.7-8)

Airport operations and their accompanying noise and safety hazards require careful land use planning on adjacent lands to ensure the safety of residents and passengers alike, and to protect the City's businesses and property owners to the greatest extent possible from the potential hazards that could be created by operations from the San Bernardino International Airport, especially by arriving and departing flights that fly over the southern portion of the City. Additionally, a small portion of the City lies within an area designated as an Area of Special Compatibility Concern on the Redlands Municipal ALUC Plan. It should be noted that a Comprehensive Land Use Plan (CLUP) and Airport Master Plan for San Bernardino International Airport have not yet been adopted. (GP EIR, p. 5.7-14)

Implementation of the proposed Project, which is not located within an airport influence area or in vicinity of a private airstrip, will not impact existing or proposed development within such areas or affect implementation of the City's General Plan land uses, policies, or programs relative to airport safety hazards. Therefore, cumulative impacts regarding safety hazards with regard to airport land use compatibility are less than significant.

Regarding cumulative impacts to the adopted emergency response or evacuation plan, the City maintains an Emergency Operations Plan. The San Bernardino County Fire Department Office of Emergency Services (OES) responsible for disaster planning and emergency services coordination throughout the county and has prepared a countywide Emergency Management Plan. Implementation of the City's General Plan does not interfere with the implementation of this emergency response plan or evacuation route of the OES. (GP EIR, p. 5.7-24) Thus, buildout of the City per the General Plan in compliance with the City's Municipal Code will not result in a cumulative impact with regards to emergency response or evacuation plans.

Regarding the exposure of people or structures to wildland fires, the northeastern portions of the City are located in an extreme and moderate fire hazard zone. As such, much of the City's vacant land is within the hillside portions of the City and designated as high fire hazard areas. The danger from wildland fires in foothill locations is increased by the number of structures and encroachment of new development in these areas. Specific concerns include the density of development, spacing of structures, brush clearance, building materials, access to buildings by fire equipment, adequacy of evacuation routes, property maintenance, and water availability. The use of fire resistant building materials, implementing fuel modification zones, and maintaining vegetation clearance around structures can help protect developed lands from fires, thereby reducing the potential loss of life and property. New development in wildland and wildland-urban interface areas must be consistent with the provisions of the City's Municipal Code and General Plan policies with regard to meeting fire safety standards for building construction. (GP EIR, pp. 5.7-24 – 5.7-25) Thus, buildout of the City per the General Plan will not result in a significant impact regarding exposure of people or structures to threat of wildland fires through compliance with the City's Municipal Code and General Plan. (GP EIR, p. 5.7-28)

Consistent with City requirements, a Fire Protection Plan that identifies Fire Protection Zones has been prepared for the Project. Subsequent implementing development projects shall have a Fuel Modification Zone (also referred to as Vegetation Management Zones) consisting of landscaping that will reduce the threat of fire through vegetation and maintenance. Therefore, the proposed Project will not contribute to a cumulatively considerable impact.

Therefore, **less than significant cumulative effects** related to hazards and hazardous materials would result from the proposed Project when combined with other development projects per the City General Plan.

7.1.11 Hydrology/Water Quality

Hydrology and water quality includes impacts to water quality, water supply, drainage, and inundation (by water and mud). The geographic context for cumulative impacts each of these issues is different as discussed in the following paragraphs.

Water Quality

The geographic context for cumulative water quality impacts is the Santa Ana River watershed. Water quality standards are set by the State Water Resources Control Board and the Santa Ana Regional Water Quality Control Board (SARWQCB) for all ground and surface waters within the watershed. To maintain and preserve water quality, the SARWQCB has issued a National Pollutant Discharge Elimination System (NPDES) permit (MS4 permit) and waste discharge requirements to the San Bernardino County Flood Control District (the Flood Control District), the County of San Bernardino, and the incorporated cities of San Bernardino County within the Santa Ana Region for the discharge of urban stormwater (Order No. R8-2010-0036, NPDES No. CAS 618036; Santa Ana Regional Water Quality Control Board). All development and significant redevelopment must comply with the NPDES permit.

The Flood Control District has prepared a stormwater management program to comply with the requirements of the MS4 Permit. The City reviews all plans and developments for compliance with existing ordinances (e.g., grading ordinance) and storm water management program requirements. A Water Quality Management Plan for Urban Runoff from New Development and Significant Redevelopment (WQMP) was adopted by the SARWQCB. This includes the preparation of site-specific Water Quality Management Plans (WQMPs) that will identify Best Management Practices (BMPs) to ensure that water quality of receiving waters is not degraded following development. Thus, while continued growth is anticipated to occur, new developments (and significant re-development) will have to comply with these regulations and implement construction and operational BMPs to minimize pollutant transport. BMP's are also required to minimize vectors and odors. For purposes of the analysis in this Draft EIR, the *Conceptual Water Quality Management Plan (CWQMP) for Harmony Tentative Tract No. 18871* has been prepared. As a condition of approval of Tentative Tract Map No. 18871, the City will require an approved CWQMP for the Project. Through compliance with the City's MS4 permit, which includes WQMPs and incorporation of preventative low impact development (LID) site design practices, permanent cumulative impacts regarding water quality will be **less than significant**.³

To maintain water quality standards during construction, the State Water Resources Control Board issued the General Permit for Storm Water Discharges Associated with Construction Activities (Order No. 09-0009-DWQ, as amended by 2010-0014-DWQ, and 2012-0006-DWQ, NPDES No. CAS000002). The main compliance requirement of the Construction General Permit is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The purpose of a SWPPP is to identify potential on-site pollutants and identify and implement appropriate storm water pollution prevention measures to reduce or eliminate discharge of pollutants to surface water from storm water and non-storm water discharges during construction. Storm water best management practices (BMPs) are required to be implemented during construction and grading.

Construction of the proposed Project in conjunction with development of other private and public projects in the watershed has the potential to discharge pollutants during construction. However, because the proposed Project and other development and significant redevelopment projects would be required to comply with the terms of the General Construction Permit and implement appropriate

³ Water quality impacts associated with the potential inundation of the Project's wastewater treatment plant is discussed below under the subheading "Inundation."

project-specific BMPs, temporary cumulative impacts regarding water quality will be **less than significant**.

Groundwater Supply and Recharge

The geographic context for cumulative impacts regarding water supply is the service area of the East Valley Water District (EVWD). EVWD participated in San Bernardino Valley Municipal Water District's (SBVMWD) 2010 San Bernardino Valley Regional Urban Water Management Plan (2010 RUWMP) in addition to having its own Water Master Plan (RBF(c), p. 3).⁴ These documents describe existing water supply sources, distribution systems, and operations for current, near-term and ultimate buildout conditions for each water district. The water demand and buildout projections used in both the EVWD Water Master Plan and the 2010 RUWMP include development of the Project site.⁵

EVWD's water supply is primarily sourced from 20 groundwater wells in the western portion of the service area. These wells pump water from the San Bernardino Basin Area (SBBA) which consists primarily of the Bunker Hill Basin, and supply over 90 percent of the total water production for EVWD customers. The SBBA was defined by the Western Judgment adjudication in 1969. The Western Judgment established the natural safe yield for the SBBA at 232,100 acre-feet per year (AFY) for both surface water diversions and groundwater extractions. Of this amount, SBVMWD agencies are allocated 167,238 AFY.⁶ The SBBA basin is not currently in overdraft condition and no overdraft of this basin is anticipated as a result of new development. (2010 RUWMP, p. 7-30) The 2010 RUWMP concluded that water supplies will meet or exceed water demands in a normal year, a single dry year, and a multiple dry year period. (2010 RUWMP, pp. ES-6—ES-8, 2-6, 7-30.) Thus, cumulative impacts regarding groundwater supply will be **less than significant**.

Implementation of the Project in combination with future development within the EVWD service area will create more impervious surfaces, thus reducing the total groundwater recharge area. Groundwater recharge is a regional issue and several agencies, including the SBVMWD, San Bernardino Valley Water Conservation District, and the Flood Control District are responsible for programs to implement an integrated approach to water resources management, which includes implementation of the NPDES program. (WAP, p. iii) These programs are intended to maintain and increase the amount of groundwater in the SBBA as well as maintain and improve the groundwater quality. The proposed Project, as with all new development in San Bernardino County is required to participate in these programs, which include preparation of project-specific Water Quality Control Plans (WQMPs), incorporation of low impact development principals, and other design features. Through compliance with regional programs to promote groundwater recharge, cumulative impacts will be **less than significant**.

⁴ SBVMWD is the wholesale water supplier to seven local retail water purveyors: City of San Bernardino Municipal Water Department, EVWD, West Valley Water District, Yucaipa Valley Water District, and water utilities owned and operated by the cities of Loma Linda, Redlands, and Colton.

⁵ The EVWD Water Master Plan and the 2010 RUWMP assumed buildout of the Project site per the Sunrise Ranch entitlement approved by the San Bernardino County in 1986. The 2010 RUWMP assumed population of the Project site at approximately 21,559 persons.

⁶ Valley Water District's retail agencies may extract more than 167,238 AFY from the SBBA, but extractions over this amount require import and recharge by Valley Water District of a like amount of water.

Drainage

The geographic context for cumulative drainage impacts is Flood Control District Zone 2. (SBGP EIR, p. IV-101) Development of vacant property within Zone 2 may alter existing localized (i.e., within a specific project-boundary) drainage patterns and increase the amount of impervious surfaces. (SBGP, p. IV-94 and GP EIR, pp. 5.8-12-5.8-13) All development within the County of San Bernardino, including the City, must comply with the requirements of applicable NPDES permits and the San Bernardino County Stormwater Management Program, and local drainage and conveyance ordinances. Compliance with these policies, programs, and regulations effectively minimize potential impacts to flow conveyance and flooding.

Implementation of the Project in combination with future development within Flood Control District Zone 2 will increase the amount of impervious areas, which in turn may increase the amount of runoff to Mill Creek (Reach 1) and the Santa Ana River (Reach 5). The Harmony Specific Plan proposes a comprehensive drainage system intended to collect, convey, and deliver storm flows in accordance with County and City requirements. The Project's proposed storm water management system will collect a portion of the natural runoff from the foothills to the northeast of the Project site in a separate "bypass" storm drain system and safely convey this runoff to the adjacent Mill Creek. Project runoff from the rest of the Project site, which includes the proposed development areas, would be collected and conveyed in a separate storm drain system to the adjacent Santa Ana River and Mill Creek. The collection and routing of storm flow will primarily rely on a new network of storm drains as shown on **Figure 5.9-4 – Drainage Master Plan**. With incorporation of mitigation measures **MM HYD 1** and **MM HYD 2**, and compliance with existing policies, programs, and permits, the Project-related contribution to impacts associated with stormwater flow conveyance and flood potential would not be cumulatively considerable, and **thus less than significant**.

Inundation

The geographic context for flooding impacts is the City and the dam inundation area for the Seven Oaks Dam. Inundation can occur as a result of storms, dam failures, tsunamis, seiches, or mudflows.⁷

The City, like most of southern California, is subject to unpredictable seasonal rainfall. Most years, winter rains are scant. However, every few years the region is subjected to periods of intense and sustained precipitation that result in flooding. Floods are natural and recurring events that become hazardous when humans encroach onto floodplains, modifying the landscape, increasing the amount of impervious surfaces, and building structures in areas meant to convey excess water during floods. (GP EIR, p. 5.8-8). The City and portions of the Santa Ana watershed have the potential for flooding associated with the Santa Ana River and its tributaries. Even with the completion of the Seven Oaks Dam, areas along the Santa Ana River floodplain, City Creek, and Plunge Creek are still within FEMA-designated 100-year flood zones (GP EIR, p. 5.8-13 and GP EIR Figure 5.6-1). This includes approximately 68 acres along the southern boundary of the Project site as shown in **Figure 5.9-3 – FEMA Flood Hazards Map**.

⁷ Tsunamis are tidal waves that occur in coastal areas. A seiche is a small tidal wave, similar to the slopping of water in a basin, that occurs in a lake or other enclosed body of water. (SBGP EIR, p. IV-95) A mudflow is liquid and flowing mud moving across the surface of normally dry land areas.

Implementation of the Project in combination with buildout of the General Plan has the potential to expose people or structures to the risk of flooding and increase impervious surfaces such as asphalt, which will reduce the absorption of water into the ground, resulting in runoff to downstream areas. A portion of the Project site is within Zone A (100 year flood plain) of the current FEMA flood zone maps. However, mitigation measure **MM HYD-3** requires evidence that a Conditional Letter of Map Revision (CLOMR) has been received from FEMA prior to the issuance of grading permits and a Letter of Map Revision (LOMR) has been issued by FEMA prior to issuance of a building permit. Additionally, any new development within a 100-year flood zone will be elevated outside the flood zone and provide on-site storm drain systems to avoid the risk of flooding from a 100-year storm event. (GP EIR, p. 13)

The City, like most of southern California, is subject to seismically induced inundation⁸ from dam failure and aboveground water storage reservoirs. The Seven Oaks Dam is the closest dam to the City. The southern portions of the City, which includes part of the northwest portion of the Project site, are within the Seven Oaks Dam inundation area (see **Figure 5.9-3**). All of the Project's Planning Area A and a portion of Planning Areas 1 and 4 are within the dam inundation area. Failure of the Seven Oaks Dam, in the unlikely situation that there is full capacity of water impounded behind the dam, would release a significant amount of water (approximately 145,600 acre-feet of water during flood conditions assuming the maximum amount of water is impounded); thus, flooding as a result of failure of this dam is a potential, albeit remote, hazard for most of the City. (GP EIR, p. 5.8-14 and GP EIR Figure 5.8-1) If the Project's proposed wastewater treatment plant does not incorporate design features to withstand flooding and/or inundation and sustains damage, water quality could be affected. The Project's grading plan proposes to raise the westerly portions of Planning Areas 1 and 4 between 40 and 50 feet, which would remove habitable structures from the dam inundation zone. All southern exits from the City could be impassable during a major inundation event (GP EIR, p. 5.8-14 and GP EIR Figure 5.8-1); however, the Project site could still be accessed from the south via Newport Avenue and the Garnet Street Bridge. Although, inundation due to dam failure is rare and implementation of the Project will not increase the potential for dam failure (GP EIR, p. 5.8-14 and GP EIR Figure 5.8-1), the Project will provide access to and from the Project site via Newport Avenue and the garnet Street Bridge, elevate residential planning areas outside the dam inundation zone, and implement mitigation measure **MM HYD 4**. Mitigation measure **MM HYD-4** requires the wastewater treatment plant be designed to incorporate design features that withstand flooding, scour, and other inundation-related liabilities.

Inundation by tsunamis occurs only in coastal areas. The City and Project site are too far inland to be affected by a tsunami. Additionally, development of the City and Project site will not increase the potential for tsunamis to occur elsewhere. (GP EIR, p. 5.8-14)

Inundation by seiche is most likely to occur in areas where there are lakes and other enclosed bodies of water, although damage to large water tanks may also result in flooding due to seiches. (GP EIR, p. 5.8-14). The Project does not propose any artificial lakes. The Project will incorporate debris and water quality basins, however, these basins are not designed or intended to contain large quantities of water such that a seiche could result. At full buildout, the Project will include water storage reservoirs

⁸ Seismically induced inundation refers to flooding that occurs when water retention and storage structures, such as dams and above ground water reservoirs, fail due to an earthquake. (GP EIR, p. 5.8-9)

(tanks). These tanks will be designed and constructed in accordance with all applicable local, state, and federal standards and specifications relative to seismic safety. The Project does not include any component that would contribute to the seiching potential of off-site water bodies or tanks.

