DRAFT

ENVIRONMENTAL IMPACT REPORT

No. EA-2017-1396

STATE CLEARINGHOUSE NO. 2014031045

Murrieta Hills Specific Plan Amendment

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1.0 EXECUTIVE SUMMARY

1.1 PURPOSE

The purpose of this Draft Environmental Impact Report (Draft EIR) is to inform decision-makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the Murrieta Hills Specific Plan Amendment (MHSPA or Project).

This Draft EIR (State Clearinghouse No. 2014031045) for the MHSPA was prepared to: (1) identify the potential environmental impacts of the Project utilizing the revised CEQA Appendix G Environmental Checklist Form (2019); (2) discuss alternatives to the Project; and (3) propose mitigation measures that will avoid, offset, or minimize significant environmental impacts of the Project. This document was prepared in conformance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). More specifically, this summary has been prepared in accordance with California Public Resources Code, Section 21061 and CEQA Guidelines §15123. *Summary.*

1.2 PROJECT SUMMARY

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

PROJECT DESCRIPTION

The Project proposes the development of a master-planned residential community that would consist of a mix of the following land uses:

- Approximately 972-acre MHSPA Project area.
- A maximum of 750 residential units comprised of:
    - A maximum of 497 single-family residential units on approximately 198 acres.
    - A maximum of 60 executive[1] single-family residential units on approximately 50 acres.
    - Approximately 13 acres of mixed-use development (a maximum of 193 multi-family residential units, retail, professional office, and other non-residential, service-oriented uses).

[1] The executive single-family residential component provides the largest residential lots, requiring a minimum lot size of 10,000 square feet.

- A community commercial planning area (PA) comprised of approximately 18 acres. Anticipated land uses include restaurants, a grocery store, lodging, or other commercial land uses.
- Approximately 652 acres of open space, of which approximately 609 acres will be dedicated to the Western Riverside County Regional Conservation Authority (RCA) for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). An approximately 37-acre linear nature park is also proposed.
- Approximately 41 acres of circulation improvements including approximately 20 acres for the backbone street system to serve the MHSPA area; five acres of right-of-way dedication for the future I-215/Keller Road interchange; and approximately 16 acres street right-of-way dedication and slopes outside of the right-of-way.
- Off-site Project improvements will include utility improvements within Keller Road and Zeiders Road, and the extension of McElwain Road from Linnel Lane to Keller Road.

The Project includes various discretionary approvals including a sphere of influence amendment and annexation into the City of Murrieta, a general plan amendment, specific plan amendment, zoning reclassification, tentative tract map to subdivide property, and adoption of a development agreement. These actions are described in greater detail in EIR Section 3.0, *Project Description* and the *Murrieta Hills Specific Plan Amendment 012-3164* (2019). Project background and objectives are also discussed in Section 3.0.

1.3 SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The following table is a summary of significant impacts and proposed mitigation measures associated with the Project as identified in this EIR. Refer to Sections 4.1 through 4.16, for a detailed description of the environmental impacts and mitigation measures for the Project. All impacts of the Project can be mitigated to less than significant levels with the exception of aesthetics, air quality, greenhouse gas emissions, noise and transportation.

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
Section 4.1, Aesthetics		
Impact 4.1-3 Would the Project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Significant and Unavoidable Impact	Impact is significant and unavoidable.
Section 4.2, Air Quality		
Impact 4.2-1 Would the Project conflict with or obstruct implementation of the applicable air quality plan?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. Refer to **MM AQ-1** to **MM AQ-13** below.
Impact 4.2-2 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?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. Refer to **MM AQ-1** to **MM AQ-13** below. **MM AQ-1:** Prior to issuance of any Grading Permit, the City Engineer and the Building Official shall confirm that the Grading Plan, Building Plans, and specifications that, in compliance with then-current SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the SCAQMD's Rules and Regulations. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Implementation of the following measures will reduce short-term fugitive dust impacts on nearby sensitive receptors: ▪ All active portions of the construction site shall be watered every three hours during daily construction activities and when dust is observed migrating from the Project site to prevent excessive amounts of dust.

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		▪ Pave or apply water every three hours during daily construction activities or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas. More frequent watering shall occur if dust is observed migrating from the site during site disturbance. ▪ Any on-site stockpiles of debris or on-site haul roads, dirt, or other dusty material shall be enclosed, covered, or watered three times daily, or non-toxic soil binders shall be applied. ▪ All grading and excavation operations shall be suspended when wind speeds exceed 25 mph. ▪ Disturbed areas shall be replaced with ground cover or paved immediately after construction is completed in the affected area. ▪ Track-out devices such as gravel bed track-out aprons (three inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) shall be installed to reduce mud/dirt track-out from unpaved truck exit routes. Alternatively, a wheel washer shall be used at truck exit routes. ▪ On-site vehicle speed shall be limited to 15 mph on unpaved roads. ▪ All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site. ▪ Reroute construction trucks away from congested streets or sensitive receptor areas. **MM AQ-2:** All trucks that are to haul excavated or graded material on-site shall comply with State Vehicle Code Section 23114 (Spilling Loads on Highways), with special attention to Sections 23114(b)(F), (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads. Prior to the issuance of grading permits, the Project Applicant shall demonstrate to the City of Murrieta City Engineer how the Project operations subject to that specification during hauling activities shall comply with the provisions set forth in Sections 23114(b)(F), (e)(4) as amended.

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		MM AQ-3: Prior to issuance of a Grading Permit, the Project Applicant shall indicate on construction plans, to the satisfaction of the Development Services Director, that all Phase 1 and Phase 2 construction equipment meets U.S. EPA Tier 4 Final non-road compression-ignition engine standards or better. **MM AQ-4:** Project Applicant shall require by contract specifications that construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in Project construction documents, which shall be reviewed by the City of Murrieta prior to issuance of a grading permit. **MM AQ-5:** Project Applicant shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, be turned off when not in use for more than 30 minutes. Diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds shall be turned off when not in use for more than five minutes. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta. **MM AQ-6:** Project Applicant shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta. **MM AQ-7:** Project Applicant shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to facilitate smooth traffic flow. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta. **MM AQ-8:** Prior to issuance of building or grading permits, whichever is issued earlier, notification shall be mailed to property owners of all land within

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		300 feet of a Project site within the Specific Plan providing a schedule for construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager that will be available on-site to monitor construction activities. The construction manager shall be responsible for complying with all Project requirements related to PM10 generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contact information for the community liaison and construction manager will be located at the construction office, City Hall, the police department, and a sign on site. **MM AQ-9:** Project Applicant shall require by contract specifications that the architectural coating (paint and primer) products used will have a VOC rating of 10 grams per liter or less. Such products are considered "super-compliant" by the SCAQMD. Contract specifications shall be included in the Project construction documents, which shall be reviewed and approved by the City of Murrieta. More information about super-compliant architectural coatings, including a list of super-compliant coatings manufactures, can be found on the SCAQMD's website at: http://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings. **MM AQ-10:** Project Applicant shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the Project construction documents, which shall be reviewed and approved by the City of Murrieta. **MM AQ-11:** Project Applicant shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the Project construction documents, which shall be reviewed and approved by the City of Murrieta.

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		MM AQ-12: The Project Applicant or its designee shall submit a weekly report to the City that demonstrates compliance with **MM AQ-1** through **MM AQ-11** and **MM AQ-13**. **MM AQ-13:** PA 8 has been planned to exclude residential or other sensitive land uses within 500 feet of the freeway as part of a Mixed-Use land use designation, consistent with City of Murrieta GP Policy AQ 2.2. Should the City's GP Policy be changed, or the City otherwise allow for sensitive uses within 500 feet of the freeway, the following mitigation measures shall be reflected on PA 8 development applications including building permits and landscaping plans. The following techniques to reduce cancer risk shall be implemented in the proposed project: (a) Residential HVAC within 500 feet of I-215 Freeway. Residential development proposed within 500 feet of the I-215 Freeway shall install a sealed HVAC system in conjunction with a MERV 13 or higher rated filter. The sealed air system will be designed so that all ambient air introduced into the interior living space would be filtered through MERV 13 or higher rated filters to remove DPM and other particulate matter. The MERV 13 or higher rated filter is designed to remove approximately 74 percent of particulates of 0.3 microns or larger in size from the ambient air that is introduced to the system. Therefore, a 74 percent reduction of particulate matter is anticipated with respect to this measure. The installation of the filters shall be confirmed by the City's Building Official prior to issuance of certificate of occupancy. Additionally, the following measures shall be implemented: i) The potential health impacts shall be disclosed to prospective residents within Planning Area 8 regarding living in close proximity of I-215 and the reduced effectiveness of air filtration system when windows are open and/or when residents are outdoor (e.g., in the common areas); ii) The filters would need to be changed semi-annually and the building or leasing operator and/or the Homeowners Association of the multi-

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		family buildings would be required to provide a report to the City's building official or designee, semi-annually, to ensure compliance; iii) Information shall be provided to residents on where the MERV filters can be purchased upon lease signing; iv) Information shall be provided to residents on the potential increase in energy costs for running the HVAC system to prospective residents; and v) Information shall be provided to residents on the recommended schedules (e.g., once a year or every six months) for replacing the enhanced filtration units. (b) Installation of Air Intakes for Residential HVAC units. For all residential buildings proposed within 500 feet of the I-215 freeway, residential building air intakes shall be installed on the façade furthest away from the I-215 freeway. This will ensure that air drawn into the building has lower possible particulate concentrations. (c) PA 8 Perimeter Landscaping. The landscaping plan shall be augmented to include the use of a tiered vegetation scheme along the eastern project boundaries of Planning Area 8, with a preference for Evergreens over deciduous species. Tree selection shall match the tree's water requirements with the irrigation anticipated for the area.
Section 4.7, Greenhouse Gas Emissions		
Impact 4.7-1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. **MM GHG-1:** Prior to the issuance of Project permits, the Project Applicant shall prepare and implement a GHG Reduction Plan, to the satisfaction of the City, that includes the following list of GHG emissions reduction measures. Refinement of the estimated Project GHG emissions shall be completed as part of the GHG Reduction Plan in order to reflect the most current and accurate data available regarding the Project's estimated emissions (including emission rates). The Project Applicant may submit a report to the City that

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		substantiates why specific measures are considered infeasible or at that point in time and identify alternate measures that would achieve equivalent reductions. Recommended measures for reducing operational GHG emissions are listed below. Every five years, beginning one year after full operation of the first phase or subdivision until five years after the last certificate of occupancy of the last phase or subdivision is issued, the Project Applicant shall submit a GHG Emissions Reduction Accounting and Program Effectiveness Report for the Project. The report shall be submitted by December 31 of each reporting year. The report shall include annual GHG emissions for the developed and operational portion of the Project, whether the emissions meet the applicable GHG target, and if not, additional feasible measures that shall be implemented. ▪ **Non-Residential Electric Vehicle Charging.** Prior to the issuance of commercial or recreational building permits, the Project Applicant or its designee shall submit building design plans to the City that demonstrate that the parking areas for commercial and recreational buildings in the MHSPA area are equipped with EV charging stations that provide charging opportunities to at least 7.5 percent of the total number of required parking spaces. The EV charging stations shall achieve a similar or better functionality as a Level 2 charging station. In the event that the installed charging stations use more superior functionality/technology other than Level 2 charging stations, the parameters of the mitigation obligation (i.e., number of parking spaces served by EV charging stations) shall reflect the comparative equivalency of Level 2 charging stations to the installed charging stations on the basis of average charge rate per hour. For purposes of this equivalency demonstration, Level 2 charging stations shall be assumed to provide charging capabilities of 25 range-miles per hour. ▪ **Residential Electric Vehicle Charging.** Prior to the issuance of residential building permits, the Project Applicant or its designee shall submit building design plans to the City for review and approval, which demonstrate that