Inundation by mudflow is a potential hazard in areas at the base of the mountains, such as portions of the City and the Project site. The Santa Ana River and its tributaries, especially those out of the mountainous areas have the potential to carry large amounts of debris, or debris flow, which can plug downstream structures. (GP EIR, p. 5.8-14) The Project's Drainage Master Plan incorporates debris basins that have been sized to accommodate the potential debris from these upland tributaries and retain them on the Project site. Thus, the Project will not contribute to mudflow throughout the City.

For the reasons discussed above, the proposed Project in combination with future **projects will not result in a cumulatively significant impact after implementation of mitigation measures** with regards to inundation from storms, dam failures, tsunamis, seiches, or mudflows.

7.1.12 Land Use and Planning

The geographic scope for land use and planning is the City and its sphere of influence. As discussed in Section 5.10, Land Use and Planning, of this DEIR, the land use applications included as part of the Project includes a General Plan Amendment, the Harmony Specific Plan, Zone Change, Tentative Tract Maps, and a Development Agreement (Section 5.10, pp. 5.10-5-5.10-6).

Implementation of the Project will not develop land uses that divide an established community or conflict with applicable, plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Thus, the Project's impacts on land use and planning will be less than significant and no mitigation is required.

Implementation of the Project in combination with buildout of the rest of the City and its sphere of influence per the General Plan will not divide an established community because such future development is subject to the policies and programs of the General Plan. The General Plan Land Use Element sets forth policies and programs that encourage the preservation or enhancement of the existing community through infill development and open space opportunities, in addition to the development of compatible uses intended to enhance the City's existing character. (GP EIR, p. 5.9-17)

Implementation of the Project in combination with buildout of the rest of the City and its sphere of influence per the General Plan will not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect because the General Plan incorporates policies and programs that address: (i) compatibility with the San Bernardino International Airport and the Redlands Municipal Airport ; (ii) the Southern California Association of Government's Regional Comprehensive Plan and Guide and the Regional Transportation Plan; and (iii) compatibility with any draft Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan. (GP EIR, pp. 5.6-17-5.6-32)

Cumulative impacts with regards to potential conflicts with applicable habitat conservation plans or natural community conservation plan are addressed in Section 7.1.6, Biological Resources.

Because implementation of the Project combined with the future buildout of the City and its Sphere of Influence per the General Plan will not divide an established community, conflict with applicable plans adopted to avoid or mitigate an environmental effect, or conflict with applicable habitat conservation plans or natural community conservation plans, cumulative impacts to land use and planning will be **less than significant**.

7.1.13 Mineral Resources

The geographic scope for mineral resources is the state as mineral resources are considered a statewide resource. A cumulative impact on mineral resources will occur if the Project, when combined with additional development throughout the state, contributes to the loss of availability of: (i) a known mineral resources that would be of value to the region and residents of the state or (ii) a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. As discussed in Section 5.11, Mineral Resources, the Project site was previously used as a borrow site for the Seven Oaks Dam. Mining operations at the Project site were approved for a five-year period commencing in 1993, during which time approximately six million cubic yards of material was removed from the Project site and used in the construction of the Seven Oaks Dam. No mineral mining has taken place on the Project site since 1998 and it is unlikely that future mineral extraction will take place because the General Plan Land Use Element designates the Project site as “Planned Development.”

Buildout of the City and its sphere of influence per the General Plan Land Use Element may result in the development of land containing significant mineral resources impacts. Thus, the General Plan EIR concluded impacts to mineral resources would be significant and unavoidable. (GP EIR, p. 5.10-9) However, because the mineral extraction at the Project site has already occurred and it is unlikely that any future mineral extraction will take place, the Project’s contribution to the loss of mineral resources is not cumulatively considerable. Therefore, the Project’s contribution to the significant and unavoidable cumulative impact to mineral resources is **less than significant**.

7.1.14 Noise

The geographic scope for construction and operational noise impacts is the immediate vicinity of the Project site because noise by definition is a localized phenomenon, which drastically reduces in magnitude as the distance from the noise sources increases. Consequently, only those cumulative projects within the immediate vicinity of the Project will be likely to contribute to cumulative noise impacts resulting from construction or operation. Of these cumulative project sites, the nearest cumulative project to the Project site in the City is Calvary Chapel Church (marked on **Figure 7-1** with a “C”), north of Greenspot Road and west of La Cresta Street, approximately 1.45 miles northwest of the Project site. The nearest cumulative project in the City of Redlands is a 27 residential-unit project (marked on **Figure 7-2** with an “AJ”), west of Sapphire Avenue along Madeira Avenue, approximately 1.2 miles southwest of the Project site. Also, the nearest cumulative project in the City of Yucaipa is a 57 residential-unit project (marked on **Figure 7-3** with an “A”), south of Mill Creek Road/SR-38 at its intersection with Bryant Street, approximately one mile southeast of the Project site. These distances

are too great from the Project as to create a cumulatively considerable impact with regards to construction or operational noise.

Cumulative noise impacts may also occur from when the construction, vehicles, and human activity of the Project are combined with the cumulative projects. Because noise is a localized phenomenon, which drastically reduces in magnitude as the distance from the noise source increases, only those cumulative projects in the vicinity of the Project will be likely to contribute to cumulative construction or stationary-sourced noise. The nearest cumulative project to the Project site is approximately one mile away, which is too great a distance for the Project to contribute to a cumulatively considerable impact with regards to construction or operational noise.

Cumulative noise impacts may also occur when Project-related vehicular trips are combined with vehicular trips from the cumulative projects. This noise may be perceived by receptors along the study area roadways and freeway segments. Therefore, the geographic scope for cumulative traffic noise are the roadway and freeway segments that will be used by Project-related traffic. The cumulative traffic noise condition is the 2035 Buildout Year with Project traffic. The following roadway segments will experience a noise increase greater than 3 dBA, which is considered potentially significant:

Without the State Route 38/Newport Avenue connection --

- Greenspot Road between Alta Vista and New Greenspot Road
- Garnet Avenue between Newport Avenue and State Route 38/Mill Creek Road

With the State Route 38/Newport Avenue connection --

- Greenspot Road between Alta Vista and New Greenspot Road
- Garnet Avenue between Newport Avenue and State Route 38/Mill Creek Road
- New Greenspot Road south of Greenspot Road
- Newport Avenue between Garnet Avenue and State Route 38/Mill Creek Road

As discussed in Section 5.12, Noise, the potentially significant cumulative impacts from traffic noise will be reduced to less than significant through the implementation of mitigation measure **MM NOI 1**, which requires preparation of a Final Noise Analysis for each development. The Final Noise Study will identify what, if any noise shielding, attenuation or other forms of mitigation may be required. With the appropriate combination of mitigation measures, which may include: walls, fences, alternative pavement surfaces, set-backs, sound insulation for affected residences, changes in screening materials, complete enclosure of noise generating equipment (at the non-residential uses), increased setbacks, reorienting parking lots, or other measures as documented by the Final Noise Study, cumulative noise impacts will be **less than significant with mitigation**.

7.1.15 Population and Housing

The geographic scope for population and housing is the City. Build-out of the City's General Plan will result in a potential 20,201 single-family residential units and 4,162 multi-family residential units, which is anticipated to result in a total of 69,582 persons residing in the City (GP EIR, p. 10-1).

The Project proposes between 3,467 and 3,632 dwelling units with and without the Neighborhood Commercial Overlay, respectively, which are more dwelling units than envisioned in the General Plan for the Project site. Using the City's average household size of 3.41 persons per household from the *2012 Draft Housing Element*, the Project's population would range from 11,822 to 12,385. The Project's population comprises between 0.55% and 0.52% of the forecasted population for San Bernardino County and between 21.13% and 20.17% of the forecasted population for the City in 2020. In 2035, the Project's population will comprise between 0.45% and 0.43 % of the forecasted population for San Bernardino County and between 18.40% and 17.57% of the forecasted population for the City.

The General Plan did not anticipate the amount of housing proposed by the Harmony Specific Plan even though the General Plan designated the entire site for Planned Development. However, the Project includes a General Plan Amendment that reflects the proposed Project density. Subsequent to the adoption of the General Plan, the Southern California Association of Governments (SCAG) began the process of updating their regional transportation plan (RTP) and the new planning process of incorporating a "sustainable communities strategy" (SCS) pursuant to SB 375. Because the City included the development of the Harmony Specific Plan in the data provided to SCAG, the Project has been included and evaluated within other regional plans. Therefore, the Project is consistent with the SCAG RTP/SCS. In any event, the Project includes a General Plan Amendment which will revise Table 2.1 of the General Plan so that the amount of housing included in the General Plan for the City is consistent with the additional housing that will be provided within the Specific Plan area. With this amendment the City's General Plan will be fully consistent with the Harmony Specific Plan. Therefore, the Project's contribution to population and housing is not cumulatively considerable and impacts are **less than significant**.

7.1.16 Public Services

Public services include fire protection and emergency medical services, provided by the California Department of Forestry and Fire Protection (Cal Fire); police services, provided by Highland Police Department (via San Bernardino County Sheriff's Department); schools, provided by Redlands Unified School District (RUSD); and libraries, provided by the San Bernardino County Library system.⁹ The cumulative impact area for public services is the service area of each of the service providers. The Project, combined with new development within each service area, is expected to result in new service calls for emergency protection services, generate additional students that will attend public school, and generate new library patrons.

The geographic scope for cumulative impact impacts for fire and police protection services is the City. Project development combined with buildout per the General Plan has the potential to result in new or expanded fire station facilities. As discussed in Section 5.14, Public Services, and required by mitigation measure **MM PS 1**, the Project will provide a 1.5-acre site for the development of a new fire station, to be operated by Cal Fire, to meet emergency response and fire suppression demand in the Project area.

⁹ The issue of parks was analyzed in Section 5.16, Recreations. Cumulative impacts to parks are addressed in Section 7.17.15.

As discussed in Section 5.14, Public Services, the Project is estimated to generate the need for approximately nine additional sworn officers (based on the General Plan's desired service level ratio). Buildout per the General Plan Land Use Element would result in the need for 30 additional police officers, which would nearly double the police force. (GP EIR, p. 5.13-10) As with all new development within the City, the Project proponent will pay the City's Development Impact Fees specifically related to capital improvements for police protection services. These fees will be used to purchase land and construct or expand police station facilities as well as to acquire additional equipment.

With regards to cumulative impacts to fire and police protection, the General Plan EIR concluded that with implementation of existing regulatory requirements, which include the payment of impact fees, and General Plan policies, impacts to these services will be **less than significant**. (GP EIR, p. 5.13-9)

The Project when combined with future development within the boundaries of the RUSD will generate students thus creating the need for additional school facilities. As discussed in Section 5.14, the Project provides for the development of one elementary school within the Project site. However, the Project and as all future residential and/or commercial developments within RUSD's boundaries are required by state law to pay school mitigation fees pursuant to California Government Code 65995.5-65995.7 and 66000 *et seq.* For CEQA purposes, pursuant to state law, payment of school mitigation fees is considered to reduce impacts to school facilities **to less than significant**. (GP EIR, p. 5.13-19)

Development of the Project combined with buildout of the General Plan has the potential to generate library patrons and, will increase the demand for library services and volumes. As discussed in Section 5.14, the Project will address the generated demand for library services through the payment of Development Impact Fees specifically for library facilities. These fees provide the San Bernardino County Library system with resources necessary to purchase land and construct or expand library facilities as well as to acquire additional volumes.

The General Plan EIR concluded that although General Plan buildout could result in a 3,468 square-foot facility deficiency in library space, the City has a local funding mechanism for new library services in the form of its Development Impact Fee fund and a variety of State and Federal grants, which are used for the maintenance and construction of new library facilities and that impacts relating to library services will be **less than significant**. (GP EIR, pp. 5.13-20-5.13-21)

Therefore, for the reasons stated above, the proposed Project combined with future development will result in **less than significant cumulative impacts** to fire suppression, police protection, schools, and library services.

7.1.17 Recreation

Park and recreation services are provided by the City, thus, the geographic scope for recreation is the City. As discussed in Section 5.15, Recreation, the Project includes the construction of approximately 111 acres of parkland, 4.3 acres of private recreation space, 112 acres of community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes. This represents 64.4 acres of parkland per 1,000 residents, which far exceeds the City standards of 2.5 acres of parkland per 1,000

residents. Thus, the proposed Project is providing a beneficial impact to the City by providing parkland in excess of City standards.

According to the General Plan EIR, excluding development in the East Highlands Ranch Area, based on the City's standards for parkland, the City has a parkland deficiency of approximately 35 acres (consisting of 13.1 acres developed parkland and 21.4 acres of undeveloped parkland), mainly at the neighborhood and community park levels. (GP EIR, pp. 5.14-1 and 5.14-14) Development of the proposed Project in conjunction with buildout of the General Plan will result in the need for additional parkland. However, as with the Project, these other cumulative development projects are subject to comply with the applicable plans and associated Development Impact Fees, which are designed to mitigate potential impacts to recreation. Moreover, these cumulative projects will be subject to compliance with the City's General Plan, and the General Plan EIR determined that no significant impacts to recreation would result from build-out of the General Plan upon implementation of the regulatory requirements and a project's compliance with the General Plan's policies and programs. (GP EIR, p. 5.21) Therefore, cumulative impacts to park and recreation facilities will be **less than significant**.

7.1.18 Transportation/Traffic

The geographic context for transportation/traffic impacts are the 40 intersections shown on Figure 5 – Study Area Intersections of the *Traffic Impact Analysis, Harmony Specific Plan, City of Highland, San Bernardino County, California*, October 11, 2013 (the TIA) and the following freeway segments:

Segments on I-10:

- Between SR-210 Interchange and Orange Street;
- Between Orange Street and 6th Street;
- Between 6th Street and University Street; and
- Between Live Oak Canyon Road and County Line Road
- All segments between Beaumont Avenue and County Line Road;
- All segments between the I-10/SR-210 Interchange and Milliken Avenue

Segments on SR-210:

- Between I-10 and San Bernardino Avenue;
- Between 5th Street/Greenspot Road and San Bernardino Avenue; and
- Between Base Line and 5th Street/Greenspot Road
- All segments between Base Line and the SR-210/SR-605 Interchange

Segments on I-215:

- All segments between Palm Avenue and the I-215/SR-210 Interchange;
- All segments between the I-215/I-10 Interchange and I-215/SR-60 Interchange

Segments on SR 91:

- All segments between the SR-91/I-215 Interchange and Arlington Avenue.

The cumulative traffic condition includes trips from: the cumulative projects in the cities of Highland, Redlands, and Yucaipa¹⁰ (see **Table 7-A** and **Figure 7-1**, **Figure 7-2**, and **Figure 7-3**), ambient growth to year 2035 and Project buildout. At buildout, the Project is anticipated to generate 33,749 daily external trips. **Table 7-B – Required Improvements** identifies the study area intersections that will operate at an unacceptable level of service in the cumulative traffic condition and the improvements needed for the intersection to operate at an acceptable level of service. (Refer to **Table 5.16-J – Summary of Required Intersection Improvements** for the LOS Standard, LOS without improvements and LOS with improvements.)

Table 7-B – Required Improvements

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
<i>Long Term (2035) Conditions with the Project (without Newport Avenue/SR-38 connection)</i>					
5. Palm Avenue/5th Street	Highland	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane.	-	Add NBR	-

¹⁰ There are no projects planned in either the City of San Bernardino or the unincorporated area of San Bernardino County. (LSA, p. 14)

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
7. SR-210 Eastbound Ramps/5th St-Greenspot Road	Caltrans	Construct 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to 2nd exclusive SBL turn lane. Re-stripe SBR turn lane to shared SBT/R lane. Construct 3rd EBT lane north of existing EBT lanes. Construct 4th EBT lane in place of existing EBR turn lane. Construct EBR turn lane south of 4th EBT lane. Re-stripe 1st WBL turn pocket as EB receiving lane. Re-stripe 1st WBT lane as 2nd WBL turn lane. Construct 2nd WBT lane (extend to upstream intersection) and realign both WB receiving lanes.	Interchange Reconstruction	-	-
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	Re-stripe NBL turn line extension to align 2nd NBL turn lane with northernmost WB receiving lane. Construct 3rd EBT lane (extend to upstream intersection). Convert painted chevrons south of WBR turn lane to 3rd WBT lane and realign all WBT approach lanes to match WB receiving lanes.	Interchange Reconstruction	-	-

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
13. Boulder Avenue/Greenspot Road	Highland	Add NBR turn overlap phase. Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane. Construct 3rd WBT lane.	WBT	Add EBT and overlap phasing to NBR	-
15. Church Street/Greenspot Road	Highland	Add SBR turn overlap phase. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane.	-	-	Add overlap phasing to SBR and WBR.
16. Weaver Street/Greenspot Road	Highland	Install a traffic signal.	-	-	Install a traffic signal.
17. Alta Vista/Greenspot Road	Highland	Install a traffic signal.	-	-	Install a traffic signal.
18. Greenspot Road-Garnet Avenue/Newport Avenue	Highland	Install a traffic signal. Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	Add a NBT	-	Install a traffic signal. Add WBL.
19. Orange Street/SR-38	Redlands /Caltrans	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane. Construct 2nd WBT lane and 2nd WB receiving lane. Construct 2nd WBL turn lane.	Add a NBT, WBL, and WBT	-	-

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane.	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	Install a traffic signal	Interchange Reconstruction	-	-
32. Garnet Avenue/SR-38	San Bernardino County /Caltrans	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Install 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.A	Install a traffic signal. Add a WBT, SBL, and SBR with overlap phasing	-	Add EBL, and WBR with overlap phasing

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
33. Bryant Street/SR-38	Yucaipa /Caltrans	Install a traffic signal. Construct 1st exclusive EBR turn lane. Re-stripe shared EBT/R lane to exclusive EBT lane.	Install a traffic signal. Add an EBR	-	-
34. Bryant Street/Oak Glen Road	Yucaipa	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase.	-	-	Stripe dedicated SB right-turn lane and add overlap phasing.
36. Sand Canyon Road-14th Street/Yucaipa Boulevard	Yucaipa	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Add WBR turn overlap phase.	Add a NBL	-	Re-stripe SBTL to SBT and NBTL to NBT, WBR with overlap phasing. Convert NB/SB Split Phase to Protected and add a WBR with overlap phasing.
39. New Greenspot Road/Old Greenspot Road	Highland	Install a traffic signal. Construct 2nd SBT lane.	Add SBT	-	Install a traffic signal.

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
Long Term (2035) Conditions with the Project (with Newport Avenue/SR-38 connection)					
5. Palm Avenue/5th Street	Highland	Construct 1st exclusive NBR turn lane. Re-stripe shared NBT/R lane to exclusive NBT lane.	-	Add NBR.	-
7. SR-210 Eastbound Ramps/5th Street-Greenspot Road	Caltrans	Construct 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to 2nd exclusive SBL turn lane. Re-stripe SBR turn lane to shared SBT/R lane. Construct 3rd EBT lane north of existing EBT lanes. Construct 4th EBT lane in place of existing EBR turn lane. Construct EBR turn lane south of 4th EBT lane. Re-stripe 1st WBL turn pocket as EB receiving lane. Re-stripe 1st WBT lane as 2nd WBL turn lane. Construct 2nd WBT lane (extend to upstream intersection) and realign both WB receiving lanes.	Interchange Reconstruction	-	-

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
8. SR-210 Westbound Ramps/Greenspot Road	Caltrans	Re-stripe NBL turn line extension to align 2nd NBL turn lane with northernmost WB receiving lane. Construct 3rd EBT lane (extend to upstream intersection). Convert painted chevrons south of WBR turn lane to 3rd WBT lane and realign all WBT approach lanes to match WB receiving lanes.	Interchange Reconstruction	-	-
13. Boulder Avenue/Greenspot Road	Highland	Convert painted chevrons south of 2nd EBT lane to 3rd EBT lane and construct 3rd EB receiving lane.	-	Add EBT.	-
15. Church Street/Greenspot Road	Highland	Add SBR turn overlap phase. Construct 1st exclusive WBR turn lane. Re-stripe shared WBT/R lane to exclusive WBT lane.	-	-	Add overlap phasing to SBR and WBR.
16. Weaver Street/Greenspot Road	Highland	Install a traffic signal.	-	-	Install a traffic signal.
17. Alta Vista/Greenspot Road	Highland	Install a traffic signal.	-	-	Install a traffic signal.
18. Greenspot Road-Garnet Avenue/Newport Avenue	Highland	Install a traffic signal. Construct 2nd SB receiving lane. Construct 1st exclusive WBL turn lane.	-	-	Install a traffic signal. Add a WBL

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
19. Orange Street/SR-38	Redlands /Caltrans	Construct 2nd NBT lane and 2nd NB receiving lane. Construct 2nd SB receiving lane. Construct 2nd WBT lane and 2nd WB receiving lane. Construct 2nd WBL turn lane.	Add a NBT, WBL, and WBT	-	-
26. University Street/I-10 Westbound On-Ramp-Central Avenue	Caltrans	Install a traffic signal. Construct 1st exclusive NBL turn lane. Construct 2nd NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Construct 2nd WB receiving lane..	Interchange Reconstruction	-	-
27. University Street/I-10 Eastbound Off-Ramp	Caltrans	Install a traffic signal.	Interchange Reconstruction	-	-

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
32. Garnet Avenue/SR-38	San Bernardino County /Caltrans	Install a traffic signal with protected-permitted phasing on the eastbound approach. Construct 1st exclusive SBR turn lane. Re-stripe shared SBL/T/R lane to shared SBL/T lane. Add SBR turn overlap phase. Install 1st exclusive SBL turn lane. Re-stripe shared SBL/T lane to exclusive SBT lane. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T/R lane to shared EBT/R lane. Construct shared WBL/T lane and 2nd WB receiving lane. Re-stripe shared WBT/R lane to exclusive WBT lane. Construct 1st exclusive WBR turn lane. Add WBR turn overlap phase.	Install a traffic signal. Add SBL, WBT and SBR with overlap phasing.	-	Add EBL, WBR with overlap phasing
33. Bryant Street/SR-38	Yucaipa /Caltrans	Install a traffic signal. Construct 1st exclusive EBR turn lane. Re-stripe shared EBT/R lane to exclusive EBT lane.	Install a traffic signal. Add an EBR	-	-
34. Bryant Street/Oak Glen Road	Yucaipa	Stripe defacto SBR turn lane as exclusive SBR turn lane. Add SBR turn overlap phase..	-	-	Stripe SB right-turn lane and add overlap phasing.

Intersection	Jurisdiction	Total Required Improvements	Programmed Improvements		
			SANBAG Nexus Study	Local General Plans	Not Covered by Nexus Study or General Plan
36. Sand Canyon Road-14th Street/Yucaipa Boulevard	Yucaipa	Convert NB/SB split phase to protected phase. Construct 1st exclusive NBL turn lane. Re-stripe shared NBL/T lane to exclusive NBT lane. Re-stripe shared SBL/T lane to exclusive SBT lane.	Add a NBL	-	Re-stripe SBTL to SBT and re-stripe NBTL to NBT (Convert NB/SB Split Phase to Protected).
39. (New) Greenspot Road/(Old) Greenspot Road	Highland	Install a traffic signal. Construct 2nd SBT lane.	Add SBT	-	Install a traffic signal.
40. Newport Avenue/SR-38	Redlands /Caltrans	Install a traffic signal. Construct 1st exclusive EBL turn lane. Re-stripe shared EBL/T lane to exclusive EBT lane.	Install a traffic signal. Add an EBL.	-	-

Notes: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
L = Left-Turn Lane; T = Through Lane; R = Right-Turn Lane
DNE = Does not exist
Source: LSA, Tables I through Q, and T through JJ

The Project will implement mitigation measure **MM TRANS 1**, which requires payment of fair share fees to be used for the construction of the off-site improvements. However, since fees are not collected until development occurs, the timing of the construction of the needed improvements is uncertain. Thus, it is possible that the required improvements may not be constructed in time to mitigate the Project’s impacts upon off-site intersections to acceptable levels. **Therefore, although the Project-related intersection improvements will be mitigated, they remain significant until such time as the improvements are completed.** Given that there is no assurance that all improvements that may be suggested in this DEIR to be constructed in other jurisdictions will in fact be fully funded and constructed, or constructed prior to the time such improvements are needed to mitigate the impacts of this Project, these Project impacts should be regarded as significant and unmitigated.

The Project will impact regional freeways within five miles and beyond five miles of the site. Because these freeway facilities are under the exclusive control of Caltrans, the timing and funding of improvements is unknown and, neither the City, as lead agency, nor the Project proponent can contribute fair share fees or implement the required improvements which must be designed and constructed by Caltrans. For this reason, impacts to the freeway facilities both within five miles and beyond five miles of the Project site will be **significant and unavoidable until improvements are constructed.**

7.1.19 Utilities and Service Systems

Utilities and Service Systems include water, wastewater, drainage, solid waste disposal, and other dry utilities, e.g., electricity, natural gas, and cabling/telecommunications services. The geographic context for cumulative impacts for each of these services is different as discussed in the following paragraphs.

Water Supply and Infrastructure

Water service to the Project is provided by EVWD, thus the geographic context for water supply and infrastructure is the EVWD service area. EVWD obtains water from three sources: groundwater from the SBBA, local surface water from the Santa Ana River, and imported water from the State Water Project (SWP) via the SBVMWD. Development of the Project and other new development within the EVWD service area will require water. As discussed in Section 7.1.11 above, the 2010 RUWMP concluded that water supplies will meet or exceed water demands in a normal year, a single dry year, and a multiple dry year period. (2010 RUWMP, pp. ES-6—ES-8, 2-6, 7-30.) Thus, cumulative impacts regarding water supply will be **less than significant**.

With regards to infrastructure, impacts resulting from the construction of new on-site facilities have been evaluated in Section 5 of this DEIR. Impacts associated with off-site facilities are limited to existing road right-of-way and previously disturbed portions of Greenspot Road and as such is would not contribute to a cumulatively considerable impact.

Wastewater Treatment

The Project proposes an on-site wastewater treatment plant to be constructed as part of the Project; therefore, the geographic context for cumulative impacts would be the Harmony Specific Plan. Because all Project-generated wastewater is being treated on-site, there would be no cumulative impacts in this regard. During the initial building phase when there will be insufficient sewage generated to operate the on-site wastewater treatment plant, the Project wastewater is treated at the Margaret H. Chandler Water Reclamation Plant (WRP), the geographic context would be EVWD's service area because EVWD has a contractual arrangement with the San Bernardino Municipal Water Department (SBMWD) for treatment. Current capacity at the WRP is 33 million gallons per day (mdg) and the current average flow is approximately 26 mgd (29,100 AFY) (2010 RUWMP, p. 7-40). The 2010 RUWMP anticipated flows to increase 5.4 mdg by 2035,¹¹ which includes full buildout of the Project (2010 RUWMP, p. 10-33). Since the anticipated 2035 flows (26 mgd existing + 5.4 future mgd = 31.4 mgd) are less than the treatment capacity of the WRP (33 mgd), cumulative impacts will be **less than significant**.

With regards to infrastructure, impacts resulting from the construction of the on-site sewer collection facilities have been evaluated in Section 5 of this DEIR. Impacts associated with off-site facilities are limited to existing road right-of-way and previously disturbed portions of Greenspot Road and as such is would not contribute to a cumulatively considerable impact.

Solid Waste

Solid waste generated within the City is disposed of at landfills operated by the County of San Bernardino Solid Waste Management Division (SWMD); thus the geographic context for cumulative impacts is the San Bernardino County. SWMD operates and manages 6 regional landfills. Solid waste

¹¹ The flows in 2035 are projected to be 35,216 AFY (31.4 mgd).

generated within the City is disposed of at the Colton, Mid-Valley, and San Timoteo sanitary landfills. Development of the Project and other development throughout San Bernardino County will increase the amount of solid waste requiring disposal. As required by Assembly Bill (AB) 939 and AB 341, every city and county in California must comply with certain solid waste diversion rates. Assuming the required diversion is achieved, there is adequate capacity at the solid waste disposal sites that serve the City (GP EIR, p. 5.16-15). Therefore, cumulative impacts to solid waste will be **less than significant**.

Electric, Gas, and Telecommunications Utilities

SCE is the electrical provider for the City. Implementation of the Project along with other development within SCE's service area will result in a permanent and continued use of electricity. SCE has indicated that electrical facilities have been planned to keep pace with anticipated demand within the City (GP EIR, p. 5.16-16) and its service area, and has provided a "will serve" letter for the Project (Appendix N.1).

SCG provides natural gas service to the City. Implementation of the Project along with other development within SCG's service area will result in a permanent and continued use of natural gas. SCG has identified the current distribution system is able to meet area demand as well as future anticipated population growth within the City (GP EIR, p. 5.16-16).

Telecommunications services are provided to the City by Verizon and Time-Warner. Implementation of the Project along with other development within the service area of these providers will result in a need for new facilities. Traditionally these service facilities are installed or upgraded by the appropriate service providers as new subdivisions are built and installation is supported by the service fees customers pay to have these services.

Therefore, for the reasons stated above, cumulative impacts to electric, gas, and telecommunications utilities will be **less than significant**.

7.2 Unavoidable Adverse Impacts

This topic is intended to address any significant impacts that cannot be mitigated to below a level of significance (State *CEQA Guidelines* Section 15126.2). Specific impacts which cannot be avoided or eliminated if the Project is implemented have been discussed in detail throughout Section 5.0, Potentially Significant Environmental Effects. A summary of the areas in which impacts could not be reduced to a level below significance are summarized below.

Air Quality

Implementation of the Project will result in significant and unavoidable impacts during the short-term construction and long-term operation of the Project due to estimates emissions exceeding the applicable SCAQMD thresholds.

Transportation/Traffic

Implementation of the Project will result in significant and unavoidable impacts to regional freeway facilities within five miles and beyond five miles of the site because these freeway facilities are under the exclusive control of Caltrans and neither the City, as lead agency, nor the Project proponent can contribute fair share fees or design and construct the required improvements.

7.3 Growth Inducing Impacts

According to State *CEQA Guidelines* Section 15126.2 (d), a project may foster economic or population growth, or additional housing, either indirectly or directly, in a geographical area if it meets any one of the following criteria:

- A project would remove obstacles to population growth;
- Increases in the population may tax existing community service facilities, causing significant environmental effects; or
- A project would encourage and facilitate other activities that could significantly affect the environment.

The Project will foster population and economic growth directly through the development of between 3,467 and 3,632 dwelling units, which would yield a population ranging from 11,822 to 12,385 with and without the Neighborhood Commercial Overlay, respectively. The Project also includes between 62,073 to 225,423 square feet of neighborhood commercial, with and without the Neighborhood Commercial Overlay, respectively, which has the potential to create a range of approximately 124 to 451 full time employees. The Project contains a General Plan Amendment that would reflect the density proposed as part of the Project. As discussed in Section 5.13, Population and Housing, the Project's growth was accounted for in the Southern California Association of Governments (SCAG) Regional Transportation Plan /Sustainable Communities Strategy ((RTP/SCS) pursuant to SB 375. Thus, the Project would not induce substantial growth beyond what was previously planned for in regional plans such as the RTP/SCS.