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		each residence within the Murrieta Hills Specific Plan area subject to application of Title 24, Part 6, of the CCR shall be equipped with a minimum of one single-port EV charging station. Each charging station shall achieve a similar or better functionality as a Level 2 charging station. ▪ **Vehicle Trip Reduction.** Develop a qualifying Commute Trip Reduction (CTR)/TDM plan to reduce mobile GHG emissions for all uses prior to construction. The TDM plan shall be approved by the Development Services Director prior to the issuance of building permits and incorporated into the Project's Codes Covenants and Restrictions (CC&Rs). The TDM plan shall discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The following measures shall be incorporated into the TDM plan. ○ The Project Applicant shall consult with the local transit service provider on the need to provide infrastructure to connect the Project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site. ○ **Non-Residential Uses.** The portion of the TDM plan for non-residential uses shall include, but not be limited to the following potential measures: ride-matching assistance, preferential carpool parking, flexible work schedules for carpools, half-time transportation coordinators, providing a web site or message board for coordinating rides, designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles, and including bicycle end of trip facilities. This list may be updated as new methods become available. Verification of this measure shall occur prior to building permit issuance for the commercial l uses. ○ **Residential Uses.** Upon a residential dwelling being sold or offered for sale, the HOA shall notify and offer to the buyer or prospective buyer,

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		as soon as it may be done, materials describing public transit, ridesharing, and nonmotorized commuting opportunities available in the vicinity of the Project. Such information shall be transmitted no later than the close of escrow. This information shall be submitted to the City of Murrieta Development Services Department for review and approval, prior to the issuance of the first certificate of occupancy. This information shall be updated by the HOA and approved by the Development Services Department on an annual basis. ▪ **Water Efficiency.** Install water-efficient irrigation systems and landscape design including reduced turf. This measure shall be verified prior to building permit issuance. ▪ **Landscaping Equipment.** A disclosure will be required on the use of electric, as opposed to gas-powered, lawn and landscaping equipment for both HOA and private residences. A disclosure will also be required in the Master CC&R along with a Sales disclosure.
Impact 4.7-2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. Refer to **MM GHG-1** above.
Section 4.11, Noise		
Impact 4.11-1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. **MM NOI-1:** For construction activities (other than blasting) within 200 feet of sensitive receptors, the construction contractor shall implement the following measures during construction: ▪ Construction activities that could generate high noise levels at residences shall be scheduled during times that would have the least impact on sensitive receptor locations. This could include restricting construction activities in the areas of potential impact to middle hours of the workday,

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		such as from 10:00 a.m. to 4:00 p.m. Monday to Friday when residents would be least likely to be home. ▪ Stationary construction noise sources, such as temporary generators, shall be located as far from nearby noise-sensitive receptors as possible. ▪ Trucks shall be prohibited from idling along streets serving the construction site where noise-sensitive residences are located. ▪ The construction contractor shall prohibit the use of heavy-duty graders or dozers (i.e., equipment that generates noise levels greater than 81 dBA Lmax at 50 feet) within 200 feet sensitive receptors along the McElwain Road extension. Excavators, loaders, backhoes, and paving equipment within 200 feet are acceptable. Alternatively, the construction contractor will install temporary noise barriers that would completely shield the equipment from sensitive receptors within 200 feet. The temporary barriers shall meet the following standards: ○ The noise barriers shall be a minimum height of 12 feet high. The barriers shall be solid from the ground to the top of the barrier and have a weight of at least 2.5 pounds per square foot, which is equivalent to ¾ inch thick plywood. ○ The barrier design shall optimize the following requirements: (1) the barrier shall be located to maximize the interruption of line of sight between the equipment and the receptor; (2) the length and of the barrier shall be selected to block the line of sight between the construction area and the receptors; (3) the barrier shall be located as close as feasible to the receptor or as close as feasible to the construction area. **MM NOI-2: Blasting Plan.** Prior to issuance of a grading permit, the applicant shall submit a Blasting Plan for review and approval by the City of Murrieta. The Blasting Plan shall be prepared by a qualified blast contractor, who shall be employed to ensure that charge size, shot timing, and cover material are sufficient to ensure that blasting noise at nearby sensitive receptors and the nearby open space do not exceed applicable thresholds. The blast contractor

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		shall perform test shots in order to determine the drill hole depth, charge size, and depth of burial (stemming) for the charges prior to finalizing the blasting program because of the proximity to sensitive receptors. After construction has concluded, the blast contractor shall prepare a final letter report that details how the Blasting Plan was implemented and compliance with noise standards were met. The Project Applicant shall extend the offer to the occupant(s) of the residence at 27740 Linnel Lane and 35256 McElwain Road for temporary relocation during blasting along McElwain Road should blasting be predicted to exceed 65 dBA interior noise levels. The relocation assistance shall only be for temporary housing and reasonable expenses during Project blasting along McElwain Road extension. **MM NOI-3:** Construction-related noise shall be prohibited within 200 feet of the MSHCP Conservation Area during the typical breeding season of February 15 to August 31 (note that this period may be extended to start January 1 if raptor surveys (required in MM BIO-3) determine that active nests are found. Construction activity within and adjacent to any occupied sensitive habitat areas must not exceed 75 dBA Leq, or ambient noise levels if higher than 75 dBA Leq, during the breeding season. Prior to issuance of land development permits, including clearing or grubbing and grading and/or construction permits for areas within or adjacent to the MSHCP Conservation Area, the applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee), an acoustical analysis to demonstrate that the 75 dBA Leq noise level is not exceeded at the location of any occupied sensitive habitat areas as determined based on the results the required biological pre-construction surveys. The acoustical analysis shall describe the methods by which construction noise shall not exceed 75 dBA Leq. Noise abatement methods may include, but are not limited to, reoperation of specific construction activities, installation of noise abatement at the source, and/or installation of noise abatement at the receiving areas.

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		MM NOI-4: Prior to the issuance of building permits for the single-family residences in PA 2, the Project Applicant shall require the design and construction of, to the satisfaction of the City of Murrieta Building Official, a minimum 5-foot high sound wall be constructed in PA 2. The wall height shall be measured from the graded pad elevation of the residential lot. Acceptable materials for the construction of the barriers shall have a density of 3.5 pounds per square foot of surface area and may be composed of the following: masonry block, stucco veneer over wood framing (or foam core), glass, Plexiglass, or Lexan 9¼ inch thick). The barrier may also be constructed out of a combination of the above listed materials. **MM NOI-5:** Prior to the issuance of the first Building Permit for PA 9, a noise assessment shall be prepared. The noise assessment shall ensure that commercial property loading docks are shielded from existing and proposed residences so that the City's noise standards are not exceeded. The noise assessment shall identify any noise control measures (e.g., barriers, shielding, etc.) necessary to comply with the City's noise regulations. Individual future commercial users shall implement all noise control measures identified in the assessment. **MM NOI-6:** The Project Applicant or its designee shall submit a weekly report to the City that demonstrates compliance with MM NOI-1 through MM NOI-5 and MM NOI-7.
Impact 4.11-2 Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?	Significant and Unavoidable Impact	Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable. **MM NOI-7:** The construction contractor shall provide written notification to all property owners within 200 feet of construction activities, including blasting, at least three weeks prior to the start of construction activities informing them of the estimated start date, duration of daytime vibration-generating construction activities, and type and patterns of audible warning and all-clear signals to be used before and after blasting. The City shall provide a phone number for the property owners to call if they have questions or

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		concerns. The notification will also include a discussion of how the blasting will affect traffic, access, and other appropriate issues that may be relevant to the property owners.
Section 4.13, Transportation		
Impact 4.13-1 Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Potentially Significant and Unavoidable Impact (for physical improvements at locations that are either unfunded or in other jurisdictions)	**MM TRAN-1:** The Project Applicant shall construct all Project-related transportation improvements identified on the Tentative Tract Map, consistent with phasing recommendations by the City Engineer, including all internal roadways, McElwain Road extension and half-width improvements to Keller Road along the Project frontage. Any off-site improvements may be considered for in lieu credit toward traffic impact fees as determined appropriate by the City of Murrieta. Each site plan shall include a TIA Verification Memo to confirm site-specific development proposals are consistent with overall TIA assumptions and mitigation recommendations such that no new or substantially more severe impacts would occur (Specific Plan Section 8.8 allows for substantial conformance determinations and density transfers provided that the overall Specific Plan densities are not exceeded). **MM TRAN-2:** For any off-site improvements noted below, if not constructed or fully funded by others, the Project Applicant shall pay a fair share fee. For City of Murrieta improvements, this fair share payment shall be at time of building permit issuance. For improvements in other jurisdictions, the Project Applicant or City of Murrieta shall enter into an MOU with the affected jurisdiction(s) regarding fair share payment timing. The Project Applicant's fair share payment to a jurisdiction other than City of Murrieta shall only be made if there is an established mechanism for receiving the funds and ensuring the funds are directly allocated toward the identified improvement in a timely manner. **MM TRAN-3: Intersection 6 – Antelope Road / Scott Road (Murrieta)** – The Project Applicant shall make a fair share contribution to implement the following:

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		(a) Widen the eastbound approach from one left-turn lane, one through lane, and one shared through / right-turn lane to consist of two left-turn lanes, two through lanes and one right-turn lane. **MM TRAN-4: Intersection 20 – Whitewood Road / Clinton Keith Road (Murrieta)** – The Project Applicant shall make a fair share contribution to implement the following: (a) Widen the southbound approach from one left-turn lane, one through lane, and one shared through / right-turn lane to consist of one left-turn lane, two through lanes, and one right-turn lane with overlap phasing (Year 2023 With Cumulative). (b) Widen the northbound approach from one left-turn lane, one through lane and one shared through / right-turn lane to consist of two left-turn lanes, one through lane and one shared through / right-turn lane (Year 2031 Project Buildout Plus Cumulative). (c) Widen the southbound approach from two left-turn lanes, one through lane and one shared through / right-turn lane to consist of two left-turn lanes, two through lanes and one right-turn lane with overlap phasing (Year 2035 Project Buildout Plus Growth). **MM TRAN-5: Intersection 14 – McElwain Road / Linnel Lane (Murrieta)** – The Project Applicant shall make a fair share contribution to implement the following: (a) Signalize the intersection (Year 2031 Project Buildout Plus Growth). **MM TRAN-6: Intersection 16 – Murrieta Oaks East Avenue / Clinton Keith Road (Murrieta)** – The Project Applicant shall make a fair share contribution to implement the following: (a) Widen the eastbound approach from one left-turn lane, two through lanes and one right-turn lane to consist of one left-turn lane, two through lanes and one shared through / right-turn lane (Year 2031 Project Buildout Plus Cumulative).

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		MM TRAN-7: Intersection 7 – Zeiders Road / Keller Road (Murrieta/Menifee) – The Project Applicant shall make a fair share contribution to implement the following: (a) Signalize the intersection. (b) Widen the northbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn / through lane and one right-turn lane with right-turn overlap phasing. (c) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane. (d) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane. (e) Convert from a two-way stop control to an all- way stop controlled intersection (Year 2023 With Cumulative). (f) Widen the northbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn, one through lane and one right-turn lane (Year 2023 With Cumulative). (g) Widen westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2023 With Cumulative). (h) Widen westbound approach from one left-turn lane and one share through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2028 With Cumulative). (i) Widen eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2028 With Cumulative). (j) Widen southbound approach from one shared left-turn / through / right-turn lane to consist of a left-turn lane and one shared through / right-turn lane (Year 2028 With Cumulative).