Indirectly, the Project will extend roadways, water and sewer service, and other utilities (infrastructure) into the Project site. As the Project site is on the eastern most end of the City's jurisdiction and site is designated for Planned Development, extension of these facilities within the Project site would not indirectly induce substantial population growth. Additionally, the areas to the south and south west of the site are already developed with homes and agricultural uses and areas to the north are bordered by the San Bernardino National Forest. Additionally, this Project, in conjunction with the anticipated construction of the new Greenspot Bridge over Santa Ana River (not part of the Project), will improve upon the existing roadway network to and from the site and immediate surrounding area by way of (New) Greenspot Road, which will be designed in the northwestern half as a Modified Major Highway A and the southeastern half as a Modified Special Highway B, that will effectively bypass the existing narrow 2-lane undivided (Old) Greenspot Road/Florida Street as well as provide connectivity to a new roadway circulation system within the Project site.¹² Moreover, the new Greenspot Road Bridge will be designed to the Modified Major Highway A standards as well, which constitutes a major improvement over the existing, very narrow 2-lane Santa Ana River Bridge. These roadway improvements are

¹² Modified Major Highway A will include a 104-foot right-of-way carrying regional traffic to and from the Project site and will also include two 8-foot parking lanes on each side and two travel lanes in each direction and a 12-foot median swale. Modified Special Highway B will include a 104-foot right-of-way and one 20-foot travel lane in each direction separated by a 24-foot median with a meandering swale with space for trees.

intended to facilitate development on site and address the anticipated residents and guests that would be generated by the Project, but also is not expected to facilitate additional off-site development.

Potential Project-induced growth off site will generally be limited to the area southwest of the Project site (i.e., south of Tres Lagos Street and west of Emerald Avenue) due to geographical limitations to the San Bernardino National Forest north and east of the Project site area, and the physical land barriers created by Santa Ana River to the north and west, and Mill Creek to the southeast and south of the Project site. It may be possible that the medium-density residential subdivisions that occur north of the east-west span of Greenspot Road and north of the Santa Ana River may continue the eastward development trend along the base of the San Bernardino Mountains and north of Greenspot Road. However, development in these areas would require General Plan Amendments and change in zoning with the City and San Bernardino County, and would be subject to project-specific CEQA review.

7.4 Irreversible Environmental Changes

Section 15126.2(c) of the CEQA Guidelines requires that an 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 development of the Project site over the next 20 years or so. Implementation of the proposed Project would allow for the development of a mix of residential uses, neighborhood commercial, parks, and public facilities (elementary school and wastewater treatment plant) per the Harmony Specific Plan.

Development per the Harmony Specific Plan will require the commitment of approximately 834 acres of vacant land. Project-related construction activities will entail the commitment of non-renewable 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, and sewer and water services) would also be required. The energy and social service commitments would be long-term obligations because given the financial and material investments that would be required of the Project applicant and the City it is unlikely that the Project site would be returned to its original condition once it has been developed.

7.5 Consistency with Regional Plans

State *CEQA Guidelines* Section 15125(d) also requires an EIR to “to discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans.” The regional plans applicable to the proposed Project are: the City of Highland General Plan, the SCAG RTP/SCS, the San Bernardino County Congestion Management Plan (CMP), and the Air Quality Management Plan (AQMP). The following table identifies the location in which each of these plans is discussed in the DEIR.

Table 7-C – Location in which DEIR Consistency with Regional Plans is Discussed

Plan	Location of Discussion
City of Highland General Plan	Environmental impact analysis section for each environmental issue under the heading “Related Regulations”
SCAG RTP/SCS	Section 6.0, Regional Consistency
CMP	Section 5.16, Transportation/Traffic
AQMP	Section 5.3, Air Quality, Related Regulations, Criteria Air Pollutants

7.6 References

The following references were used in the preparation of this section of the DEIR:

- GP EIR City of Highland, *General Plan Update Draft Environmental Impact Report*, September 2005. (Available at the City of Highland)
- GP Findings City of Highland, *Findings of Fact and Statement of Overriding Considerations, City of Highland General Plan and Development Code Update Environmental Impact Report*, January 2006. (Available at the City of Highland.)
- LSA LSA Associates, Inc., *Traffic Impact Analysis, Harmony Specific Plan, City of Highland, San Bernardino County, California*, March 2014. (Appendix M)
- RBF(a) RBF Consulting, *Habitat Assessment Greenspot Property*, March 2014. (Appendix D.1)
- RBF(b) RBF Consulting, *Harmony Specific Plan, Sewer Analysis*, January 8, 2014. (Appendix I.4)
- RBF(c) RBF Consulting, *Harmony Specific Plan, Domestic Water System*, November 5, 2014. (Appendix I.2)
- 2010 RUWMP San Bernardino Valley Municipal Water District, *Amended Draft 2010 San Bernardino Valley Regional Urban Water Management Plan*, September 2012. (Available at http://webserver.sbvmd.com/imgs/reports/Amended_RUWMP/FINAL_Am_RUWMP.pdf, accessed June 2013.)
- SBGP County of San Bernardino, *2007 General Plan*, March 2007. (Available at the County of San Bernardino Land Use Services Department.)
- SBGP EIR County of San Bernardino, *2006 General Plan Program, Final Environmental Impact Report and Appendices*, February 2007. (Available at the County of San Bernardino Land Use Services Department.)

WAP San Bernardino County Stormwater Program, *Watershed Action Plan*, January 29, 2011. (Available at http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/docs/sbpermit/wap/Draft_WAP_Phase_1.pdf, accessed June 2013.)

SECTION 8 – Alternatives to the Proposed Project

The following discussion considers alternatives to implementation of the project. The discussion examines the potential environmental impacts resulting from each alternative. Through comparisons of these alternatives to the project, the relative advantage(s) of each can be weighed and evaluated.

State *CEQA Guidelines* Section 15126.6 identifies the parameters within which consideration and discussion of alternatives to the proposed project should occur. As stated in this section of the guidelines, alternatives must focus on those that are potentially feasible and which attain most of the basic objectives of the project.

8.1 Project Objectives

A clear statement of project objectives allows for the analysis of reasonable alternatives to the proposed project. A range of reasonable alternatives, both on- and off-site, that would feasibly attain most of the basic project objectives, while avoiding or substantially lessening the significant effects of the project, must be analyzed per State *CEQA Guidelines* Section 15126.6.

As stated in Section 3.5 of this DEIR, 12 objectives have been identified for the Project:

- Build Communities with environmental stewardship and sustainability in mind through measures that protect water resources and promote water conservation.
- Entitle the Orange County-owned former borrow site for the Seven Oaks Dam with revenue generating uses that would provide funds to the County for regional infrastructure investment.
- Provide a master-planned community that emphasizes its natural setting and provides multiple opportunities for its residents and the general public to enjoy the open space through parks, trails, protection of natural open space, and provision of other recreational amenities that provide access to the mountains and Highland Beach.
- Develop a community consistent with the General Plan Land Use goal of creating an unique master-planned community that brings together residential and commercial development with open space protection, recreation and trail amenities.
- Provide a diversity of housing types to suit housing needs at all stages of life: from first-time homebuyers to families with children, empty-nesters and singles to further the General Plan goal of providing a variety of housing opportunities.
- Provide high quality new housing to enhance and stimulate commercial development in the City of Highland.
- Develop infrastructure phased with Project development and complete infrastructure connections for roads, sewers, utilities, drainage facilities, and water in the east Highland area.
- Maximize open space and protect sensitive habitat areas, ridges, canyons and wildlife corridors through, among other measures, buffers designed to provide a natural edge for development adjacent to natural public open space.

- Minimize reliance on the automobile through the construction of alternative modes of travel through the community such as biking trails and walkways that link residential, parks, and commercial areas.
- Implement the City’s General Plan Land Use Goals to develop a land use plan that responds to the unique environmental conditions of the area.
- Ensure public safety for new and existing residents of east Highland by providing adequate police and fire services to serve the community.
- Provide circulation improvements that not only serve the needs of Harmony community, but provide region-wide benefits.

8.2 Significant Unavoidable Impacts

The Project’s potential impacts to the following environmental topics considered in the DEIR are significant and unavoidable: Air Quality, and cumulative impacts to Air Quality and Traffic/Transportation.

8.3 Less Than Significant Impacts and Significant Impacts which can be Mitigated

The Project’s potential impacts to the following environmental topics considered in the DEIR are less than significant and do not require mitigation measures: Land Use and Planning, Mineral Resources, Population and Housing, Recreation, Utilities and Service Systems. The Project’s potential impacts to the following environmental topics considered in the DEIR would be reduced to less than significant levels with the incorporation of mitigation measures identified in this DEIR: Aesthetics, Agricultural Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology/Water Quality, Noise, Public Services, and Project-specific impacts related to Transportation/Traffic.

8.4 Rationale for Alternative Selection

State *CEQA Guidelines* Section 15126.6(a) requires that an EIR “...describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” According to this section of the State *CEQA Guidelines*, “...an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.” An EIR is not required to consider alternatives which are infeasible. The City, as lead agency, is responsible for selecting a range of project alternatives for examination, and there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the “rule of reason” (State *CEQA Guidelines* Section 15126.6 (a)). 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 an alternative. (State *CEQA Guidelines* Section 15126.6 (f)(1)).

With respect to the selection of alternatives to be considered in an EIR, State *CEQA Guidelines* Section 15126.6(b) states "...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." That is, each alternative must be capable of avoiding or substantially lessening any significant effects of the proposed Project. The proposed Project was found to have less than significant impacts in the following areas: Land Use and Planning, Mineral Resources, Population and Housing, Recreation, and Utilities and Service Systems. With respect to Aesthetics, Agricultural Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology/Water Quality, Noise, Public Services, and Project-specific impacts related to Transportation/Traffic, potential impacts can be reduced to a less than significant level with the incorporation of mitigation measures identified in the DEIR.

The rationale for selecting the alternatives to be evaluated, and a discussion of the "no project" alternative are also required (State *CEQA Guidelines*, Section 15126.6(e)). The "no project" alternative could take two forms: 1) No change from the existing uses (vacant land); or 2) Development into already approved land uses. The City's General Plan land use designation for the site is Planned Development (PD). Since both "no project" alternatives are significantly different, both forms of the No Project alternative will be addressed in this section.

The remaining alternatives evaluated in this DEIR were selected based on their ability reduce or avoid air quality and cumulative traffic impacts.

8.5 Alternatives Considered by Lead Agency but Rejected from Detailed Consideration

State *CEQA Guidelines* Section 15126.6(c) specify that an EIR should identify alternatives that were considered by the lead agency, but were rejected during the scoping process and identify the reasons for eliminating the alternatives from further consideration. Section 15126.6(c) further indicates that a lead agency may eliminate an alternative from detailed consideration in an EIR if it fails to meet the basic project objectives, is infeasible, or does not avoid significant environmental impacts. Four such alternatives were considered and rejected by the City, as discussed below.

8.5.1 Alternate Site

Pursuant to CEQA, an alternative analysis must include consideration of alternative sites if a different site would avoid or reduce impacts. As several of the objectives relate to development within the City of Highland, alternative sites within the City were investigated. No similar acreage of PD available in the City. Further, one of the Project objectives is to make economic use of the property the County of Orange received as part of the Seven Oaks Dam project. The County of Orange owns no other land in the area. Therefore, because the City doesn't offer any similar vacant land and the County of Orange owns no other sizeable land in the area, development on an alternate site is not feasible and a more

meaningful discussion of alternative sites is deemed unnecessary. In addition, it would not appear that alternative sites would offer environmental advantages that could substantially reduce or eliminate the identified remaining unmitigated significant adverse impacts of the Project.

8.5.2 Mineral Resource Alternative

An alternative that develops the site for mineral resource extraction would reduce the significant air quality impacts as well cumulative traffic impacts. However, this use would not be consistent with the current General Plan land use designation of Planned Development (PD) nor would it meet the majority of the Project objectives. Further, since a portion of the Project site was previously mined for the construction of the Seven Oaks Dam, it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Therefore, mining the site for mineral resources is an infeasible alternative.

8.5.3 Reduced Construction Equipment Alternative

Reducing the number of pieces of construction equipment or limiting the daily hours of operation would reduce the diesel exhaust emissions generated during Project construction. As shown in Table 5.3-F of Section 5.3, Air Quality, of this DEIR, Project construction exceeds SCAQMD construction thresholds for VOC and NO_x, the maximum daily NO_x emissions are 283 pounds/day (lb/day) and the corresponding threshold is 100 lb/day. Therefore, the construction equipment or hours of operation would need to be reduced by more than two-thirds in order to be less than significant. This would extend the construction duration as the rate of progress would be reduced. Extending the construction at this level would result in additional impacts, such as greenhouse gas emissions. Greenhouse gas emissions are estimated on an annual basis. Thus, extending the construction duration to reduce criteria pollutant emission would increase greenhouse gas emissions.

8.6 Description of Alternatives

This section of the DEIR presents the analysis of four alternatives in comparison to the potential environmental effects associated with the proposed Project. **Table 8-A – Alternatives Summary**, provides a summary of the proposed development for each alternative. In accordance with State *CEQA Guidelines* Section 15126.6(d), the discussion of the environmental effects of the alternatives may be less detailed than the discussion of the impacts of the proposed Project. Following a description of each alternative is a discussion of potential impacts to each of the environmental topics evaluated in this DEIR. A matrix showing a comparison of the potential impacts from each alternative is presented in Section 8.7, below.

Table 8-A – Alternatives Summary

Development Component	Units	Proposed Project	Alternative 1 – No Project/No Development	Alternative 2 – Existing Land Use Designation	Alternative 3 – Existing Entitlements/Sunrise Ranch	Alternative 4 – Smaller Project	Alternative 5– Eastern Mitigation Bank
Residential	DU	3,467-3,632	0	331	2,921	1,400	1,400
Commercial	TSF	62.1-225.4	0	0	80	62.1	62.1
Open Space	AC	607.2	1,657	0	61.3	939.5	939.5 ²
Parks	AC	226.8	0	0	5.4	105.7	177.4
Agriculture Overlay	AC	1.0	0	0	0	1.0	1.0
Golf Course	AC	0	0	0	241.9	0	0
School	AC	8.3	0	0	12.2	8.3	8.3
Other ¹	TSF	0	0	0	150	0	0

Notes: DU = dwelling unit; TSF = thousand square feet; AC = acre

¹ Social Care Facility

² Assumes approximately 300 acres will be available for a mitigation bank.

8.6.1 Alternative 1 – No Project/No Development

The No Project/No Development Alternative includes continued use of the Project site as existing vacant land with a former orchard (approximately 187 acres), which contains live citrus trees that have not been cultivated or tilled in many years, a few rows of which were removed to provide a fire break with adjacent properties across Tres Lagos Street. Under this alternative, it is assumed that no new development would occur. This alternative evaluates the environmental impacts resulting from a continuance of the Project site with no development.

8.6.1.1 Evaluation of Alternative 1 – No Project/No Development

Aesthetics

The No Project/No Development Alternative would retain the Project site’s existing conditions. There would be no construction activities that would modify the existing visual character of the Project site. However, the Project site would remain vacant and would not provide viable and productive uses to the area. Thus, under Alternative 1, impacts related to aesthetics would be avoided and less than that of the proposed Project.