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		(k) Widen the northbound approach from one shared left-turn / through / right-turn to consist of one left-turn lane, one through lane and one right-turn lane with right-turn overlap phasing (Year 2035 Project Buildout Plus Growth). (l) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth). (m) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth). (n) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth). **MM TRAN-8: Intersection 2 – Murrieta Road / Scott Road (Menifee)** – The Project Applicant shall make a fair share contribution to implement the following: (a) Signalize the intersection. (b) Widen the eastbound approach from one shared left-turn / through lane to consist of one left-turn lane and one through lane (Year 2023 Plus Growth). (c) Widen the southbound approach from one shared left-turn / right-turn lane to consist of one left-turn lane and one right-turn lane (Year 2023 With Cumulative). (d) Widen the westbound approach from one shared through / right-turn lane to consist of one through lane and one right-turn lane (Year 2023 With Cumulative). (e) Widen the westbound approach from one through lane and one right-turn lane to consist of one through lane and one shared through / right-turn lane (Year 2031 Project Buildout Plus Growth).

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		(f) Widen the eastbound approach from one left-turn lane and one through lane to consist of two left-turn lanes and one through lane (Year 2031 Project Buildout Plus Growth). (g) Implement right-turn overlap phasing in the southbound approach (Year 2031 Project Buildout Plus Growth). **MM TRAN-9: Intersection 3 – Haun Road-Zeiders Road / Scott Road (Menifee)** – The Project Applicant shall make a fair share contribution to implement the following: (d) Widen the southbound approach from one left-turn lane and one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane. (e) Widen the eastbound approach from one left-turn lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane and one shared through / right-turn lane. (f) Implement right-turn overlap phase at the westbound approach. (g) Widen the southbound approach from one left- turn lane and one shared through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2023 With Cumulative). (h) Widen the eastbound approach from one left-turn lane, one through lane and one shared through / right-turn lane to consist of one left-turn lane, two through lanes and one shared through / right-turn lane (Year 2023 With Cumulative). (i) Widen the westbound approach from one left-turn lane, two through lanes, and one right-turn lane to consist of two left-turn lanes, two through lanes, and two right-turn lanes (Year 2023 With Cumulative). (j) Widen the northbound approach from one left-turn lane, one through lane, and one right-turn lane to consist of two left-turn lanes, one through lane and one right-turn lane with overlap phasing (Year 2031 Project Buildout Plus Cumulative).

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		(k) Widen the southbound approach from two left-turn lanes and one shared through / right-turn lane to consist of two left-turn lanes, one through lane and one right-turn lane (Year 2031 Project Buildout Plus Cumulative). (l) Widen the westbound approach from two left-turn lanes, two through lanes and two right-turn lanes to consist of two left-turn lanes, three through lanes and two right-turn lanes (Year 2031 Project Buildout Plus Cumulative). (m) Widen the eastbound approach from one left-turn lane, two through lanes and one shared through / right-turn lane to consist of two left-turn lanes, three through lanes, and one right-turn lane (Year 2031 Project Buildout Plus Cumulative). (n) Add a right-turn overlap phasing in the northbound direction (Year 2035 Project Buildout Plus Growth). (o) Widen the westbound approach from two left-turn lanes, three through lanes and one right-turn lane to consist of two left-turn lanes, three through lanes and two right-turn lanes direction (Year 2035 Project Buildout Plus Growth). **MM TRAN-10: Intersection 1 – Sunset Avenue - Cottonwood Canyon Road / Bundy Canyon Road (Wildomar/Menifee)** – The Project Applicant shall make a fair share contribution to implement the following: (a) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn / through lane and one shared through / right-turn lane. (b) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn/through lane and one shared through / right-turn lane (Year 2023 With Cumulative). (c) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2023 With Cumulative). (d) Signalize the intersection (Year 2028 With Cumulative).

Table 1-1: Summary of Significant Impacts and Proposed Mitigation Measures

Resource Impact	Level of Significance	Mitigation Measure(s)
		(e) Widen the eastbound approach from one shared left-turn / through lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2028 With Cumulative). (f) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2028 With Cumulative). (g) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth). (h) Widen the eastbound approach from one shared left-turn / through lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth). (i) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

1.4 SUMMARY OF PROJECT ALTERNATIVES EVALUATED

Below is a summary of the alternatives to the Project considered in Section 5.0, *Alternatives to the Proposed Project*. For detailed information on Project alternatives, see Section 5.0.

ALTERNATIVE 1 - NO PROJECT/NO DEVELOPMENT

Under Alternative 1, the Project site remains in its current undeveloped condition with limited agricultural activity. The original Murrieta Hills Specific Plan No. SPM-4, approved by the City of Murrieta in 1995 (City Council Resolution No. 95-353), would remain the governing document for development of the Project site. This Alternative fails to meet the Project's basic objectives and is therefore not under consideration at this time.

ALTERNATIVE 2 - NO PROJECT/EXISTING COUNTY GP LAND USE DESIGNATIONS (REDUCED DENSITY)

Under Alternative 2, the Project site is developed pursuant to current County GP Land Use Designations of Rural Mountainous (RM), Rural Community – Low Density Residential (RC-LDR), and Rural Community – Estate Density Residential (RC-EDR). RM allows for 1 DU/10-acre minimum lot size; RC-LDR allows for 1 DU/0.5 to 1-acre parcel size; and RC-EDR allows for 1 DU/2 to 5-acre parcel size. However, clustering is encouraged at an allowed density of 1 DU/0.5-acre lot size. Dedication of 60 percent (approximately 583 acres) of the Project site as MSHCP open space is assumed. For the purposes of this EIR, this Alternative is evaluated at the RM clustered density for the remaining approximately 389 acres, equating to approximately 778 DUs. This Alternative is under consideration but is being dismissed because it does not meet the Project objectives which include providing a variety of housing opportunities single-family residential and multi-family residential as part of the mixed-use planning area) and opportunity for commercial development. See Section 5.0 for Project objectives.

ALTERNATIVE 3 - PREVIOUSLY APPROVED SPECIFIC PLAN

Under Alternative 3, the previously approved Specific Plan No. SPM-4 would be implemented which allowed a maximum of 1,585 dwelling units, plus a 184-acre memorial park, a 46.5-acre linear park/riparian corridor, a 10-acre elementary school and a 10-acre neighborhood commercial/office center. This Alternative is under consideration but is being dismissed because it does not meet the Project objectives which include preserving over 600 acres of natural open space under the Western Riverside County MSHCP. See Section 5.0 for Project objectives.

ALTERNATIVE 4 - ALTERNATIVE SITE

Not considered applicable or feasible, as the Project is an amendment to a previously approved Specific Plan on the site. In addition, the Project Applicant does not control other undeveloped property of similar size within the City of Murrieta or in the immediate area. This Alternative would not achieve the Project objective of updating the previously-approved 1995 Murrieta Hills Specific Plan No. SPM-4 to implement a comprehensive and cohesive plan for the physical and economic development of the MHSP property. No alternative sites were suggested during the Project's NOP scoping process. Lastly, an Alternative Site would not contribute to the conservation of MSHCP Cell Group C, the assembly of Proposed Linkage 8, or the assembly of Proposed Constrained Linkage 16. Nor the associated conservation of wildlife species,

habitat, and habitat linkages or movement corridors. For the above reasons, the Alternative Site Alternative was rejected from further consideration.

ALTERNATIVE 5 – ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines requires that an Environmentally Superior Alternative be identified; that is, an alternative that would result in the fewest or least significant environmental impacts. If the "No Project" Alternative is the environmentally superior alternative, CEQA Guidelines Section 15126.6(e)(2) requires that another alternative that could feasibly attain most of the Project's basic objectives be chosen as the environmentally superior alternative.

Following release of the NOP, and as a result of discussions and consultation with area stakeholders, the Project's land use plan was substantially modified to further reduce potentially significant impacts. The Project's land use plan, as currently proposed, was adopted only after extensive environmental analyses were conducted and extensive discussions were held with the Project Applicant regarding realistic expectations for the Project. As a result of the extensive analyses and discussions, the development footprint was reduced to less than that of the previously approved Specific Plan No. SPM-4 and that identified in the NOP. The MHSPA Project includes certain modifications that are environmentally preferable, reduce Project impacts, implement design alternatives, and directly address stakeholder concerns raised throughout the EIR process. This modification can be considered an "alternative" to the previously approved Specific Plan No. SPM-4 and an "environmentally superior alternative" to the initial revised project land use plan that was originally identified in the NOP. This modified land use plan has been reflected in the proposed Specific Plan and Tract Map and is addressed as the Project throughout this EIR.

Since the "No Project / No Development" Alternative is environmentally superior, the EIR has identified the proposed MHSPA Project as the Environmentally Superior Alternative.

1.5 MITIGATION MONITORING AND REPORTING

CEQA requires public agencies to adopt monitoring and reporting programs to ensure compliance with mitigation measures adopted or made conditions of Project approval in order to mitigate or avoid the significant environmental effects identified in EIRs. A Mitigation Monitoring and Reporting Program (MMRP) incorporating the mitigation measures set forth in this EIR will be prepared and approved by the Lead Agency and other responsible agencies concurrently with adoption of the findings of this EIR and prior to approval of the Project.

1.6 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

CEQA Guidelines §15123 (b)(2) and (3) require that the EIR summary identify areas of controversy known to the Lead Agency, issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether, or how to, mitigate the significant effects.

Based on the Lead Agency's review of available information and comments received from the general public and other public agencies in response to the Notice of Preparation and public scoping meetings (Appendix 9.1, *Notice of Preparation and Scoping Meeting Materials*), the following issues may be either controversial or require further resolution.

AREAS OF CONTROVERSY

The following areas of controversy were raised through the scoping process conducted in association with circulation of the NOP and are characterized more as "issues of concern" than "areas of controversy."

- Preservation of open space and MSHCP conformance.
- Wildfire risk in the planned development which is in a Very High Fire Hazard Severity Zone.
- Hydrology/flooding and transportation/traffic issue as they pertain to the State Highway System.
- Adverse air quality impacts from both construction and operation of Project.
- Increase in dwelling unit density over existing County general plan land use designation.
- Grading and impacts to scenic resources to accommodate development of the Project.
- Compatibility with neighboring land uses.
- Traffic impacts in other jurisdictions.
- Air quality impacts both during construction and operation of Project.
- Cultural resources.

ISSUES TO BE RESOLVED

The above issues have been considered in this EIR, where applicable, under resource-specific sections 4.1 through 4.16. However, despite the incorporation of strategic Project Design Features (see Section 3.0, *Project Description* for a complete list) and careful development and implementation of mitigation measures, significant and unavoidable impacts to aesthetics, air quality, greenhouse gas emissions, noise and transportation remain.

2.0 INTRODUCTION AND PURPOSE

This Draft Environmental Impact Report (EIR) is prepared for the City of Murrieta's Murrieta Hills Specific Plan Amendment (MHSPA or Project) in compliance with the California Environmental Quality Act (CEQA). CEQA requires local and state agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. The CEQA Guidelines are located within the California Code of Regulations, Title 14, Division 6, Chapter 3, §15000-15387 (CCR or CEQA Guidelines), while the CEQA statute is codified as Public Resources Code §21000-21189.57 (PRC or CEQA Statute). For purposes of CEQA review and compliance for this Project, the City of Murrieta serves as the Lead Agency.

The Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east (Exhibit 2-1, *Regional Location Map*). This Project entails the construction of a maximum of 750 residential dwelling units, as well as a maximum of 18.14 acres of community commercial use and 12.67 acres of mixed-use development including a maximum of 193 multiple-family dwelling units (Exhibit 2-2, *Land Use Plan*). The Project would be constructed in three phases, starting in 2023 with anticipated Project completion by 2031.

Off-site Project improvements include sewer service improvements proposed beneath Keller Road and Zeiders Road. The proposed point of connection into Eastern Municipal Water District's (EMWD) system is on Zeiders Road, 2,600 feet north of Keller Road near the Zeiders Road and Ciccotti Street intersection. The Project also includes an off-site storm drain system along Keller Road. Off-site water facilities include an 18-inch water line from the Keller Road/Zeiders Road intersection to the proposed on-site booster pump stations. The EMWD has also asked that the Project construct EMWD facilities as part of its Water Facilities Master Plan, including an 18-inch water line from the Keller Road/Zeiders Road intersection to Linnel Lane (See Section 4.15, *Utilities and Service Systems* for additional information).[1] An extension of McElwain Road will also be constructed from Linnel Lane northward to Keller Road where it will join Zeiders Road.

This Draft EIR evaluates the potentially significant, adverse, and beneficial impacts on the environment resulting from implementation of the Project. Section 3.0, *Project Description*, provides detailed descriptions of the construction and operational components of the Project. Section 4.0, *Environmental Impact Analysis,* discusses the regulatory environment, existing conditions, environmental impacts, and mitigation measures for the Project. Following public review of the Draft EIR, a Final EIR will be prepared, which will include responses public comments made on the Draft EIR.

2.1 PURPOSE OF THE EIR

According to 14 CCR §15121 of the CEQA Guidelines and PRC §21061, the purpose of an EIR is to provide detailed information to public agency decision-makers and the public on the environmental effects of a proposed project. The purpose of this Draft EIR for the Project is to review the existing conditions at and in the vicinity of the Project site; identify and analyze the potential environmental impacts; and suggest feasible mitigation measures or alternatives to reduce significant adverse environmental effects, as

[1] EMWD. (2018). *Development Design Conditions*. Page 3. (EIR Appendix 10.11).

described in Section 3.0, *Project Description* and Section 5.0, *Alternatives to the Proposed Project*. The potential impacts include both temporary construction-related effects and the long-term effects of development, operation, and maintenance of the Project, as described in Section 3.0, *Project Description*.

The intent of this EIR is to address the potential Project impacts utilizing site and Project specific detailed plans, technical studies, and related information available. This EIR will be used by the City of Murrieta as the Lead Agency, other responsible and trustee agencies, interested parties, and the general public to evaluate the potential environmental impacts of the Project (refer to Section 3.10, *Discretionary Actions and Approvals*, for a list of anticipated responsible and trustee agencies and Project approvals).

Therefore, this EIR is intended to serve as the primary environmental document for all entitlements associated with the Project, including all discretionary approvals requested or required to implement the Project. The City of Murrieta, as the Lead Agency, can approve subsequent actions without additional environmental documentation unless otherwise required by Section 21166 of the CEQA Statutes and Section 15162 of the CEQA Guidelines. Section 21166 of the CEQA Statutes specifies:

When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:

(a) Substantial changes are proposed in the project, which will require major revisions of the environmental impact report.

(b) Substantial changes occur with respect to the circumstances under which the project is being undertaken, which will require major revisions in the environmental impact report.

(c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.

Additionally, Section 15162 of the CEQA Statutes specifies:

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would, in fact, be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

2.2 COMPLIANCE WITH CEQA

According to the CEQA Guidelines §15064(f)(1) and CEQA Statute §21100, preparation of an EIR is required whenever a project may result in a significant effect on the environment. An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project. CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects.

This Draft EIR identifies and analyzes the environmental effects of the Project to the degree of specificity appropriate to the current proposed actions, as required by §15146 of the CEQA Guidelines. The analysis considers the activities associated with the Project in order to determine the short-term and long-term environmental effects associated with their implementation. This EIR discusses both temporary and permanent impacts and direct and indirect impacts of the Project, in addition to cumulative impacts associated with other past, present, and reasonably foreseeable future projects.

Based on significance criteria, the effects of the Project are categorized as either "no impact," "less than significant impact," "less than significant with mitigation incorporated," or "significant unavoidable impact" (refer to Section 4.0, *Environmental Impact Analysis*). Mitigation measures are recommended for potentially significant impacts, to avoid or lessen, to the extent feasible and possible, the Project's environmental impacts. In the event the Project results in significant unavoidable impacts even with implementation of feasible mitigation measures, the decision-makers may approve the Project based on a "Statement of Overriding Considerations." This determination requires the decision-makers to balance the benefits of the Project to determine if they outweigh identified unavoidable impacts.

The CEQA Guideline §15093 provides, in part, the following:

- CEQA requires that the decision-maker balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the Project. If the benefits

of the Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

- Where the decision of the public agency allows the occurrence of significant effects that are identified in the Final EIR but are not avoided or substantially lessened, the agency must state in writing the reason to support its action based on the Final EIR and/or other information on the record. This statement may be necessary if the agency also makes the finding under §15091 (a)(3) of the CEQA Guidelines and PRC §21081(a)(3).
- If an agency makes a Statement of Overriding Considerations, the statement should be included in the record of the Project approval and should be mentioned in the Notice of Determination.

2.3 NOTICE OF PREPARATION/EARLY CONSULTATION

In compliance with the CEQA Guidelines, the City of Murrieta provided opportunities for various agencies and the public to participate in the environmental review process. During preparation of the Draft EIR, efforts were made to contact various Federal, State, regional, and local government agencies and other interested parties to solicit comments on the scope of review in this document. This included the distribution of a Notice of Preparation (NOP) to various responsible agencies, trustee agencies, and interested parties. Pursuant to CEQA Guidelines §15082 and CEQA Statute §21084.4, the City of Murrieta circulated the NOP directly to public agencies (including the State Clearinghouse Office of Planning and Research), special districts, and members of the public who had requested such notice. The NOP was distributed on March 17, 2014, with the 30-day public review period concluding on April 15, 2014.

PUBLIC SCOPING MEETING

The City of Murrieta prepared a notice of a public scoping for the Project and sent it to the general public and local, State and Federal agencies. A public scoping meeting was held on Wednesday, April 9, 2014, at the City of Murrieta Council Chambers, 1 Town Square, Murrieta, California. The purpose of the scoping meeting was to obtain comments from the public and agencies regarding the scope of the environmental document.

A total of 11 comment letters were received in response to the NOP within the review period. The NOP, comment letters received during the NOP review period, and Scoping Meeting Materials are included in Appendix 10.1, *Notice of Preparation and Scoping Materials*.

Areas of concern identified during the scoping period include:

- Biological impacts
- Fire Hazards
- Flood Hazards
- Population increase
- Air quality/Greenhouse gas impacts
- Approved MHSP No. SPM-4 entitlements
- Hydrology
- Compatibility with surrounding land uses
- Regional growth
- Regional Trail connections
- Impacts to tribal cultural resources
- Impacts to local recreational facilities
- MSHCP compliance
- Noise impacts

Native American Consultation

Senate Bill (SB) 18, further discussed in Sections 4.4 (*Cultural Resources*) and 4.14 (*Tribal Cultural Resources)*, requires local governments to consult with Native American tribes prior to making certain planning decisions, and to provide notice to tribe at certain key points in the planning process[2]. The intent of SB 18 is to provide Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting and mitigating impacts to cultural places.

In accordance with the requirements of SB 18, the City of Murrieta contacted the Native American Heritage Commission (NAHC) requesting a contact list of tribes with traditional lands or cultural places located within the City's jurisdiction and specifically in the area of the Project site. The NAHC responded stating that a tribal sensitive area is located within the Project area. The NAHC designated Pechanga as the Most Likely Descendant (MLD) for further consultation by the City.[3]

The NAHC also included a contact list of several tribal groups or individuals who may have knowledge of cultural resources within the Project area. The City of Murrieta mailed letters to each of the tribes listed on the NAHC contact list on November 12, 2014, requesting any information they may have regarding Native American cultural resources within the Project area. The initial correspondence letters (from November 2014), clearly noted the 90-day consultation request period (and request for a shortened period of 30 days) in accordance with SB 18.

Stakeholder Consultation

In addition to required CEQA consultation through the NOP Scoping process and SB 18 consultation, the City and Project Applicant engaged in extensive stakeholder consultation since the release of the NOP in March 2014. This stakeholder outreach included focused consultation with key parties for which the Project Applicant will require permits or approvals, including but not limited to:

- Eastern Municipal Water District
- City of Murrieta and County fire agency staff
- Riverside County Flood Control and Water Conservation District
- Western Riverside County Regional Conservation Authority
- The Pechanga Band of Luiseño Indians

Consultation with the WRCRA, through the Habitat Acquisition Negotiation Strategy (HANS) and Joint Project Review (JPR) Processes (as more fully described in Biological Resources Section 4.3) resulted in developing a modified land use plan which resulted in a considerably reduced development footprint; reduction in overall land use density; and increase in property that would be dedicated to the WRCRCA. A comparison of the land use concept presented in the NOP with the Project is provided in Section 3.3, *Project Background*.

The results of the Project's cultural resources studies, along with the information received through the SB 18 consultation process, all contributed to further refinement and reduction of the Project's

[2] See http://nahc.ca.gov/wp-content/uploads/2019/04/SB-18-Tribal-Consultation-Guidelines.pdf for a full outline of the requirements of SB 18.
[3] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 1-1. San Diego, CA: Atkins. Available in Appendix 4.4-C.

developable area. Additional segments of the Project site have been avoided and modifications were made to the alignment of McElwain Road to avoid, to the extent feasible and possible, impacts to cultural and tribal resources. A complete discussion of the Project's modifications for cultural and tribal resources is provided in Sections 4.4 and 4.14 (Cultural Resources and Tribal Cultural Resources).

2.4 ENVIRONMENTAL IMPACT REPORT

PUBLIC REVIEW OF DRAFT EIR

The Draft EIR is available to the general public for review at the locations listed below and on the City's website at:

- https://murrietaca.gov/276/Planning-Documents
- Murrieta Public Library
  8 Town Square
  Murrieta, CA 92562
- City of Murrieta Planning Division
  1 Town Square
  Murrieta, CA 92562

In accordance with CEQA Guidelines §15087 and §15105, this Draft EIR will be circulated for a 45-day public review period. The public is invited to comment in writing on the information contained in this document. Interested agencies and members of the public are invited to provide written comments on the Draft EIR and are encouraged to provide information that they believe should be included in the EIR.

Comment letters should be sent to:

Murrieta Hills Specific Plan Amendment EIR
City of Murrieta
Attn: James Atkins, Associate Planner
1 Town Square, Murrieta, CA 92562
(951) 304-2489
JAtkins@MurrietaCA.gov

or to:

Ron Goldman
Consultant
Ron@RGPlanningConsultants.com

FINAL EIR

Upon completion of the 45-day Draft EIR public review period, the City of Murrieta will evaluate all written comments received during the public review period on the Draft EIR. Pursuant to CEQA Guidelines §15088, the City of Murrieta will prepare written responses to comments raising environmental issue(s) concerns. Pursuant to CEQA Guidelines §15132 (Contents of Final Environmental Impact Report), the Final EIR will be prepared and will include:

a) The Draft EIR or a revision of the draft;

b) Comments and recommendations received on the Draft EIR either verbatim or in summary;

c) A list of persons, organizations, and public agencies commenting on the Draft EIR; and

d) The lead agency's responses to significant environmental points raised in the review and consultation process.

Additionally, pursuant to CEQA Guidelines §15088 (Evaluation of and Response to Comments), after the Final EIR is completed and at least ten days prior to certifying the Final EIR, the City of Murrieta will provide

a copy of the written response to comment for each public agency on comments made by that public agency.