Agricultural and Forestry Resources

Under the No Project/No Development Alternative, there would be no construction on the site. There are no existing agricultural or forestry resources on the Project site; thus, Alternative 1 will not change agricultural or forestry impacts as compared to the Project. Therefore, under Alternative 1, impacts to agricultural and forestry resources would be the same as the proposed Project.

Air Quality

Since no construction activity would occur, the No Project/No Development Alternative would not have any short-term impacts on air quality. Further, no new long-term sources of air pollution would result from increased traffic and increased use of energy resources. Due to the avoidance of short-term and long-term criteria pollutant emissions, this Alternative's impact to air quality would be avoided and less than that of the proposed Project.

Biological Resources

The No Project/No Development Alternative would not result in a change to the existing biological resources on the Project site. Under the No Project/No Development Alternative, use of the Project site for raptor foraging would continue uninterrupted. In addition, other existing or potential sensitive species would be able to continue to utilize the Project site as habitat (including breeding and/or seasonal foraging habitat). Thus, under Alternative 1, impacts to biological resources would be avoided and less than that of the proposed Project.

Cultural Resources

The No Project/No Development Alternative would not result in a change to existing cultural (historical or archaeological) resources on the Project site. However, there is a potential for the discovery of buried cultural and paleontological resources during grading of the Project site. Since the No Project/No Development Alternative would not involve additional or deeper grading of the Project site, it would have no impact upon these unknown and potentially buried cultural resources. Thus, under Alternative 1, impacts to cultural resources would be avoided and less than that of the proposed Project.

Geology and Soils

The No Project/No Development Alternative would not involve any development and/or grading on the Project site. Under this alternative the Project site would remain vacant. Because no structures would be constructed, they would not be subjected to seismic events, landslides, or loss of topsoil. Thus, under Alternative 1, impacts to geology and soils would be avoided and less than that of the proposed Project.

Greenhouse Gas Emissions

Since no construction activity would occur, the No Project/No Development Alternative would not have any short-term emissions of greenhouse gases (GHG). Further, no new long-term sources of GHG would result from increased traffic and increased use of energy resources. Due to the avoidance of short-term and long-term criteria pollutant emissions, this Alternative's impact to GHG emissions would be avoided and less than that of the proposed Project.

Hazards and Hazardous Materials

The No Project/No Development Alternative would retain the Project site's existing conditions. Under the No Project/No Development Alternative, there would be no potential to create a significant hazard to the public due to improper handling or use of hazardous materials or hazardous wastes during construction or operation of future development of the Project site. Therefore, under Alternative 1, impacts to hazards and hazardous materials would be avoided and less than that of the proposed Project.

Hydrology/Water Quality

The No Project/No Development Alternative would retain the Project site's existing conditions. Under this alternative, the existing hydrologic conditions including impacts to surface water quality from point and non-point sources from former agricultural operations could continue, and the existing storm flow patterns and capacity would remain. However, the potential environmental benefits of the Project's proposal to install water conservation measures and Best Management Practices (BMPs) for site design, source control, and treatment control, would not be implemented. The potential for contamination of surface waters and the groundwater basin due to site runoff of waters contaminated with agricultural wastes would continue. Thus, under Alternative 1, impacts to hydrology and water quality would be greater than that of the proposed Project.

Land Use and Planning

Under the No Project/No Development Alternative, the Project site would not be developed. Under this alternative the Project site would remain vacant and underutilized and the goals and policies of the General Plan would not be realized. Therefore, impacts related to land use and planning would be greater than that of the proposed Project.

Mineral Resources

Since a portion of the Project site was previously mined for the construction of the Seven Oaks Dam, it has been determined that it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Thus, under Alternative 1, impacts to mineral resources would be the same as that of the proposed Project.

Noise

Since no construction activity would occur, the No Project/No Development Alternative would not have any short-term noise impacts. Ambient noise increases created by Project-related operations and traffic would also not occur. Therefore, under Alternative 1, impacts to noise would be avoided and less than that of the proposed Project.

Population/Housing

The No Project/No Development Alternative would retain the Project site's existing conditions. Under this Alternative, no development or growth would occur. The No Project/No Development Alternative would not contribute to new employment positions or housing opportunities anticipated in the General Plan and Regional Plans. Therefore, under Alternative 1, impacts to population/housing would be greater than the proposed Project.

Public Services

The No Project/No Development Alternative would retain the Project site's existing conditions. Under this Alternative, no development or growth would occur. Consequently, the No Project/No Development Alternative would not result in an increased demand for public services such as fire protection or police protection services, school services, or library services. Thus, impacts would be avoided compared to the proposed Project. Therefore, under Alternative 1, impacts to public services would be avoided and less than that of the proposed Project.

Recreation

The No Project/No Development Alternative would retain the Project site's existing conditions. Under this Alternative, no development of recreational facilities would occur. The proposed Project includes the construction of approximately 111 acres of parkland, 4.3 acres of private recreation space, 112 acres for a community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes, for residents and the surrounding community. With the lack of these facilities, impacts to parks and recreational facilities' service ratios would be greater. Therefore, under Alternative 1, impacts to recreation would be greater than that of the proposed Project.

Transportation/Traffic

The No Project/No Development Alternative would not increase site-generated traffic above current levels and would not contribute to the need for area-wide off-site road improvements. Therefore, under Alternative 1, impacts to transportation/traffic would be avoided and less than that of the proposed Project.

Utilities/Service Systems

The No Project/No Development Alternative would not involve any development and would not increase the demand for water or sewer service, solid waste, or electricity or cabling infrastructure. Thus, impacts would be avoided compared to the proposed Project. Therefore, under Alternative 1, impacts to utility/service systems would be avoided and less than that of the proposed Project.

8.6.2 Alternative 2 – Existing Land Use Designation

The Existing Land Use Designation Alternative would result in development of the Project site in accordance with the current Highland General Plan, designated as Planned Development of one dwelling unit per five acres. **Table 8-A – Alternatives Summary** above describes the proposed land use for Alternative 2, with approximately 331 residential dwelling units proposed.

8.6.2.1 Evaluation of Alternative 2 –Existing Land Use Designation

Aesthetics

The Existing Land Use Designation Alternative would result in the development of approximately 331 dwelling units. As with the proposed Project, construction activities would modify the existing visual character of the Project site, providing residential units in a currently vacant area. Therefore, impacts to aesthetics would be the same as the proposed Project.

Agricultural and Forestry Resources

The Existing Land Use Designation Alternative would result in the development of approximately 331 dwelling units. Currently there are no operational agricultural uses on the Project site. There are former and remnant orchards in portions within the Project site. The remaining agricultural lands within the City are mostly citrus groves located to the west of the Santa Ana River and north of Greenspot Road. No lands within the City and specifically the Project site are bound by lands subject to an active Williamson Act contracts. Therefore, under Alternative 2, impacts to agricultural and forestry resources would be the same as the proposed Project.

Air Quality

The Existing Land Use Designation Alternative would result in the development of approximately 331 dwelling units across the 1,657 acre site. Air quality impacts related to construction would likely be the less than the proposed Project, but would not be avoided. The long-term air quality impacts resulting from mobile sources would also be greatly reduced. Therefore, under Alternative 2, impacts to air quality would be less than the proposed Project.

Biological Resources

The Existing Land Use Designation Alternative would result in the development of approximately 331 dwelling units across the 1,657 acre site. Alternative 2 would not preserve approximately 535 acres of natural open space which provides suitable habitat for sensitive species and 72 acres of manufactured open space which provide additional wildlife live in and movement corridor opportunities. Although it could be anticipated that under this alternative the RAFSS habitat northwest of Greenspot Road and Morton Canyon would not be developed due to the level of sensitive species habitat, jurisdictional drainage permitting, and topography constraints, it is anticipated that areas left undeveloped would not be as extensive as what is being set aside and designated as Natural Open Space in the Project, in particular an alternate wildlife corridor would not likely be designated and set aside in the eastern portion of the site. As the proposed development under this alternative would be much less intense it is expected the number of residents that would access sensitive areas would be less than the Project. However, trespassing by non-Project residents would be expected to be the same. Therefore, under Alternative 2, impacts to biological resources would be greater than the proposed Project.

Cultural Resources

The Existing Land Use Designation Alternative would result in the development of the Project site. There is a potential for the discovery of buried cultural and paleontological resources during grading of the Project site. Nonetheless, such impacts would be reduced to less than significant levels through compliance with the same mitigation measures as required for the proposed Project. Therefore, under Alternative 2, impacts to cultural resources would be the same as that of the proposed Project.

Geology and Soils

The Existing Land Use Designation Alternative would require similar geotechnical design considerations as the Project site conditions are the same as those analyzed for this Project. Therefore, under Alternative 2, impacts to geology and soils would be the same as that of the proposed Project.

Greenhouse Gas Emissions

The Existing Land Use Designation Alternative would result in the development of approximately 331 dwelling units across the 1,657 acre site. GHG emissions related to construction and operation would be greatly reduced; however, Alternative 2 would not likely meet the 28.5% reduction under AB 32 because it would not include all the Project's design features aimed at reducing GHG emissions. Therefore, under Alternative 2, impacts to GHG would be potentially greater than the proposed Project.

Hazards and Hazardous Materials

The Existing Land Use Designation Alternative, similar to the proposed Project, would still have the potential to create a significant hazard due to accidental release of hazardous materials during

construction of the Project site. However, these impacts would be reduced through the same regulations and mitigation measures imposed upon the proposed Project. Therefore, under Alternative 2, impacts related to hazards and hazardous materials would be the same as the proposed Project.

Hydrology/Water Quality

Under the Existing Land Use Designation Alternative, the same basic storm drainage facilities would be constructed as those included with the proposed Project. The potential for contamination of surface waters due to agricultural-related runoff would be eliminated. However, there would be potential runoff from paved parking areas and streets, contaminated with oil and grease, heavy metals and sediment. This potential impact is the same as the proposed Project and would also be reduced to less than significant levels through compliance with mandatory regulatory requirements and germane mitigation measures. Therefore, under Alternative 2, impacts to hydrology and water quality would be the same as the proposed Project.

Land Use and Planning

Development of the Existing Land Use Designation Alternative would not change the existing land use and would remain consistent with the existing Highland General Plan land use designation. Potential land use compatibility issues would be similar to those of the proposed Project. Therefore, under Alternative 2, impacts to land use and planning would be the same as the proposed Project.

Mineral Resources

Development of the Existing Land Use Designation Alternative would include the same Project site, which was previously mined for the construction of the Seven Oaks Dam. Thus, it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Therefore, under Alternative 2, impacts to mineral resources would be the same as that of the proposed Project.

Noise

Development of the Existing Land Use Designation Alternative would allow for up to 331 residential dwelling units. Development of this Alternative would result in overall decreases construction intensity and fewer vehicle trips during operation, and thus, less traffic-generated noise than the Project, and therefore this impact would be less than that of the proposed Project. Therefore, under Alternative 2, noise impacts would be less than the proposed Project.

Population/Housing

Development of the Existing Land Use Designation Alternative would develop up to 331 residential dwelling units. This Alternative would induce direct population growth; however, this growth was accounted for in the General Plan. Unlike the proposed Project, development envisioned in Alternative 2 is less than the amount of development accounted for in the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Therefore, under Alternative 2, impacts to population/housing would be the same as the proposed Project, albeit for different reasons.

Public Services

Development of the Existing Land Use Designation Alternative would directly increase the demand for public services related to police, fire, schools, and libraries because it would develop up to 331 residential dwelling units leading to a direct increase in population. Therefore, under Alternative 2, impacts to public services would be generally the same, albeit less intense, than proposed Project.

Recreation

Under the Existing Land Use Designation Alternative no development of recreational facilities would occur, but the demand for existing recreational facilities would increase. The proposed Project includes the construction of approximately 111 acres of parkland, 4.3 acres of private recreation space, 112 acres for a community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes, for residents and the surrounding community. With the lack of these facilities, impacts to recreational facilities would be worse than that of the proposed Project. Therefore, under Alternative 2, impacts to recreation would be greater than that of the proposed Project.

Transportation/Traffic

Development of the Existing Land Use Designation Alternative would generate fewer vehicle trips compared to the proposed Project. This Alternative's impact upon the level of service of area-wide streets would be less than the proposed Project and Alternative-related impacts upon roadways could be mitigated to less than significant levels through mitigation measures similar to those described for the proposed Project. Therefore, under Alternative 2, impacts to transportation/traffic would be less than that of the proposed Project.

Utilities/Service Systems

Development of the Existing Land Use Designation Alternative would develop 331 residential dwelling units. Extensions of water and sewer lines, and electricity and cabling infrastructure, would still be necessary under this alternative, the impacts of which would be similar to that of the proposed Project. Additionally, the amount of solid waste generated during construction would be less than generated by the proposed Project. Over the life of the Alternative, the annual solid waste tonnage would be less than that of the proposed Project. For these reasons, it can be concluded that impacts related to solid waste under this alternative would be less than the proposed Project. Therefore, under Alternative 2, impacts to Utilities/Service Systems would be less than that of the proposed Project.

8.6.3 Alternative 3 – Existing Entitlements/Sunrise Ranch

The Sunrise Ranch development was approved by San Bernardino County and its Final EIR was adopted in 1986. It should be noted that the Sunrise Ranch project preceded the incorporation of the City, which occurred in November 1987. Additionally, the proposed 1,657 acre Project site was annexed by the City in 2000. Sunrise Ranch proposed a mixed use development within a smaller project footprint (995 acres) as the Proposed Project, as shown above in **Table 8-A, Alternatives Summary** (see **Figure 5.8-1 – Braemar and Sunrise Ranch Properties** for the spatial relationship between Sunrise Ranch with the Harmony Project site). The following alternatives analysis comparison considers some of the findings of the certified Final EIR, which was completed January 1, 1986, as well as applying modern standards of environmental review, to which this Project is subject, as the environmental and regulatory conditions

have changed since Sunrise Ranch was approved. Further, it should also be noted that this Alternative assumes the existing conditions for the Braemar Property portion of the Harmony Project site will remain in its existing condition with no proposal to develop the land.

8.6.3.1 Evaluation of Alternative 3 –Existing Entitlements/Sunrise Ranch

Aesthetics

The Existing Entitlements/Sunrise Ranch Alternative would result in the development of a mixed use community. Just like the proposed Project, construction activities would modify the existing visual character of the Project site, providing residential and commercial uses in a currently vacant area. The Sunrise Ranch EIR also determined impacts could be mitigated to a less than significant level (SR FEIR, p. 17). Therefore, under Alternative 3, impacts to aesthetics would be the similar to the proposed Project.

Agricultural and Forestry Resources

During the time the Sunrise Ranch project was approved, 500 acres of prime agricultural land and 200 acres of locally valuable soil would have been impacted by development. Currently there are no active agricultural operations on the Project site that would be impacted. The Sunrise Ranch EIR determined impacts would be significant and unavoidable in respect to conversion of Farmland (SR FEIR, p. 15). Therefore, under Alternative 3, impacts to agricultural and forestry resources would be the same as the proposed Project.

Air Quality

Under development of the Existing Entitlements/Sunrise Ranch Alternative, short-term construction and long-term operation emission would exceed applicable SCAQMD thresholds (SR FEIR, pp. 74-75). The proposed Project would also exceed SCAQMD thresholds during construction and operation. Therefore, impacts would be the same as the proposed Project.

Biological Resources

At the time the Sunrise Ranch development was approved, the site did not contain any sensitive species nor were any expected to occur. The Sunrise Ranch development would have removed existing vegetation, recontoured the land, and altered drainage channels. Indirect impacts on the adjacent national forest and to wildlife movement (i.e., mule deer) were also considered significant. (SR FEIR, pp. 67-69). Unlike the Project, Alternative 3 does not include the preservation of almost half the site for open space and does not incorporate mitigation capable of reducing impacts to less than significant levels. Therefore, impacts related to biological resources from implementation of Alternative 3 would be greater than the proposed Project.