CERTIFICATION OF THE FINAL EIR

The Draft EIR, as revised by the Final EIR, will be considered by the City of Murrieta Planning Commission and the City Council for certification, consistent with CEQA Guidelines §15090, which states:

Prior to approving a project, the lead agency shall certify that:

1) The final EIR has been completed in compliance with CEQA;

2) The final EIR was presented to the decision-making body of the lead agency, and that the decision-making body reviewed and considered the information contained in the final EIR prior to approving the project; and

3) The final EIR reflects the lead agency's independent judgment and analysis.

Regarding the adequacy of an EIR, according to CEQA Guidelines §15151, "An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."

2.5 FORMAT OF THE EIR

The purpose of this EIR is to enable the City of Murrieta, other responsible and trustee agencies, interested parties and members of the public to review and evaluate the environmental impacts of the Project. The purpose of this EIR is to provide environmental review of the Project, such that the City of Murrieta will be able to utilize this EIR to satisfy CEQA for Project-related permits or approvals and to provide programmatic CEQA analysis of a potential future Specific Plan buildout.

This Draft EIR is organized into 10 sections:

Section 1.0 **Executive Summary,** provides a Project summary and summary of environmental impacts, and the proposed mitigation measures and alternatives.

Section 2.0 **Introduction,** provides CEQA compliance information.

Section 3.0 **Project Description,** provides Project history, as well as the environmental setting, Project characteristics and objectives, phasing, and anticipated permits and approvals that may be required for the Project.

Section 4.0 **Environmental Impact Analysis,** provides a discussion of the existing conditions for each of the environmental impact areas. This section also describes methodologies for significance determinations, identifies both short-term and long-term environmental impacts of the Project, recommends mitigation measures to reduce the significance of environmental impacts, and identifies any areas of potentially significant and unavoidable impacts. This

section includes a discussion of cumulative impacts that could arise as a result of the implementation of the Project.

Section 5.0 **Alternatives to the Proposed Project,** describes potential Project alternatives, including alternatives considered but rejected from further consideration, the No Project Alternative, various Project Alternatives, and identifies the Environmentally Superior Alternative.

Section 6.0 **Additional CEQA Considerations,** summarizes unavoidable significant impacts, and discusses significant irreversible environmental changes, growth-inducing impacts, and energy conservation, in accordance with CEQA Guidelines Appendix F.

Section 7.0 **Effects Found Not to Be Significant,** describes potential impacts that have been determined not to be significant throughout the EIR process.

Section 8.0 **EIR Consultation and Preparation** identifies the CEQA lead agency and EIR preparation team, as well as summarizes the EIR consultation process.

Section 9.0 **Appendices,** contains the NOP and DEIR notification documents and Project resource-specific technical studies.

2.6 RESPONSIBLE AND TRUSTEE AGENCIES

LEAD AGENCY

City of Murrieta

For this Project, the City of Murrieta is the Lead Agency under CEQA. This Draft EIR has been prepared in accordance with the CEQA Statute and the CEQA Guidelines. CEQA requires lead agencies to consider potential environmental effects that may occur with implementation of a project and to avoid or substantially lessen significant effects to the environment when feasible. When a project may have a significant effect on the environment, the agency with primary responsibility for carrying out or approving the Project (the Lead Agency) is required to prepare an EIR.

Note that while the Project is presently located in unincorporated Riverside County, a jurisdictional boundary change will be processed through the Riverside Local Agency Formation Commission (LAFCO) to amend the City's sphere of influence and annex the MHSPA area, along with the WRCRCA-owned parcels to the southwest of the Project site, into the City of Murrieta, the Project's Lead Agency. See Section 3.0, *Project Description* for additional information.

Trustee, Responsible, and Cooperating Agencies

Other federal, state, and local agencies are involved in the review and approval of the Project, including those agencies designated as trustee and responsible agencies under CEQA. Under CEQA, a trustee agency is a State agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. A responsible agency is an agency, other than the lead agency, that has responsibility for carrying out or approving a project. Responsible and trustee agencies are consulted by the CEQA lead agency to ensure the opportunity for input and also review and comment on the Draft EIR. Responsible agencies also use the CEQA document in their decision-making. Several agencies other than the City of Murrieta may require permits, approvals, and/or consultation in order to implement various elements of the Project, as listed in Section 3.11, *Required Permits and Approvals*.

2.7 INCORPORATION BY REFERENCE

Pertinent documents relating to this EIR are cited in accordance with CEQA Guidelines §15148 or have been incorporated by reference in accordance with CEQA Guidelines §15150, which encourages incorporation by reference as a means of reducing redundancy and the length of environmental reports. The following documents are hereby incorporated by reference into this EIR and are available for review online. Information contained within these documents is utilized for various sections of this EIR.

Riverside County General Plan. The County of Riverside adopted the *County of Riverside General Plan* (GP) in 2015. The GP serves as a blueprint for growth and development. The County of Riverside GP primarily focuses on the unincorporated area - territory that is not located within a city - but also addresses regional services and facilities provided by the County such as regional parks, roads, and flood control facilities. As part of its GP, the County includes the following 10 elements: 1) Land Use; 2) Circulation; 3) Multipurpose Open Space; 4) Safety; 5) Noise; 6) Housing; 7) Air Quality; 8) Healthy Communities; and 10) Administration. The GP is used throughout this EIR since it contains information, policies, and regulations relevant to the Project.

This document is available for review on the County's website at:

- https://planning.rctlma.org/Zoning-Information/General-Plan

Murrieta General Plan 2035. The City of Murrieta adopted the comprehensive Murrieta General Plan 2035 (Murrieta GP) in 2011. The Murrieta GP constitutes the City's overall plans, goals, and objectives for land use within the City's jurisdiction. The Murrieta GP addresses a broad range of issues relating to the community's physical, economic, and social development. It contains an evaluation of existing conditions and provides the long-term goals and policies necessary to guide growth and development in the direction that the community desires. Through the Goals, Objectives, Policies, and Programs it contains, the Murrieta GP serves as a decision-making tool to guide future growth and development decisions.

The General Plan consists of 11 elements:

- Infrastructure Element
- Land Use Element
- Circulation Element
- Healthy Community Element
- Housing Element
- Conservation Element
- Air Quality Element
- Noise Element
- Recreation/Open Space Element
- Safety Element
- Economic Development Element

The Murrieta GP is used throughout this EIR since it contains policies and regulations relevant to the Project. This document is available for review on the City's website at:

- https://www.murrietaca.gov/303/General-Plan-2035

Murrieta General Plan 2035 Final Environmental Impact Report (State Clearinghouse [SCH] No. 2010111084). Certified July 19, 2011. The Murrieta GP 2035 Environmental Impact Report (Murrieta GP EIR) analyzes the potential environmental impacts that would result from implementation of the Murrieta GP 2035. Buildout of the City is forecast to include up to 44,484 dwelling units, and 50,089,652

square feet of non-residential land uses. The Murrieta GP EIR is used in this EIR as a source of baseline data and cumulative impacts for buildout of the City.

Murrieta Municipal Code. The Murrieta Municipal Code (Murrieta MC) regulates land use and activities within the City's jurisdiction including, zoning regulations (codified in Title 16). Murrieta MC Title 16 is the primary tool for implementing the City's GPs goals, objectives, and policies. The Murrieta MC is referenced throughout this EIR to establish the Project's baseline requirements according to the City's MC regulations.

The Murrieta MC can be accessed online at:

- http://www.murrietaca.gov/259/Development-Code

City of Menifee General Plan. The City of Menifee adopted the comprehensive City of Menifee General Plan (Menifee GP) in 2013. The Menifee GP is a set of long-term goals and policies that decision-makers use to guide growth and development in the City through 2030. The Menifee GP is comprised of four primary components: Vision and Values; General Plan Elements (goals and policies); Implementation Actions; and Environmental Impact Report (including technical studies). It characterizes the desired, positive outlook of the City by conceiving important desired characteristics.

The Menifee GP consists of eight elements:

- Land Use Element
- Circulation Element
- Housing Element
- Noise Element
- Open Space and Recreation Element
- Economic Development Element
- Community Design Element
- Safety Element

The Menifee GP is utilized periodically throughout this EIR because it contains policies and regulations relevant to the Project, namely the Circulation Element.

The Menifee GP is available for review on the City's website at:

- http://www.cityofmenifee.us/221/General-Plan

Menifee General Plan Draft Environmental Impact Report (SCH No. 2012071033). The Menifee GP Draft EIR addresses the environmental impacts associated with the implementation of the Menifee GP. Theoretical buildout of the City is forecast to accommodate approximately 63,754 dwelling units, and 52,320,704 square feet of non-residential land uses.

The Menifee GP Draft EIR is used in this EIR as a source of baseline data and for cumulative impacts analysis. It can be found at:

- https://www.cityofmenifee.us/262/Draft-Environmental-Impact-Report

Southern California Association of Governments. The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) was adopted in April 2016. The RTP/SCS aims to create a long-range vision plan that balances future mobility and housing needs with economic, environmental and public health goals. The RTP/SCS charts a course for closely integrating land use and transportation – so that the region can grow in accordance with smart and

sustainable growth strategies. The 2016 RTP/SCS Final EIR (SCH No. 2015031035) addresses the cumulative impact of future development and associated infrastructure improvements for the SCAG region, which includes Riverside County and the City of Murrieta.

The SCAG RTP/SCS can be accessed online at:

- http://scagrtpscs.net/Pages/default.aspx

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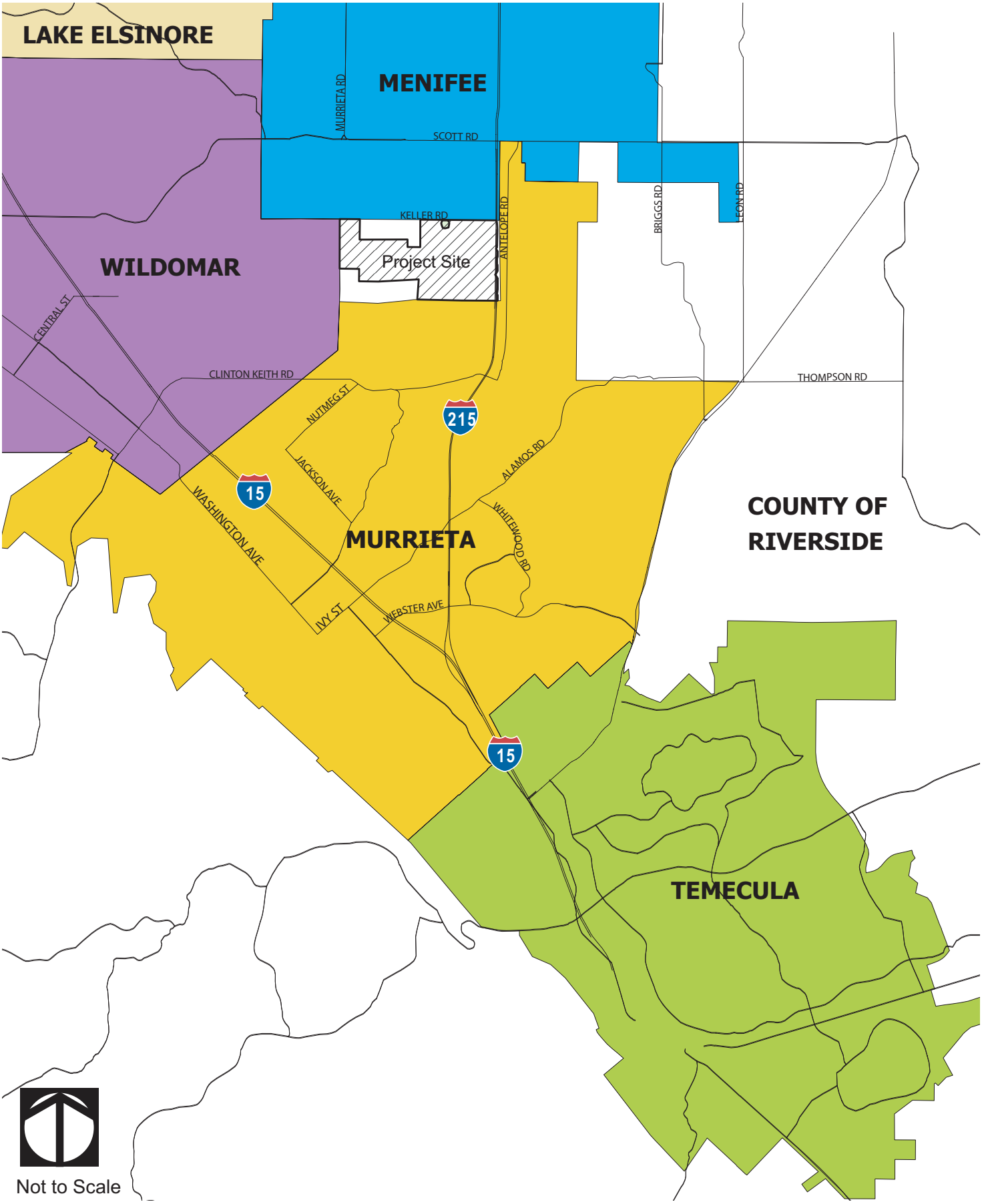
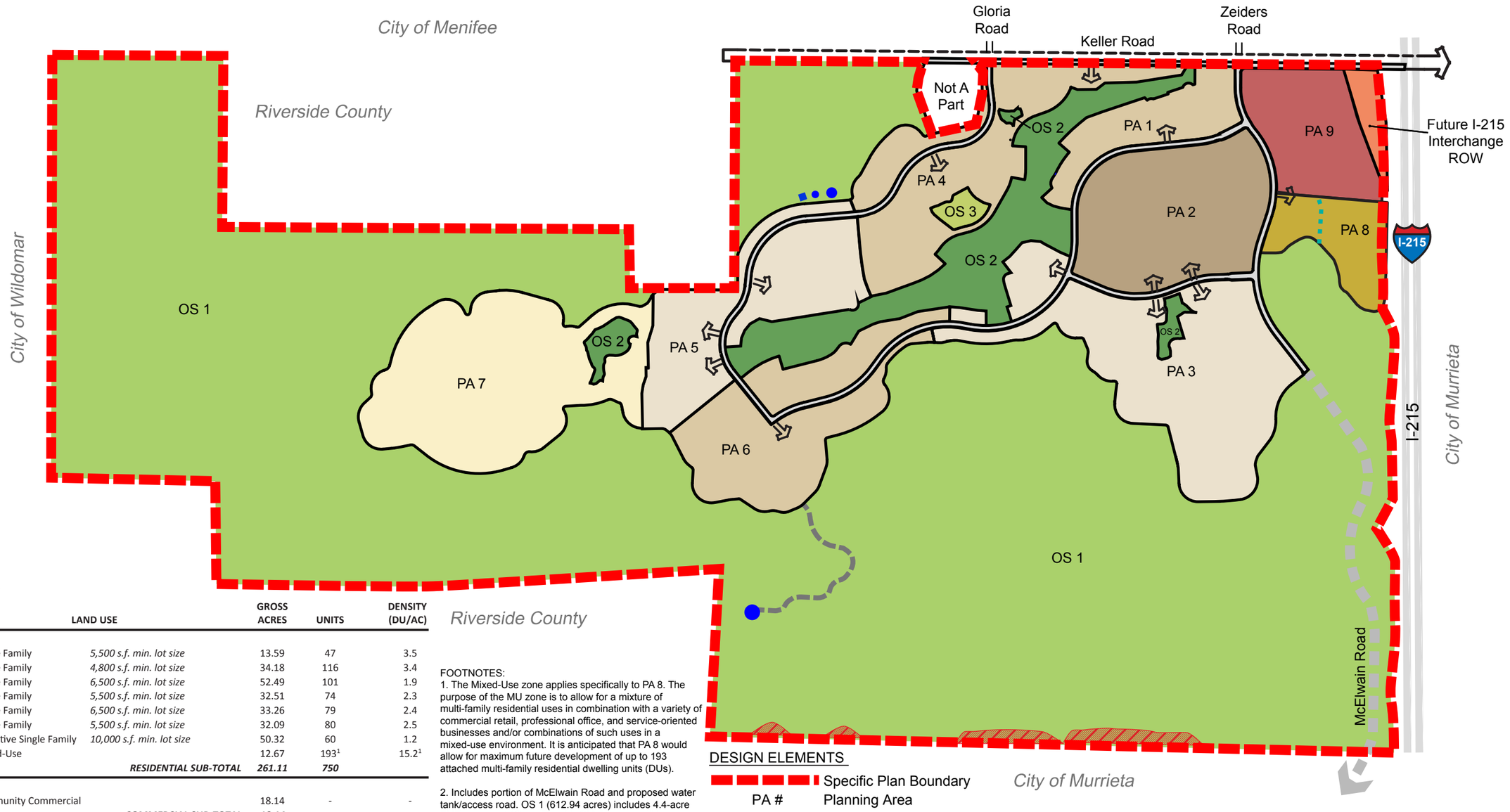


Source: MHSPA, Figure 1-1

EXHIBIT 2-1: Regional Location Map
Murrieta Hills Specific Plan Amendment

Kimley»Horn



LAND USE SUMMARY

LAND USE			GROSS ACRES	UNITS	DENSITY (DU/AC)
RESIDENTIAL					
PA 1	Single Family	*5,500 s.f. min. lot size*	13.59	47	3.5
PA 2	Single Family	*4,800 s.f. min. lot size*	34.18	116	3.4
PA 3	Single Family	*6,500 s.f. min. lot size*	52.49	101	1.9
PA 4	Single Family	*5,500 s.f. min. lot size*	32.51	74	2.3
PA 5	Single Family	*6,500 s.f. min. lot size*	33.26	79	2.4
PA 6	Single Family	*5,500 s.f. min. lot size*	32.09	80	2.5
PA 7	Executive Single Family	*10,000 s.f. min. lot size*	50.32	60	1.2
PA 8	Mixed-Use		12.67	193[1]	15.2[1]
		RESIDENTIAL SUB-TOTAL	***261.11***	***750***	
COMMERCIAL					
PA 9	Community Commercial		18.14	-	-
		COMMERCIAL SUB-TOTAL	***18.14***		
OPEN SPACE					
OS 1	MSHCP		612.94[2]	-	-
OS 2	Linear Nature Park		37.33	-	-
OS 3	Non-MSHCP Open Space		1.75	-	-
		OPEN SPACE SUB-TOTAL	***652.02***		
CIRCULATION					
Backbone Streets (Loop Road and McElwain)			19.53	-	-
Future Caltrans I-215 Interchange ROW			4.61	-	-
Street ROW Dedication and Slopes outside ROW			16.39		
		CIRCULATION SUB-TOTAL	***40.53***		
TOTAL			**971.8**	**750**	**0.77**

FOOTNOTES:
1. The Mixed-Use zone applies specifically to PA 8. The purpose of the MU zone is to allow for a mixture of multi-family residential uses in combination with a variety of commercial retail, professional office, and service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 would allow for maximum future development of up to 193 attached multi-family residential dwelling units (DUs).

2. Includes portion of McElwain Road and proposed water tank/access road. OS 1 (612.94 acres) includes 4.4-acre FMZ easement (Greer Ranch). 608.54 acres will be dedicated to RCA for MSHCP.

DESIGN ELEMENTS

- Specific Plan Boundary
- PA # — Planning Area
- OS # — Open Space
- 500-foot Setback from Edge of I-215 Right-of-Way
- Portion of Proposed McElwain Road within OS 1 MSHCP
- Proposed Water Tank and Access Road
- Existing EMWD Water Tank Not A Part of Specific Plan
- Proposed Water Tanks and Booster Station
- Access Point
- Fuel Modification Zone Easement (Greer Ranch to Maintain)

Source: MHSPA, Figure ES-1

Not to Scale

EXHIBIT 2-2: Land Use Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

3.0 PROJECT DESCRIPTION

3.1 PURPOSE

The purpose of the Project Description is to provide an accurate, stable and finite description of the Project to allow for meaningful review by local, state and federal reviewing agencies, decision-makers, and interested parties. The California Environmental Quality Act (CEQA) Guidelines §15124 (14 California Code of Regulations [CCR] §15124) requires a project description to contain the following:

1. The precise location and boundaries of the proposed project shown on a detailed map and along with a regional location map;
2. A clearly written statement of the objectives of the proposed project including the underlying purpose of the project and project benefits. The statement of objectives must be detailed enough to allow a Lead Agency the opportunity to develop and evaluate project alternatives;
3. A description of the proposed project's technical, economic and environmental characteristics along with engineering and public service facilities details;
4. A statement describing the intended uses of the EIR, including a chronological list of all necessary approvals and a roster of other agencies that may use the document, a list of required permits and approvals, and a list of related consultation and environmental review necessary under local, state, and federal laws, regulations, and policies.

An adequate project description need not be extensive, but it must be sufficient to allow for review and evaluation of the possible environmental impacts of a proposed project.

3.2 PROJECT OVERVIEW

The Project, commonly referred to as "Murrieta Hills," includes a comprehensive update and amendment to the previously evaluated and approved Murrieta Hills Specific Plan. In addition to the Murrieta Hills Specific Plan Amendment (referred to as the MHSPA, Specific Plan or Project), other related Project entitlements include a Tentative Tract Map, Development Agreement, General Plan Amendment, Zone Change, Sphere of Influence (SOI) Amendment and subsequent annexation into the City of Murrieta (see Section 3.11, *Required Permits and Approvals*). The Project also includes the construction or improvement of various off-site infrastructure, including extending utilities, water facilities, sewer lines, drainage facilities, and the construction of McElwain Road from Keller Road southerly to Linnel Lane.

Each of the specific Project entitlement applications and associated supporting documents (MHSPA, Tentative Tract Map, and Development Agreement) are hereby incorporated by reference into this EIR, and are available for review in the City of Murrieta Planning Department located within City Hall at 1 Town Square, Murrieta, CA 92562.

The purpose of this Draft EIR for the Project is to review the existing conditions at and in the vicinity of the Project site; identify and analyze the potential environmental impacts; and suggest feasible mitigation measures or alternatives to reduce significant adverse environmental effects, as described in this section and Section 5.0, *Alternatives to the Proposed Project*. This Project entails the construction of a maximum of 750 residential dwelling units, as well as a maximum of 18.14 acres of community commercial use and

12.67 acres of mixed-use development including a maximum of 193 multiple-family dwelling units (Exhibit 2-2, *Land Use Plan*). In addition, a 4.6-acre public neighborhood park, approximately nine acres of pocket parks, a 2.7-acre HOA community center, a 37.33-acre linear nature park, and approximately 609 acres of preserved natural open space, per the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) agreement with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), are included in the MHSPA. The MHSPA would also include 19.53 acres of backbone streets and approximately 21 acres of Caltrans and Right-of-Way (ROW) dedications. In total, the MHSPA consists of approximately 972 acres. Development and full buildout of the Project is expected to occur in three phases over a period of eight years, starting in 2023 with anticipated Project completion by 2031. However, note that actual phasing sequence and years may vary depending on market conditions.