Cultural Resources

Under development of the Existing Entitlements/Sunrise Ranch Alternative, there is a potential for the discovery of buried cultural resources during grading of the Project site. Nonetheless, while the Sunrise Ranch EIR did not determine significant impacts, and thus, did not identify mitigation measures for this factor (SR FEIR, pp. 15-17), such impacts in the current regulatory and environmental review conditions would require compliance with regulations and mitigation measures similar to those applicable to the Project. Moreover, as this Alternative includes a smaller footprint, the degree of the impact would be

reduced compared to the Project. Therefore, under Alternative 3, impacts to cultural resources would be the same as that of the proposed Project.

Geology and Soils

The Existing Entitlements/Sunrise Ranch Alternative would be subject to the same geological hazards as the proposed Project, including rupture of the adjacent fault, landslides and liquefaction. Thus, implementation of this Alternative would be subject to similar geotechnical design considerations as the proposed Project due to the regulatory environment of design review and building code standards. Moreover, while the Sunrise Ranch EIR determined a significant and unavoidable impact regarding the threat of seismic ground shaking to the proposed development (SR FEIR, p. 15), such impact would likely be mitigated by regulatory conditions and mitigation measures similar to those required of the Project. Further, the Sunrise Ranch EIR included specific mitigation measures for the project, which may still be applicable depending on if such standards have since been superseded. Therefore, under Alternative 3, impacts to geology and soils would be the same, albeit to a lesser degree due to the smaller footprint, as that of the proposed Project.

Greenhouse Gas Emissions

GHG emissions were not evaluated in the Sunrise Ranch EIR due to a lack of regulatory requirements in effect at that time. Although it would be speculative to make a conclusion regarding the significance of the GHG emissions resulting from the Sunrise Ranch development, it is reasonable to assume that Alternative 3 would result in similar amounts of GHG emissions based on the total amount of dwelling units and non-residential uses proposed. Therefore, Alternative 3 is assumed to have the same impacts at the proposed Project.

Hazards and Hazardous Materials

The Existing Entitlements/Sunrise Ranch Alternative would still have the potential to create a significant hazard due to accidental release of hazardous materials during construction on the Project site due to the existing conditions at the site. While the Sunrise Ranch EIR determined a significant and unavoidable impact to the risk of wildland fires on the proposed developed (SR FEIR, p. 17), such impact would likely be mitigated by regulatory conditions and mitigation measures similar to those required of the Project. Moreover, implementation of the Sunrise Ranch project would be subject to current regulations and mitigation measures which are required of the proposed Project. Therefore, under Alternative 3, impacts to hazards and hazardous materials would be similar, albeit to a lesser degree due to the smaller footprint, to that of the proposed Project.

Hydrology/Water Quality

Under the Existing Entitlements/Sunrise Ranch Alternative, the same basic storm drainage facilities would be constructed as those included with the proposed Project. The potential for contamination of surface waters due to agricultural-related runoff would be also eliminated. The potential impacts from surface runoff would be the same as the proposed Project as they too, would be reduced to less than significant levels through compliance with the mitigation measures required by the Sunrise Ranch EIR, which determined to be sufficient to mitigate impacts to less than significant level (SR FEIR, pp. 15-16), as well as with compliance to regulatory requirements and mitigation measures that would be applicable if implemented to date. Therefore, under Alternative 3, impacts to hydrology and water

quality would be the same, albeit to a lesser degree due to the smaller footprint, as that of the proposed Project.

Land Use and Planning

At the time the Sunrise Ranch project was approved, this Alternative was inconsistent with the San Bernardino General Plan designation for the area (the City was not yet incorporated nor the Project site annexed), and constituted a major deviation from the land use plan. The character of the area at the time was determined by the Sunrise Ranch EIR to be a significant and unavoidable impact as it would substantially change the area's rural setting (SR FEIR, p. 16). Moreover, the existing entitlements are not consistent with the City's currently adopted General Plan (note the discussion of Alternative 2), whereas the proposed Project is consistent. Therefore, under Alternative 3, impacts related to land use and planning would be greater than the proposed Project.

Mineral Resources

Development of the Existing Entitlements/Sunrise Ranch Alternative would include largely the same Project site as Harmony, which was previously mined for the construction of the Seven Oaks Dam subsequent to the approval of the Sunrise Ranch development. Thus, it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Therefore, under Alternative 3, impacts to mineral resources would be the same as the proposed Project.

Noise

Development of the Existing Entitlements/Sunrise Ranch Alternative would result in construction of a smaller footprint and fewer vehicle trips during operation, and thus less traffic-generated noise. While Sunrise Ranch EIR determined impacts to ambient noise would be significant and unavoidable (SR FEIR, p. 16), such impact would likely be mitigated by regulatory conditions and mitigation measures similar to those required of the Project. In addition the existing environmental ambient noise setting of Project site vicinity has changed substantially with development in the cities of Highland, Redlands, Yucaipa, and unincorporated San Bernardino County in the past approximately 30 years. Nonetheless, construction and operational noise impacts would likely be less than the Project. Therefore, under Alternative 3, noise impacts would be less than the proposed Project.

Population/Housing

The Existing Entitlements/Sunrise Ranch Alternative proposes approximately 2,921 residential dwelling units, generating 7,069 residents (the Sunrise Ranch EIR assumed 2.42 persons per household), and 80,000 square feet of commercial development (SR FEIR, pp. 11-12). The Project proposes between 3,467 and 3,632 residential dwelling units, generating between 11,822 and 12,385 residents (based on the current Citywide average of 3.41 persons per household), and between 62,073 and 225,423 square feet of commercial development. With the current Citywide average persons per household, implementation of this Alternative would likely generate 9,961 residents on site. The Sunrise Ranch EIR determined growth inducement to be a significant unavoidable impact (SR FEIR, p. 19). However, this Alternative would result in a lesser degree of population growth than the Project due to the smaller footprint and would be similar to the growth projections the City of Highland provided to SCAG for use

in the RTP/SCS. Therefore, under Alternative 3, impacts to population and housing would be the same as the proposed Project.

Public Services

The Existing Entitlements/Sunrise Ranch Alternative would directly increase the demand for public services related to police and fire protection services, schools, and libraries. To address some of the increased demand, the Alternative would designate 12.2 acres for a school and 10 acres for a social care facility on site; however, the Sunrise Ranch EIR determined impacts on school services would be significant and unavoidable (SR FEIR, pp. 5-6, 17). Such impacts on school services would likely be mitigated by regulatory conditions similar to those required of the Project, such as payment of mitigating fees, which is required by law and determined to fully mitigate impacts on school services. This Alternative would also be subject to the payment of Development Impact Fees specifically regarding fire and police protection services and for library services, as is the Project. Payment of these fees would also serve to mitigate the increased demand impacts. Moreover, the Project's fire protection mitigation measure requiring the siting of a fire station on site would likely be required of this Alternative as well due to the same general location of the site and need for such services in the area. Therefore, under Alternative 3, impacts to public services would be the same as the proposed Project.

Recreation

The Existing Entitlements/Sunrise Ranch Alternative would develop a 242-acre golf course, equestrian facilities, 61.3 acres of visual open space, and 5.4 acres of parks (SR FEIR, pp. 4-6). The Project proposes development of approximately 110 acres of parkland, 4.3 acres of private recreation space, 112 acres for a community greenway, 535 acres of natural open space, and 72 acres of manufactured slopes, for residents and the surrounding community. This Alternative would develop parks and recreational facilities on site to serve the increased demand, and improve parkland to resident ratios in the City, albeit to a lesser degree than the Project. Therefore, under Alternative 3, impacts to recreation would be greater than that of the proposed Project.

Transportation/Traffic

Development of the Existing Entitlements/Sunrise Ranch Alternative would generate approximately 17,540 daily vehicle trips, which the Sunrise Ranch EIR determined would result in a significant unavoidable impact as it constitutes a major change in the local traffic environment along area streets (SR FEIR, p. 16). Mitigation measures were developed to improve the circulation system at that time, which may not be applicable or fully adequate if implemented today due to the developmental changes in the region in the last approximately 30 years. Thus, implementation of the Sunrise Ranch project would likely require new mitigation measure addressing the existing traffic and transportation condition of the site and area, much like the Project's mitigation measures, but at an appropriate scale. Moreover, the Project is anticipated to generate approximately 40,528 daily vehicle trips at full build-out; however, it should be noted the daily vehicle trips for Sunrise Ranch was based on older trip generation rates, which, if revised, would likely yield a much higher trip generation estimation. Therefore, under Alternative 3, impacts related to transportation and traffic would be less than that of the Project due to the smaller footprint and decreased intensity of uses.

Utilities/Service Systems

The Existing Entitlements/Sunrise Ranch Alternative would develop land uses similar to the proposed Project, but at a lesser intensity and on a smaller footprint. Extensions of water and sewer systems, and electricity and cabling infrastructure would still be necessary under this Alternative as the site has not been developed. The impacts were determined in the Sunrise Ranch EIR to be less than significant with mitigation (SR FEIR, p. 17). The amount of solid waste generated during construction would be less than that generated by the proposed Project. Over the operational lifetime of the Alternative, the annual solid waste tonnage would be less than that of the proposed Project as well. Moreover, the overall demand for potable water, sewer, and electricity would be less than the Project due to the lesser intensity of development and smaller footprint. However, as with the Project, this Alternative would be subject to existing regulatory conditions that take into consideration existing and projected utility infrastructure conditions. Therefore, under Alternative 3, impacts to utilities and service systems would be less than that of the proposed Project.

8.6.4 Alternative 4 – Smaller Project

The Smaller Project Alternative will result in a development footprint roughly ½ the size of the proposed Project. Approximately 420 acres consisting of residential development (assuming approximately 1,400 residential units) and 5.7 acres of neighborhood commercial would be developed. The remaining acreage east of PA's 16, 17, 54, and 55 (**Figure 3-8**) would be designated as Natural Open Space without development rights. The elementary school site would remain. The Fire station site and the water and sewer facilities west of the open space areas would remain the same as the Project. The existing extension of Newport Avenue would also remain to continue to provide connection to existing residents east of the site. Additionally, all but approximately 12 acres of PA 44 (areas east of the fire station site) would be converted from Park to Natural Open Space. Avoiding development in these areas would preserve the wildlife linkage to Crafton Hills and conserve more habitat in proximity to Mill Creek, including disturbed Riversidean Sage Scrub (RSS), Riversidean Alluvial Fan Sage Scrub (RAFSS) habitat, jurisdictional drainage features, and critical habitat for San Bernardino kangaroo rat (SBKR).

Aesthetics

The Smaller Project Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. As with the proposed Project, construction activities would modify the existing visual character of the Project site, providing residential units in a currently vacant area. The development area would be substantially smaller and limited to the west end of the site. Therefore, under Alternative 4, impacts to aesthetics would be the same as the proposed Project, albeit to a lesser degree due to the smaller footprint.

Agricultural and Forestry Resources

The Smaller Project Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. Currently there are no operational agricultural uses on the Project site. There are former and remnant orchards in portions within the Project site. The remaining agricultural lands within the City are mostly citrus groves located to the west of the Santa Ana River and north of Greenspot Road. No lands within the City and specifically the Project site are bound by lands subject to

an active Williamson Act contracts. Therefore, under Alternative 4, impacts to agricultural and forestry resources would be the same as the proposed Project.

Air Quality

The Smaller Project Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. Air quality impacts related to construction would be similar to the proposed Project because the daily construction activity would be similar. The long-term air quality impacts resulting from mobile sources would be greatly reduced due to the reduction of more than ½ the proposed dwelling units, but would not avoid impacts resulting from emissions exceeding the SCAQMD daily regional thresholds. Therefore, under Alternative 4, impacts to air quality would be less than the proposed Project.

Biological Resources

Designating the eastern portion of the Project site as Natural Open Space would avoid any conflict with the existing wildlife corridor on the east side of the site eliminating the need for mitigation measure **MM BIO 6**. It would also minimize impacts to jurisdictional drainage features and disturbed RSS and RAFSS habitat within the eastern and southern most portion of the site. Alternative 4 would also minimize encroachment into SBKR critical habitat along the southern boundary of the site. Therefore, under Alternative 4, impacts to biological resources would be less than the proposed Project.

Cultural Resources

The Smaller Project Alternative would result in the development of the western portion of the site. There is a potential for the discovery of buried cultural and paleontological resources during grading of the Project site. Nonetheless, such impacts would be reduced to less than significant levels through compliance with the same mitigation measures as required for the proposed Project. Therefore, under Alternative 4, impacts to cultural resources would be the same as that of the proposed Project.

Geology and Soils

The Smaller Project Alternative would require similar geotechnical design considerations as the Project site conditions are the same as those analyzed for this Project. Because no structures would be constructed on the eastern portion of the site, less homes would be within or immediately adjacent to the San Andreas Earthquake Fault Zone. Therefore, under Alternative 4, impacts to geology and soils would be the same as that of the proposed Project, albeit to a lesser degree.

Greenhouse Gas Emissions

The Smaller Project Alternative would result in the development of approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial. GHG emissions related to construction and operation would be greatly reduced because less homes and structures would be constructed; however, Alternative 4 may not meet the 28.5% reduction under AB 32 because the TDM and VMT reductions associated with the reduced Project size may have a smaller effect on GHG emissions. Therefore, under Alternative 4, impacts to GHG are potentially greater than the proposed Project.

Hazards and Hazardous Materials

The Smaller Project Alternative, similar to the proposed Project, would still have the potential to create a significant hazard due to accidental release of hazardous materials during construction of the Project

site. However, these impacts would be reduced through the same regulations and mitigation measures imposed upon the proposed Project. Therefore, under Alternative 4, impacts related to hazards and hazardous materials would be the same as the proposed Project.

Hydrology/Water Quality

Under the Smaller Project Alternative, the same basic storm drainage facilities would be constructed as those included with the proposed Project. The potential for contamination of surface waters due to agricultural-related runoff would be eliminated. However, there would be potential runoff from paved parking areas and streets, contaminated with oil and grease, heavy metals and sediment in the western portion of the site. This potential impact is the same as the proposed Project and would also be reduced to less than significant levels through compliance with mandatory regulatory requirements and germane mitigation measures. Therefore, under Alternative 4, impacts to hydrology and water quality would be the same as the proposed Project.

Land Use and Planning

Development of the Smaller Project Alternative would not change the existing land use and would remain consistent with the existing Highland General Plan land use designation. Potential land use compatibility issues would be similar to those of the proposed Project. The only difference is the addition of more Natural Open Space. Therefore, under Alternative 4, impacts to land use and planning would be the same as the proposed Project.

Mineral Resources

Development of the Smaller Project Alternative would include the same Project site, which was previously mined for the construction of the Seven Oaks Dam. Thus, it is unlikely that significant quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Therefore, under Alternative 4, impacts to mineral resources would be the same as that of the proposed Project.

Noise

Development of the Smaller Project Alternative would allow for approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial. Development of this Alternative would result in overall decreases construction intensity and fewer vehicle trips during operation, and thus, less traffic-generated noise than the Project, and therefore this impact would be less than that of the proposed Project. Therefore, under Alternative 4, noise impacts would be less than the proposed Project.

Population/Housing

Development of the Smaller Project Alternative would develop only 1,400 residential dwelling units and 5.7 acres of neighborhood commercial. However, a General Plan Amendment would still be required. Unlike the proposed Project, development envisioned in Alternative 4 is less than the amount of development accounted for in the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which may make it more difficult to achieve the necessary reductions contained in the SCS. Therefore, under Alternative 4, impacts to population/housing would be potentially greater than the proposed Project.

Public Services

Development of the Smaller Project Alternative would directly increase the demand for public services related to police, fire, schools, and libraries because it would develop up to 1,400 residential dwelling units leading to a direct increase in population. Therefore, under Alternative 4, impacts to public services would be generally the same, albeit less intense, than proposed Project.

Recreation

Under the Smaller Project Alternative development of recreational facilities would occur, but the amount of required parkland and parkland provided would be reduced because of the reduction in units. The 4.3 acres of private recreation would remain as would the 5-acre joint use park. With the construction of these facilities, impacts to recreational facilities would be the similar to the proposed Project. Therefore, under Alternative 4, impacts to recreation would be the same as the proposed Project.

Transportation/Traffic

Development of the Smaller Project Alternative would generate fewer vehicle trips compared to the proposed Project. This Alternative's impact upon the level of service of area-wide streets would be less than the proposed Project and Alternative-related impacts upon roadways could be mitigated to less than significant levels through mitigation measures similar to those described for the proposed Project. Therefore, under Alternative 4, impacts to transportation/traffic would be less than that of the proposed Project, but not avoided.

Utilities/Service Systems

Development of the Smaller Project Alternative would develop 1,400 residential dwelling units and 5.7 acres of neighborhood commercial. Extensions of water and sewer lines, and electricity and cabling infrastructure, would still be necessary under this alternative, the impacts of which would be similar to that of the proposed Project, albeit a smaller footprint. Additionally, the amount of solid waste generated during construction would be less than generated by the proposed Project. Over the life of the Alternative, the annual solid waste tonnage would be less than that of the proposed Project. For these reasons, it can be concluded that impacts related to solid waste under this alternative would be less than the proposed Project. Therefore, under Alternative 4, impacts to Utilities/Service Systems would be less than that of the proposed Project.

8.6.5 Alternative – Eastern Mitigation Bank

The Eastern Mitigation Bank Alternative evaluates the impacts from creation of a mitigation bank on the portion of the Project site east of PA's 16, 17, 54, and 55 (**Figure 3-8**). The remainder of the site would develop the same as the Project, with approximately 1,400 residential dwelling units and 5.7 acres of neighborhood commercial. The mitigation bank would be available to the Project as well as other development or infrastructure projects looking to mitigate for impacts to disturbed RSS and RAFSS habitat, jurisdictional drainage features, and conservation of the SBKR critical habitat. It is assumed that the mitigation bank would restore on-site habitat as projects develop thereby improving the biological value of the site over time.

Aesthetics

The Eastern Mitigation Bank Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. As with the proposed Project, construction activities would modify the existing visual character of the Project site, providing residential units in a currently vacant area. The development area would be substantially smaller and limited to the west end of the site. Therefore, under Alternative 5, impacts to aesthetics would be the same as the proposed Project, albeit to a lesser degree due to the smaller footprint.

Agricultural and Forestry Resources

The Eastern Mitigation Bank Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. Currently there are no operational agricultural uses on the Project site. There are former and remnant orchards in portions within the Project site. The remaining agricultural lands within the City are mostly citrus groves located to the west of the Santa Ana River and north of Greenspot Road. No lands within the City and specifically the Project site are bound by lands subject to an active Williamson Act contracts. Therefore, under Alternative 5, impacts to agricultural and forestry resources would be the same as the proposed Project.

Air Quality

The Eastern Mitigation Bank Alternative would develop approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial uses. Air quality impacts related to construction would likely be similar to the proposed Project because the daily construction activity would be similar. The long-term air quality impacts resulting from mobile sources would also be greatly reduced due to reduction of more than ½ the proposed dwelling units, but would not avoid impacts resulting from emissions exceeding the SCAQMD daily regional thresholds. Therefore, under Alternative 5, impacts to air quality would be less than the proposed Project.

Biological Resources

Designating the eastern portion of the Project site as a Mitigation Bank would avoid any conflict with the existing wildlife corridor on the east side of the site eliminating the need for mitigation measure **MM BIO 6**. It would also minimize the Project's impacts to jurisdictional drainage features and disturbed RSS and RAFSS habitat within the eastern and southern most portion of the site and provide areas for on-site mitigation required by **MM BIO 2**, **MM BIO 4**, and **MM BIO 5**. Alternative 5 would also minimize encroachment into SBKR critical habitat along the southern boundary of the site. Overtime, the biological value of the eastern portion of the site would improve as development projects pay to restore on-site habitat on a project by project and therefore incremental basis. As individual projects restore on-site habitat, it is assumed that these area would be placed in a conservation easement prohibiting future development of the area. Therefore, under Alternative 5, impacts to biological resources would be less than the proposed Project.

Cultural Resources

The Eastern Mitigation Bank Alternative would result in the development of the western portion of the site. There is a potential for the discovery of buried cultural and paleontological resources during grading of the Project site. Nonetheless, such impacts would be reduced to less than significant levels

through compliance with the same mitigation measures as required for the proposed Project. Therefore, under Alternative 5, impacts to cultural resources would be the same as that of the proposed Project.

Geology and Soils

The Eastern Mitigation Bank Alternative would require similar geotechnical design considerations as the Project site conditions are the same as those analyzed for this Project. Because no structures would be constructed on the eastern portion of the site, less homes would be within or adjacent to the San Andreas Earthquake Fault Zone. Therefore, under Alternative 5, impacts to geology and soils would be the same as that of the proposed Project, albeit to a lesser degree.

Greenhouse Gas Emissions

The Eastern Mitigation Bank Alternative would result in the development of approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial. GHG emissions related to construction and operation would be greatly reduced; however, Alternative 5 may not meet the 28.5% reduction under AB 32 because the TDM and VMT reductions associated with the reduced Project size may have a smaller effect on GHG emissions. Therefore, under Alternative 5, impacts to GHG are potentially worse than the proposed Project.

Hazards and Hazardous Materials

The Eastern Mitigation Bank Alternative, similar to the proposed Project, would still have the potential to create a significant hazard due to accidental release of hazardous materials during construction of the Project site. However, these impacts would be reduced through the same regulations and mitigation measures imposed upon the proposed Project. Therefore, under Alternative 5, impacts related to hazards and hazardous materials would be the same as the proposed Project.

Hydrology/Water Quality

Under the Eastern Mitigation Bank Alternative, the same basic storm drainage facilities would be constructed as those included with the proposed Project. The potential for contamination of surface waters due to agricultural-related runoff would be eliminated. However, there would be potential runoff from paved parking areas and streets, contaminated with oil and grease, heavy metals and sediment in the western portion of the site. This potential impact is the same as the proposed Project and would also be reduced to less than significant levels through compliance with mandatory regulatory requirements and germane mitigation measures. Therefore, under Alternative 5, impacts to hydrology and water quality would be the same as the proposed Project.

Land Use and Planning

Development of the Eastern Mitigation Bank Alternative would not change the existing land use and would remain consistent with the existing Highland General Plan land use designation. Potential land use compatibility issues would be similar to those of the proposed Project. The only difference is the addition of more open space in the form of a mitigation bank. Therefore, under Alternative 5, impacts to land use and planning would be the same as the proposed Project.

Mineral Resources

Development of the Eastern Mitigation Bank Alternative would include the same Project site, which was previously mined for the construction of the Seven Oaks Dam. Thus, it is unlikely that significant

quantities of economically valuable mineral resources are present with the potential development area of the site (Converse, p. 2). Therefore, under Alternative 5, impacts to mineral resources would be the same as that of the proposed Project.

Noise

Development of the Eastern Mitigation Bank Alternative would allow for approximately 1,400 dwelling units and 5.7 acres of neighborhood commercial. Development of this Alternative would result in overall decreases construction intensity and fewer vehicle trips during operation, and thus, less traffic-generated noise than the Project, and therefore this impact would be less than that of the proposed Project. Therefore, under Alternative 5, noise impacts would be less than the proposed Project.

Population/Housing

Development of the Eastern Mitigation Bank Alternative would develop only 1,400 residential dwelling units and 5.7 acres of neighborhood commercial. However, a General Plan Amendment would still be required. Unlike the proposed Project, development envisioned in Alternative 5 is less than the amount of development accounted for in the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which may make it more difficult to achieve the necessary reductions contained in the SCS. Therefore, under Alternative 5, impacts to population/housing would be potentially greater than the proposed Project.

Public Services

Development of the Eastern Mitigation Bank Alternative would directly increase the demand for public services related to police, fire, schools, and libraries because it would develop up to 1,400 residential dwelling units leading to a direct increase in population. Therefore, under Alternative 5, impacts to public services would be generally the same, albeit less intense, than proposed Project.

Recreation

Under the Eastern Mitigation Bank Alternative development of recreational facilities would occur, but the amount of required parkland and parkland provided would be reduced. The 4.3 acres of private recreation would remain as would the 5-acre joint use park. With the construction of these facilities, impacts to recreational facilities would be the same as the proposed Project. Therefore, under Alternative 5, impacts to recreation would be the same as the proposed Project.

Transportation/Traffic

Development of the Eastern Mitigation Bank Alternative would generate fewer vehicle trips compared to the proposed Project. This Alternative's impact upon the level of service of area-wide streets would be less than the proposed Project and Alternative-related impacts upon roadways could be mitigated to less than significant levels through mitigation measures similar to those described for the proposed Project. Therefore, under Alternative 5, impacts to transportation/traffic would be less than that of the proposed Project, but not avoided.

Utilities/Service Systems

Development of the Eastern Mitigation Bank Alternative would develop 1,400 residential dwelling units and 5.7 acres of neighborhood commercial. Extensions of water and sewer lines, and electricity and cabling infrastructure, would still be necessary under this alternative, the impacts of which would be

similar to that of the proposed Project, albeit a smaller footprint. Additionally, the amount of solid waste generated during construction would be less than generated by the proposed Project. Over the life of the Alternative, the annual solid waste tonnage would be less than that of the proposed Project. For these reasons, it can be concluded that impacts related to solid waste under this alternative would be less than the proposed Project. Therefore, under Alternative 5, impacts to Utilities/Service Systems would be less than that of the proposed Project.

8.7 Comparison of Alternatives

Table 8-B – Comparison of Alternatives Matrix, below, compares the potential environmental impacts of each alternative and ranks each alternative as *less*, *same*, or *greater* in comparison to the significance determinations that the proposed Project would have with respect to each issue area.

Table 8-B – Comparison of Alternatives Matrix

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Aesthetics	The Project would not have a substantial adverse effect on the scenic vista (with implementation of the identified mitigation measure); substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; substantially degrade the existing visual character or quality of the site and its surroundings; or create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Less than significant impacts with mitigation.	Less – This Alternative would retain the Project site’s existing conditions. No impacts would occur.	Same – This Alternative would result in the development of the Project site in accordance the existing General Plan Land Use designation. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.	Same – This Alternative would result in the development, albeit a lesser area of the Harmony Project site, in accordance with the approved Sunrise Ranch project and include mitigation measures. Thus, impacts would be the same as the proposed Project. Impacts would be less than significant with mitigation.	Same – This Alternative would result in the development of the western portion of the Project site. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.	Same – This Alternative would result in the development of the western portion of the Project site. Impacts would be the same as the proposed Project. Impacts would be less than significant, but could require similar mitigation measures as the Project.
Agricultural and Forestry Resources	The Project will not result in a significant impact regarding the conversion of Farmland to non-agricultural use; and involving other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. The Project will not conflict with existing zoning for agricultural use, a Williamson Act contract; existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production; or result in the loss of forest land or conversion of forest land to non-forest use. Impacts would be less than significant with mitigation.	Same – No loss of existing agricultural uses or Farmland. No impacts would occur.	Same – Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.	Same –Development of the site does not result in a significant impact regarding the conversion of Farmland to non-agricultural use because no agricultural production currently exists. The site does not contain forest land. Impacts would be less than significant with mitigation.
Air Quality	The Project would violate air quality standards or contribute substantially to an existing or projected air quality violation; would 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); but would not conflict an air quality plan; or expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting substantial number of people.	Less – Impacts on air quality from construction and operation would be avoided due to the lack of development. No impacts would occur.	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after	Same – Air quality impacts from the short-term construction and long-term emissions would exceed SCAQMD thresholds. Significant impacts after mitigation.	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after	Less – Air quality impacts would be less than that of the proposed Project due to the change in land use and associated reductions in vehicle trips, but would not be reduced to less than significant levels. Significant impacts after