3.3 PROJECT BACKGROUND

The Project site was once the subject of a specific plan (Murrieta Hills Specific Plan No. SPM-4) for a community consisting of a mix of residential neighborhoods, natural open spaces, a school site, a linear park/riparian corridor, and memorial park proposed by the Rose Hills Foundation. The landowner applied for annexation of the site into the City of Murrieta, and in conjunction with the annexation effort, the City approved the original Murrieta Hills Specific Plan as the pre-zoning for the property. The original Murrieta Hills Specific Plan was approved by the City of Murrieta in 1995 (Specific Plan No. SPM-4, City Council Resolution No. 95-353). As approved, Specific Plan No. SPM-4 focused on the memorial park and residential uses, allowing for a maximum of 1,585 residences, with commercial uses, a linear park/riparian corridor, open space and an elementary school on approximately 985 acres (Exhibit 3-1, *1995 Specific Plan SPM-4 Land Use Plan*).

Concurrent with the filing of MHSP No. SPM-4, the then Project Applicant also submitted an application for a Conditional Use Permit (CUP) to the City of Murrieta, specifying in greater detail the proposed development of the 184-acre memorial park. City of Murrieta CUP No. 93-015 for the Rose Hills Memorial Park was approved by Planning Commission Resolution No. 95-002 on March 22, 1995. However, per Condition #3 of the Conditions of Approval per Planning Commission Resolution No. 95-002 for CUP No. 93-015:

> *This approval shall be initiated within five (5) years of approval date; otherwise, it shall become null and void and of no effect whatsoever. By use is meant the beginning of substantial construction contemplated by this approval within the five (5) year period which is thereafter diligently pursued to completion or the beginning of substantial utilization contemplated by this approval.*

The memorial park use granted by CUP No. 93-015 was never exercised; therefore, the CUP is considered null and void.

The original Murrieta Hills Specific Plan No. SPM-4 was approved by the City of Murrieta, subject to completion of annexation proceedings to the City of Murrieta through the Riverside Local Agency Formation Commission (LAFCO). However, the previous applicant did not pursue annexation and chose to remain within the unincorporated County area. At one time, the Project was within the City of Murrieta's SOI but was subsequently removed. Therefore, although Specific Plan No. SPM-4 was approved, since the Project did not proceed to formal annexation through LAFCO, the site is still within

unincorporated Riverside County with associated County zoning and general plan land use designations (discussed below).

An amendment to Specific Plan No. SPM-4 was submitted to the City of Murrieta in 2005 by Del Webb. Due to the economic downturn and market conditions, the plan amendment was withdrawn. In 2011, Benchmark Pacific, in partnership with the property owner, Pulte/BP Murrieta Hills, LLC, initiated the MHSPA to amend Specific Plan No. SPM-4.

Following release of the Notice of Preparation (NOP) in August 2014, the City and Project Applicant engaged in extensive stakeholder outreach resulting in a substantially revised and improved site plan that further reduces environmental impacts compared to the site plan proposed as part of the original application and as described and shown in the NOP. The MHSPA updates, amends and replaces Specific Plan No. SPM-4. It reduces the Specific Plan boundary to approximately 972 acres, increases the amount of preserved natural open space, and changes the development concepts and land use mix. Exhibit 3-1 shows the original approved 1995 Specific Plan land use plan; Exhibit 3-2 shows the MHSPA conceptual site plan as reflected in the 2014 NOP; the 2014 NOP with vicinity map is included in Appendix 9.1, and the MHSPA Land Use Plan is attached as Exhibit 2-2. Refer to Section 2.3, *Notice of Preparation/Early Consultation* and Appendix 10.1, *Notice of Preparation and Scoping Meeting* for additional information.

3.4 PROJECT LOCATION

The Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

3.5 ENVIRONMENTAL SETTING

EXISTING LAND USES

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site has been disturbed by prior farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south. (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by illegal off-road vehicle activity and illegal dumping. Other areas of the Project site contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation. On-site elevations range from approximately 1,570 feet above mean sea level (MSL) in the northeast corner of the property to approximately 2,270 feet above MSL within the western portion of the site.

The area immediately north of Keller Road, within the City of Menifee, includes lower density single-family residential and some commercial land uses. Commercial, single-family residential, multi-family residential, and civic uses including the Oak Meadows Elementary School are to the northeast. I-215 is

directly east, and beyond the freeway are single-family residential uses, commercial service uses, Loma Linda University Medical Center – Murrieta and associated professional office building, and the Kaiser Permanente – Murrieta Medical Campus. A bus storage facility, shopping center, multi-family and single-family residential uses are southeast of the Specific Plan area. Southwest of the Specific Plan is the Greer Ranch Specific Plan residential community. Commercial uses, a residence and vacant land are located directly southwest and west of the Specific Plan area (see Exhibit 3-4, *Aerial Photography of Site and Surrounding Development*).

Several adopted specific plans are located in the vicinity of the Project including Murrieta Highlands Specific Plan No. SPM-1 to the northeast, Golden City Specific Plan No. SPM-5 to the east, and Greer Ranch Specific Plan No. SPM-2 to the southwest. Further south are the Murrieta Oaks Specific Plan No. SPM-10 and the Los Alamos Hills Master Plan. See Exhibit 3-4 to view the proximity of the previously listed plans to the Project.

EXISTING GENERAL PLAN DESIGNATIONS AND ZONING DISTRICTS

The Project area is located within the Sun City/Menifee Valley Area Plan of the Riverside County General Plan (GP). The Project site's Riverside County GP land use designations are Rural Mountainous (RM), Rural Community – Low Density Residential (RC-LDR), and Rural Community – Estate Density Residential (RC-EDR). The Specific Plan area is zoned Rural Residential (R-R) under the Riverside County Land Use Ordinance 348. See Exhibit 3-5, *Riverside County General Plan* for current Project site land use designations.

Project implementation would require a General Plan Amendment and pre-zoning in accordance with the LAFCO SOI amendment and annexation processes. Once the annexation process is complete, the General Land Use Designations within the Specific Plan area will change from the current Riverside County General Plan Land Use Designations to City of Murrieta GP Land Use Designations of Single Family Residential, Mixed-Use, Commercial, and Parks and Open Space (see Exhibit 3-6, *Proposed General Plan Amendment)*.

In addition, Project implementation would pre-zone the Project area to the following City of Murrieta districts: Single-Family Residential (SF-2), Estate Residential (ER-3), Mixed-Use (MU), Community Commercial (CC), and Open Space (OS) (see Exhibit 3-7, *Proposed Zone Change*). These zoning changes are effective upon completion of the SOI amendment and annexation process.

RELATIONSHIPS TO OTHER JURISDICTIONS

The Project area is currently subject to Riverside County jurisdiction for land use and zoning purposes. Upon adoption of the Specific Plan by the City of Murrieta, approval of the associated General Plan Amendment and zone change, and approval of the SOI amendment and annexation to the City through the Riverside LAFCO, the Project area will be under the jurisdiction of the City of Murrieta, as depicted in Exhibit 3-6, *Proposed General Plan Amendment* and Exhibit 3-7, *Proposed Zone Change.*

There are several parcels within unincorporated Riverside County that are not part of the MHSPA but are located between the MHSPA area and adjacent cities of Murrieta, Wildomar, and Menifee. These parcels are designated RM in the Riverside County GP and zoned Rural Residential under the Riverside County Zoning Ordinance.

The parcels to the south of the Project, presently located within unincorporated Riverside County, are owned by the Western Riverside County Regional Conservation Authority (RCA). These parcels are bordered by the Project to the north and the City of Murrieta to the south. At the request of the LAFCO, these RCA-owned parcels are included in the Project's SOI amendment and annexation application. These parcels, which will be located in the City of Murrieta and its SOI, will be designated as Open Space in the City of Murrieta GP and pre-zoned Open Space under the City of Murrieta Municipal Code (Murrieta MC). These land use and zoning changes will be effective following the completion of the annexation process.

The parcels to the north of the Project, south of the City of Menifee, would remain within unincorporated Riverside County and are not included in the Project's SOI or annexation applications as shown in Exhibit 3-6, *Proposed General Plan Amendment*. The proposed MHSPA is also available for review at the City of Murrieta Planning Department**,** 1 Town Square Murrieta, CA 92562 and online at https://www.murrietaca.gov/276/Planning-Documents.

3.6 PROJECT OBJECTIVES

The purpose of the Specific Plan is to guide change, promote quality development, and implement the community's vision for the Project site. The MHSPA provides a land use plan, zoning and development standards, design guidelines, and administrative and implementation programs to encourage high-quality development while preserving environmentally sensitive open space within the Project area. The Project, as reflected in the MHSPA and associated Tentative Tract Map, was developed to accomplish the following objectives:

- Amend and replace the adopted Murrieta Hills Specific Plan No. SPM-4 to establish new requirements and development guidelines for the Murrieta Hills master-planned community.
- Enhance circulation in the MHSPA area by providing a new connection via the proposed McElwain Road connection, improvements to Keller Road, dedicating ROW necessary for the proposed Keller Road/I-215 interchange improvements, and contributing the Project's fair share to planned Circulation Element improvements in the cities of Murrieta, Menifee and Wildomar. See Section 4.13, *Transportation* for additional information.
- Enhance existing infrastructure to serve the Project and planned nearby development, including increasing Eastern Municipal Water District (EMWD) water storage, service infrastructure and sewer capacity, and enhancing fire flow availability for fire protection purposes.
- Provide a variety of housing opportunities (single-family residential and multi-family residential as part of the mixed-use component) to serve the existing and future housing needs in the City of Murrieta, consistent with the goals and policies established in the Murrieta GP Land Use, Housing, Healthy Community, Economic Development, and Safety Elements.
- Provide an opportunity for commercial development and necessary neighborhood commercial services to serve existing and planned development in the vicinity of the Specific Plan area to reduce vehicle trips.
- Permanently preserve over 600 acres of natural open space under the Western Riverside County MSHCP. This equates to approximately 63 percent of the approximately 972-acre Specific Plan

area, exceeding the MSHCP minimum conservation requirement of 60 percent for Cell Group C in the Sun City/Menifee Valley Area Plan.

- Create and maintain a linear natural park to provide open space and protection of environmentally sensitive areas by preserving oak woodland and riparian habitat.
- Annex the Project area into the City of Murrieta to allow for orderly and efficient local control of land use planning and the extension and improvement of public services.
- Annex southerly parcels, owned by the RCA, currently in unincorporated County of Riverside, between the Specific Plan area and City of Murrieta, into the City and its SOI. Annexation will allow the City to coordinate public safety and protection efforts for the parcels because the parcels will be under City jurisdiction.

3.7 APPROVALS REQUESTED AS PART OF THE "PROJECT"

MURRIETA HILLS SPECIFIC PLAN AMENDMENT

The Project proposes to amend the approved Murrieta Hills Specific Plan No. SPM-4. A more detailed discussion of the proposed MHSPA is provided in Section 3.8 below.

GENERAL PLAN LAND USE DESIGNATION AND PRE-ZONING

Project implementation would require a General Plan Amendment and Pre-zoning in accordance with LAFCO requirements for a sphere of influence amendment and annexation. The General Land Use Designations within the Specific Plan area would change from the current Riverside County Land Use Designations of Rural Mountainous (RM), Rural Community-Estate Density Residential (RC-EDR), and Rural Community-Low Density Residential (RC-LDR) (Exhibit 3-5, *Riverside County General Plan*) to City of Murrieta GP Land Use Designations of Single Family Residential, Mixed-Use, Community Commercial, and Parks and Open Space (Exhibit 3-6, *Proposed General Plan Amendment*).