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	Significant impacts after mitigation.		mitigation.		mitigation.	mitigation.
Biological Resources	<p>With implementation of the identified mitigation measures the Project will not have a substantial adverse effect on sensitive species or their habitat, on riparian or other sensitive natural community, on federally protected wetlands. With implementation of the identified mitigation measures the Project will not interfere substantially with a wildlife corridor. The Project will not conflict with any local policies or ordinance protecting biological resources, or with provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. With implementation of identified mitigation measures potential impacts to sensitive species and their habitat are reduced to less than significant levels.</p>	<p>Less—No loss of land to development and all open space is retained thus, no loss of foraging habitat, no encroachment into SBKR Critical Habitat.</p> <p>No impacts would occur.</p>	<p>Greater—This alternative would not preserve 535 acres of natural open space which provides suitable habitat for sensitive species and 72 acres of manufactured open space which provide for wildlife movement corridor opportunities through the Project site. Although less Project residents would be expected to access sensitive areas, trespassing by non-Project residents would not change.</p>	<p>Greater – This alternative would not include the preservation of almost half of the site for open space and does not incorporate mitigation capable of reducing impacts to less than significant levels.</p>	<p>Less – designating the eastern portion of the Project as Natural Open Space would avoid any conflict with the existing Crafton Hills Linkage wildlife corridor. This alternative would also minimize impacts to jurisdictional features, disturbed RSS and RAFSS and minimize encroachment into SBKR critical habitat.</p> <p>Impacts would be less than significant with implementation of similar mitigation measures to the Project, albeit to a lesser degree due to a reduced development footprint.</p>	<p>Less – designating the eastern portion of the Project as a Mitigation Bank would avoid any conflict with the existing Crafton Hills Linkage wildlife corridor. This alternative would also minimize impacts to jurisdictional features, disturbed RSS and RAFSS and minimize encroachment into SBKR critical habitat. In addition, overtime the biological value of the eastern portion of the site would improve as development projects pay to restore on-site habitat on a project by project and therefore incremental basis.</p> <p>Impacts would be less than significant, with implementation of similar mitigation measures as the Project, albeit to a lesser degree due to a reduced development footprint.</p>
Cultural Resources	<p>With implementation of the identified mitigation measures for each threshold, the Project would not create a substantial adverse change in the significance of a historical resource as defined in Section 15064.5; cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5; directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or disturb any human remains, including those interred outside of formal cemeteries.</p> <p>Less than significant impacts with mitigation.</p>	<p>Less – This Alternative would not involve additional or deeper grading of the Project site and would have no impact upon unknown and potentially buried cultural resources.</p> <p>No impacts would occur.</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project.</p> <p>Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if implemented.</p> <p>Impacts would be less than significant, but would likely require</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if implemented.</p> <p>Impacts would be less than significant, but would likely require</p>	<p>Same – This Alternative may impact unknown buried resources similar to that of the proposed Project, albeit to a lesser degree due to the smaller footprint, and would likely be subject to similar regulations and mitigation measures if implemented.</p> <p>Impacts would be less than significant, but would likely require</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
				mitigation measures to avoid potential impacts.	mitigation measures to avoid potential impacts.	mitigation measures to avoid potential impacts.
Geology and Soils	<p>With implementation of the identified mitigation measures for each threshold, the Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: fault rapture, strong seismic ground shaking, seismic-related ground failure, landslides; result in substantial soils erosion or loss of topsoil; be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; be located on expansive soil, creating substantial risks to life or property.</p> <p>The Project would have no impact regarding 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.</p> <p>Less than significant impacts with mitigation.</p>	<p>Less – This Alternative would not involve the development on the site so no structures, grading or soils disturbance.</p> <p>No impacts would occur.</p>	<p>Same – This Alternative would require similar geotechnical design considerations as the existing conditions are the same and the proposed land use is similar.</p> <p>Impacts would be less than significant, and could require similar mitigation measures as the Project.</p>	<p>Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented.</p> <p>Impacts would be less than significant with mitigation.</p>	<p>Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented.</p> <p>Impacts would be less than significant with mitigation.</p>	<p>Same – This Alternative would require similar geotechnical design considerations and mitigation as the proposed Project if implemented.</p> <p>Impacts would be less than significant with mitigation.</p>
Greenhouse Gas Emissions	<p>The Project would not generate GHG emissions, either directly or indirectly, that may have a cumulatively significant impact on the environment, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.</p> <p>Less than significant impacts.</p>	<p>Less – GHG emissions would remain at existing levels; new construction and operational emissions on the site would be avoided.</p> <p>No impacts would occur.</p>	<p>Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions.</p> <p>Impacts would potentially be significant.</p>	<p>Same – Although GHG emissions were not evaluated in the Sunrise Ranch EIR, it is reasonable to assume that similar amounts of GHG emission would be generated by development of this alternative based on the total amount of dwelling units and non-residential uses proposed.</p> <p>Impacts could potentially be less than significant with mitigation.</p>	<p>Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions.</p> <p>Impacts would potentially be significant.</p>	<p>Greater – This Alternative would greatly reduce GHG emissions due to the reduction in dwelling units compared to the proposed Project, but would likely not meet the AB 32 reduction target of 28.5 percent because it would not include the Project’s design features aimed at reducing GHG emissions.</p> <p>Impacts would potentially be significant.</p>
Hazards and Hazardous Materials	<p>The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; result in a safety hazard for people residing or working in the project area near an airport; impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</p> <p>With implementation of the identified mitigation measures, the Project would not create a significant hazard to the public or the</p>	<p>Less – Under this Alternative the Project site would remain vacant and idle. It would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar.</p> <p>Impacts would be less than significant, and could</p>	<p>Same – The existing conditions would remain as the Project site is largely similar and the proposed land use under this Alternative is also similar to the Project’s proposal. Moreover, current regulatory conditions and mitigation measures would apply if</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar.</p> <p>Impacts would be less than significant, and could</p>	<p>Same – The existing conditions would remain as the Project site is the same and the proposed land use under this Alternative is similar to the Project’s proposal. The resulting impacts would also be similar.</p> <p>Impacts would be less than significant, and could</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	<p>environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; result in the creation of a significant hazard to the public or the environment due to location; expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</p> <p>Less than significant impacts with mitigation.</p>	<p>the environment.</p> <p>No impacts would occur.</p>	<p>require similar mitigation measures as the Project.</p>	<p>implemented.</p> <p>Impacts would be less than significant with mitigation.</p>	<p>require similar mitigation measures as the Project.</p>	<p>require similar mitigation measures as the Project.</p>
Hydrology / Water Quality	<p>The Project would not violate any water quality standards or waste discharge requirements; substantially deplete groundwater supplies; otherwise substantially degrade water quality; 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.</p> <p>With implementation of the identified mitigation measures for each threshold, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; 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; inundation by seiche, tsunami, or mudflow; or place within a 100-year flood hazard area structures which would impede or redirect flood flows;</p> <p>Less than significant impacts with mitigation.</p>	<p>Greater – The existing condition regarding hydrology and water quality would continue on site; however, the Project’s beneficial design and BMPs would not be realized, which may contribute to greater long-term impacts than the proposed Project.</p> <p>Impacts would be less than significant.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements.</p> <p>Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project.</p> <p>Impacts would be less than significant and could require similar mitigation measures as the Project.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements, as required in the current regulatory environment.</p> <p>Adherence to these regulatory requirements, and likely additional mitigation measures similar to the Project’s that also would be required if implemented to date, would reduce potential impacts to less than significant similar to the proposed Project.</p> <p>Impacts would be less than significant with mitigation.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements.</p> <p>Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project.</p> <p>Impacts would be less than significant and could require similar mitigation measures as the Project.</p>	<p>Same – Construction of this Alternative would require preparation and implementation of a project specific WQMP, SWPPP, and compliance with NPDES permit requirements.</p> <p>Adherence to these regulatory requirements, and similar mitigation measures as the Project due to the similarity in proposed land uses, would reduce potential impacts to less than significant similar to the proposed Project.</p> <p>Impacts would be less than significant and could require similar mitigation measures as the Project.</p>
Land Use and Planning	<p>The Project would not physically divide an established community; conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or conflict with any applicable habitat conservation plan or natural community conservation plan.</p> <p>Impacts would be less than significant.</p>	<p>Greater – The site would remain vacant and underutilized and thus, not meet the goals and policies of the City General Plan.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning.</p> <p>Impacts would be less than significant.</p>	<p>Greater – This Alternative is not consistent with the General Plan land use designation for the site, whereas the Project is consistent.</p> <p>Impacts would be significant and unavoidable.</p>	<p>Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would be consistent with City of Highland General Plan land use designations, proposed zoning and surrounding land use designations and zoning.</p> <p>Impacts would be less than significant.</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Mineral Resources	<p>The Project would not 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; or 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.</p> <p>Impacts would be less than significant.</p>	<p>Same – This existing conditions at the site involve the diminished to nullified potential for the area to be utilized for mineral resources due to previous extraction activity during construction of the Seven Oaks Dam.</p> <p>No impacts would occur.</p>	<p>Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would include largely the same Project site as Harmony, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would include the same Project site, and thus, the same existing conditions, which include the previous extraction of mineral resources at the site for the construction of the Seven Oaks Dam.</p> <p>Impacts would be less than significant.</p>
Noise	<p>The Project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; 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; 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.</p> <p>With implementation of the identified mitigation measures for each threshold, the Project would not result in 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; a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.</p> <p>Less than significant impacts with mitigation.</p>	<p>Less – This Alternative would not involve construction of the Project site and would not increase traffic on area roadways.</p> <p>No impacts would occur.</p>	<p>Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise.</p> <p>Impacts are would be less than significant, but could require similar mitigation measures as the Project.</p>	<p>Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise.</p> <p>Impacts are would be less than significant, but could require similar mitigation measures as the Project.</p>	<p>Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise.</p> <p>Impacts are would be less than significant, but could require similar mitigation measures as the Project.</p>	<p>Less – This Alternative would result in decreased construction activity and fewer vehicle trips during operation. Thus, less noise from construction equipment and traffic-generated noise.</p> <p>Impacts are would be less than significant, but could require similar mitigation measures as the Project.</p>
Population / Housing	<p>The Project would not substantially induce 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> <p>The Project would not displace substantial numbers of existing housing; or displace substantial numbers of people.</p> <p>Impacts would be less than significant.</p>	<p>Greater – This Alternative would not result in any population growth since no development would occur. Because growth was accounted for in both the General Plan and larger Regional Plans, the goals of these plans may no longer be met and greater impacts may result.</p>	<p>Same – This Alternative would directly induce population growth, but the resulting growth would not exceed the General Plan’s estimations for the City.</p> <p>Impacts would be less than significant.</p>	<p>Same – The Sunrise Ranch would develop fewer residential dwelling units and generate less residents than the Project, which would lessen, but would be similar to the growth projections used in the SCAG RTP/SCS.</p> <p>Impacts would be less than significant.</p>	<p>Greater – This Alternative would develop fewer residential dwelling units and generate less residents than the Project, which may make it more difficult to achieve the necessary reductions contained in the SCAG RTP/SCS.</p> <p>Impacts would be potentially significant.</p>	<p>Greater – This Alternative would develop fewer residential dwelling units and generate less residents than the Project, which may make it more difficult to achieve the necessary reductions contained in the SCAG RTP/SCS.</p> <p>Impacts would be potentially significant.</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
Public Services	<p>The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection (with implementation of the identified mitigation measure); Police protection; Schools; Parks; and/or Other public facilities.</p> <p>Less than significant impacts with mitigation.</p>	<p>Less – This Alternative not result in increased demand for fire or police protection services, school services, or library services.</p> <p>No impacts would occur.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit at a much lesser intensity, on public services than the Project.</p> <p>Impacts would be less than significant.</p>	<p>Same – The Alternative would increase demand for fire and police protection and library services, which would be offset through development impact fees and likely require the same mitigation measure as the Project.</p> <p>Impacts would be less than significant with mitigation.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit less intense, on public services than the Project.</p> <p>Impacts would be less than significant.</p>	<p>Same – The Alternative proposes residential uses, which will result in increased demand, albeit less intense, on public services than the Project.</p> <p>Impacts would be less than significant.</p>
Recreation	<p>The Project would not result in the increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or to recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.</p> <p>Less than significant impacts</p>	<p>Greater – The Project’s parks and recreational facilities would not be built, which would improve the parkland-to-resident service ratios in the city.</p> <p>Impacts would be less than significant.</p>	<p>Greater – This Alternative does not propose the development of parks and recreational facilities, which further exasperates the parkland-to-resident service level ratios in the City.</p> <p>Impacts would be significant.</p>	<p>Greater – The Alternative would develop park and recreational facilities on site to serve the increased demand of the development; however it would be to a lesser degree than the Project.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would generate less park land requirements due to the reduction in dwelling units, but would still include private recreation areas in addition to increased Natural Open Space.</p> <p>Impacts would be less than significant.</p>	<p>Same – This Alternative would generate less park land requirements due to the reduction in dwelling units, but would still include private recreation areas.</p> <p>Impacts would be less than significant.</p>
Transportation / Traffic	<p>The Project would not result in a change in air traffic patterns; substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); result in inadequate emergency access; or conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.</p> <p>With implementation of the identified mitigation measures, the Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit; conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;</p> <p>Less than significant Project-specific impacts with mitigation;</p>	<p>Less – No generation of new daily trips.</p> <p>No impacts would occur.</p>	<p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale.</p> <p>Project level impacts would be less than significant, but could require similar mitigation measures as the Project; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>Less – This Alternative would generate less vehicle trips, thus resulting in lessened impacts to levels of service on area-wide streets. Newer/revised mitigation measures would likely be required of this Alternative to address existing and projected roadway and freeway conditions.</p> <p>Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale.</p> <p>Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>	<p>Less – This Alternative would generate fewer vehicle trips thus, less impact to level of service on area-wide streets. Mitigation measures similar to the Project’s will likely be required, but to a lesser, more applicable scale.</p> <p>Less than significant Project level impacts with mitigation; cumulative impacts would remain significant due to unknown timing of improvements.</p>

Environmental Issue	Proposed Project	Alternative 1 No Project/No Development	Alternative 2 Existing Land Use Designation	Alternative 3 Existing Entitlements / Sunrise Ranch	Alternative 4 Smaller Project	Alternative 5 Eastern Mitigation Bank
	significant cumulative impacts due to uncertain construction timing.					
Utilities / Service Systems	The Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; result in insufficient water supplies available to serve the project from existing entitlements and resources; result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; comply with federal, state, and local statutes and regulations related to solid waste; 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; increase demand for other utility and service systems, the construction of which could cause significant environmental effects; or 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. Less than significant impacts.	Less – This Alternative would not increase demand for water or sewer service, electricity or cabling infrastructure, and would not result in increases to solid waste amounts. No impacts would occur.	Less – This Alternative would still require the extension of utility and service system infrastructure to the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project's. Impacts would be less than significant.	Less – This Alternative would require less potable water and electricity, and generate less sewer wastewater and solid waste than the proposed Project. Less than significant impacts.	Less – This Alternative would still require the extension of utility and service system infrastructure in the west end of the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project's. Impacts would be less than significant.	Less – This Alternative would still require the extension of utility and service system infrastructure in the west end of the Project site. However, demand for potable water, sewer, solid waste, and electricity would be lesser than that of the Project's. Impacts would be less than significant.
Environmentally Superior to Proposed Project?	Not applicable	Yes	No	No	No	No
Meets Project Objectives?	Yes	No – With no development proposed, this Alternative does not meet any of the objectives of the proposed Project.	No – This Alternative does not meet the majority of Project objectives because it only contemplates one housing type and density. No additional public facilities would be constructed on-site and the recreational opportunities would not be realized.	No – This Alternative does not meet the majority of Project objectives; it is an outdated development pattern that does not provide the mix of housing types and amenities offered by the Project nor does it protect natural open space as to emphasize the natural setting.	No – This Alternative does not meet the majority of Project objectives, because it does not provide the mix of housing types and amenities offered by the Project and would generate fewer funds to the County of Orange due to less revenue-generating uses.	No – This Alternative does not meet the majority of Project objectives, because it does not provide the mix of housing types and amenities offered by the Project and would likely restrict public access in the mitigation bank area for trail use.

8.8 Environmentally Superior Alternative

State *CEQA Guidelines* Section 15126.6(e)(2) requires the identification of the environmentally superior alternative. Of the alternatives evaluated above, the Alternative 1 – No Project/No Development Alternative is the environmentally superior alternative, because the site would remain in its existing condition with respect to minimal impacts compared to the proposed Project. However, Alternative 1 does not meet the Project Objectives or City General Plan designation, and continues some potentially significant impacts such as water quality due to existing runoff patterns.

The State *CEQA Guidelines* also require the identification of another environmentally superior alternative if the No Project/No Development Alternative is the environmentally superior alternative. It should be noted that the proposed Project did result in significant and unavoidable impacts to Air Quality and cumulatively significant impacts to air quality and traffic. The alternatives selected for examination in this EIR also have similar impacts to the proposed Project. Nonetheless, an environmentally superior alternative as required by CEQA has been identified.

“CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian” (State *CEQA Guidelines* Section 15021(d)). Thus, an alternative need be selected under CEQA.

Of the remaining project alternatives, Alternative 4 –Smaller Project Alternative is considered environmentally superior. Alternative 4 would allow for the development of approximately 1,400 residential dwelling units and 5.7 acres of neighborhood commercial uses on the Project site. Alternative 4 would result in less impacts to air quality, noise, and traffic due to a reduction in vehicle trips and would lessen the biological impacts by conserving more open space. Alternative 4 would also generate less demand for public utilities because the eastern portion of the site would remain undeveloped. However, the air quality and cumulative traffic impacts would not be reduced to less than significant levels. Additionally, Alternative 4 would result in greater impacts with respect to GHG emissions and population projections because a reduced development would potentially reduce the TDM and VMT reductions associated with the reduced Project size which may have a smaller effect on GHG emissions making it more difficult to meet the AB 32 reduction target. Moreover, the population projections provided to SCAG for use in the development of the RTP/SCS included the proposed Project. Therefore, a reduction in development under Alternative 4 may also make it more difficult to achieve the necessary reductions contained in the SCS, which aim to reduce GHG emissions in the SCAG region. This alternative would meet some of the Project Objectives, but would limit the housing types that could be constructed, the amount of neighborhood commercial opportunities, and provide less recreational amenities.

The proposed Project will result in significant and unavoidable impacts even after implementation of mitigation. However, the Alternatives will likely result in similar significant impacts and where some

impacts are reduced by an alternative, others are increased. Therefore, none of the Alternatives will effectively lessen or avoid significant impacts that otherwise result from the proposed Project.

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