Concurrent with the Project's proposed General Plan Amendment for the Specific Plan area, the "isolated" RCA-owned parcels located within the unincorporated area of Riverside County (to the south of the Specific Plan area and adjacent to the cities of Wildomar and Murrieta) would be included as part of the General Plan Amendment and Pre-Zoning to show the RCA-owned land as included with the SOI amendment and annexation processes. The RCA-owned parcels are currently conserved under the requirements for MSHCP Land. In the Riverside County GP, the RCA-owned parcels are currently designated Rural Mountainous (RM) and will be pre-designated in the Murrieta GP as Open Space (Exhibit 3-6).

In addition, Project implementation would pre-zone the Project area into the following City of Murrieta zoning districts: Single-Family Residential (SF-2), Estate Residential (ER-3), Mixed Use (MU), Community Commercial (CC), and Open Space (OS) (Exhibit 3-7). Once adopted and made effective following the SOI amendment and annexation of the Specific Plan area to the City of Murrieta, the MHSPA would constitute the land use and zoning regulations for development of all parcels within the Specific Plan area and shall replace the relevant portions of the Land Use Ordinance, and the previous Murrieta Hills Specific Plan No. SPM-4.

TENTATIVE TRACT MAP

A Tentative Tract Map to subdivide the property is proposed for the Project site concurrent with the Specific Plan but could be adopted subsequently. The Tentative Tract Map would become effective upon annexation of the MHSPA area to the City of Murrieta. A copy of the Tentative Tract Map is available for review at the City of Murrieta Planning Department, 1 Town Square Murrieta, CA 92562.

ANNEXATION TO THE CITY OF MURRIETA

A jurisdictional boundary change would be processed through the Riverside LAFCO to amend the City's SOI and annex the Specific Plan area, along with the RCA-owned land, currently within the unincorporated area of Riverside County, into the City of Murrieta (Exhibit 3-6). LAFCO is responsible for reviewing and approving proposed jurisdictional boundary changes, spheres of influence, incorporations of new cities, formations of new special districts, and consolidations, mergers, and dissolutions of existing districts. Following adoption of the MHSPA by the Murrieta City Council, the jurisdictional boundary request would be forwarded to the Riverside LAFCO for processing and determination. Upon approval by the Riverside LAFCO, the Specific Plan area would be subject to City of Murrieta jurisdiction, and the MHSPA and associated Murrieta GP Amendment, rezone, Tentative Tract Map, and Development Agreement shall become effective.

DEVELOPMENT AGREEMENT

A development agreement is a legal agreement between a city and a development and is governed by state law. State law (Government Code Section [GCS] 65864 et seq.) allows local agencies and property owners to enter into contractual agreements relating to the intensity, timing, and conditions of development of real properties. The Murrieta City Council is authorized to enter into development agreements under Chapter 16.54.020 of the Murrieta Development Code. In accordance with Murrieta MC Section 16.54.060 (D), an ordinance shall be adopted which authorizes execution of the development agreement by the City Council. The ordinance shall be in compliance with state law (GCS 65867.5) and shall contain the required findings, in compliance with Murrieta MC Section 16.54.070, and the facts supporting them. The Project Applicant is responsible for establishing the evidence in support of the required findings. The proposed Development Agreement would provide an enhanced degree of certainty to both the City and the Project owner/developer throughout the development process. It is anticipated that a Development Agreement would be approved concurrent with, or subsequent to, adoption of the Specific Plan by the Murrieta City Council.

STATEMENT OF OVERRIDING CONSIDERATIONS

In accordance with CEQA Guidelines §15093, the Lead Agency is required to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the Lead Agency finds that the project benefits outweigh the unavoidable adverse environmental effects, the adverse effects may be deemed acceptable.

If this EIR identifies any significant, unavoidable, and unmitigable impacts, the City of Murrieta, as Lead Agency, may approve the Project based on a Statement of Overriding Considerations. The Statement must be in writing and state-specific reasons supporting City action based on the final EIR or other substantial

evidence in the record. Substantial evidence includes facts, reasonable assumptions predicated upon facts, and expert opinions supported by facts. Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment.

If the City makes a Statement of Overriding Considerations, the written Statement will be included in the record of Project approval and will be mentioned in the Notice of Determination. It will explain why the Project benefits outweigh the adverse environmental consequences identified in this EIR. The Statement does not substitute for, and shall be in addition to, findings required pursuant to §15091. *Findings*.

3.8 SPECIFIC PLAN DEVELOPMENT PLAN

LAND USE

The MHSPA Project includes six land use components which are broken up into different Planning Areas (PA). The land use components are Single-Family Residential, Executive Single-Family Residential, Mixed-Use, Commercial, Open Space, and Circulation. In total, there are nine development PAs (PA 1 through 9) and three Open Space areas (OS 1, MSHCP Open Space; OS 2, Linear Nature Park; and OS 3, Non-MSHCP Open Space). All PAs are connected through land use, circulation, greenspace, networks of trails and walkways, and common design elements to create a cohesive community.

The breakdown for each component is shown in Table 3-1, *Murrieta Hills Specific Plan Amendment Land Use Summary.* Note that the Specific Plan allows for transfer of densities up to 10 percent within and between PAs, subject to not exceeding the total Specific Plan density (MHSPA Section 8.1.8). PA 8 is designated as a Mixed-Use PA (discussed further in the *Mixed-Use (MHSPA PA 8)* section below) allowing for the development of a maximum of 193 multi-family units in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses.

Table 3-1: Murrieta Hills Specific Plan Amendment Land Use Summary

Planning Area	Land Use	Gross Acres	Units	Density (DU/AC)
Residential				
PA 1	Single-Family Residential	13.59	47	3.5
PA 2	Single-Family Residential	34.18	116	3.4
PA 3	Single-Family Residential	52.49	101	1.9
PA 4	Single-Family Residential	32.51	74	2.3
PA 5	Single-Family Residential	33.26	79	2.4
PA 6	Single-Family Residential	32.09	80	2.5
PA 7	Executive Single-Family Residential	50.32	60	1.2
PA 8	Mixed-Use	12.67	193[1]	-
	Residential Subtotal	**261.11**	**750**	**-**
Commercial				
PA 9	Community Commercial	18.14	-	-
Open Space				
OS 1	MSHCP	612.94[2]	-	-
OS 2	Linear Nature Park	37.33	-	-
OS 3	Non-MSHCP Open Space	1.75	-	-
	Open Space Subtotal	**652.02**	**-**	**-**
Circulation				
Backbone Streets (Loop Road and McElwain Road)		19.53	-	-
Future Caltrans I-215 Interchange ROW		4.61	-	-
Street ROW designation and slopes outside ROW		16.39	-	-
	Circulation Subtotal	**40.53**	**-**	**-**
	Total	**971.8**	**750**	-

Source: City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Figure ES-1. Page ES-5.
[1] – The Mixed-Use zone applies specifically to PA 8. The purpose of the MU zone is to allow for a mixture of multi-family residential uses in combination with a variety of commercial retail, professional office, and service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 would allow for maximum future development of up to 193 attached multi-family residential dwelling units.
[2] – Includes portion of McElwain Road and proposed water tank/access road. OS 1 (612.94 acres) includes 4.4-acre FMZ easement (Greer Ranch). 608.54 acres will be dedicated to RCA for MSHCP.
DU – Dwelling unit
AC – Acre

ON-SITE DEVELOPMENT COMPONENTS

Residential Planning Areas

SINGLE-FAMILY RESIDENTIAL (MHSPA PA 1 - PA 6)

The Single-Family Residential component accounts for most of the housing in the Project. The MHSPA anticipates the construction of a maximum of 497 homes on approximately 198 acres. There are three categories of lot sizes within this component:

- 4,800 Square Foot Minimum Lots: Expected Yield - 116 lots on approximately 34 acres
- 5,500 Square Foot Minimum Lots: Expected Yield - 201 lots on approximately 78 acres
- 6,500 Square Foot Minimum Lots: Expected Yield - 180 lots on approximately 86 acres

In addition, there is an open space component within PA 3 (OS 2) and PA 4 (OS 3), which are described in detail below. See Exhibit 3-8, *Recreation and Open Space Master Plan*, for locations.

EXECUTIVE SINGLE-FAMILY RESIDENTIAL (MHSPA PA 7)

The Executive Single-Family Residential component provides the largest residential lots. This component requires a minimum lot size of 10,000 square feet and is expected to yield 60 lots on approximately 50 acres.

In addition, there is an open space component within PA 7 (OS 2), which is described in detail below. See Exhibit 3-8, *Recreation and Open Space Master Plan*, for the location.

MIXED-USE (MHSPA PA 8)

The Mixed-Use component comprises approximately 13 acres and pertains specifically to PA 8. The purpose of the mixed-use designation is to allow for a mixture of multi-family residential uses in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 will allow for maximum future development of up to 193 attached multi-family residential DUs and a variety of "mixed-use" non-residential development such as retail and office space, consistent with City zoning and development standards for these uses, and not to exceed the traffic projections for the MHSPA.

The number of average daily vehicle trips (ADT) generated by future land uses ultimately developed within PA 8 shall not exceed the maximum ADT at Project buildout. Any proposed uses (or combination of uses) generating ADT exceeding this amount will require additional analysis to evaluate potential traffic impacts and will be subject to further City discretionary review and approval.

Unless otherwise allowed at the time when an application is submitted for development of PA 8, future residential uses within this PA will be required to be set back from I-215 by a minimum of 500 feet from the edge of roadway ROW in compliance with applicable regulations aimed at air quality and/or public health. As such, residential use will be focused within the western portion of PA 8 and may occur as stand-alone multi-family use or in combination with office or commercial uses. In compliance with the current Murrieta GP policy and associated setback constraints, lands within 500 feet of the I-215 ROW are assumed to be limited to office and retail development, unless otherwise determined by the City.

Where mixed-use development occurs, a vertical mixture of uses is encouraged, with commercial retail, restaurant and/or office space occupying the ground floor and residential use above, combined with pedestrian-orientated design to encourage and support shopping and pedestrian activity. Otherwise, land areas may be developed with a combination of either multi-family residential or commercial uses (i.e., not vertical mixed-use) within the boundaries of PA 8.

Maximum allowed residential density would be consistent with the Multi-Family Residential Use designation as provided in *Section 16.08.020, Residential Districts General Development Standards*, and *Section 16.08.040, Multi-Family Residential Design Standards*, of the City's Development Code unless otherwise specified in MHSPA. Commercial development would occur consistent with development regulations provided in *Section 16.10.020, Commercial District General Development Standards*, and *Section 16.10.030, Commercial Districts Design Standards*, of the City's Development Code unless

otherwise specified in this Specific Plan. Refer also to MHSPA Figure 3-9, *Planning Area 8*, which provides additional development regulations.

Non-Residential Planning Areas

COMMUNITY COMMERCIAL (MHSPA PA 9)

The Community Commercial component (PA 9) includes approximately 18 acres and is intended to serve residents within and around the Project area. Anticipated land uses may include restaurants, a grocery store, and other services. Its proximity to the Loma Linda University Medical Center – Murrieta and associated professional office building, and Kaiser Permanente – Murrieta Medical Campus also provides an opportunity for visitor accommodations, such as lodging for guests of patients using the nearby medical facilities.

OPEN SPACE (MHSPA OS 1, 2, AND 3)

The Project site is located in the Western Riverside County MSHCP. The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on the conservation of species, their associated habitats and migration corridors in Western Riverside County. The overall goal of the MSHCP and HCPs generally is to maintain biological and ecological diversity within a rapidly urbanizing region. The MSHCP area includes approximately 1.26 million acres and involves all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line as well as the jurisdictional areas of several cities including Murrieta.

The MSHCP designated areas in the region as criteria areas comprised of cells which indicate areas of land that are targeted for conservation. Cells are further organized, in some instances, into cell groups which are an identified group of cells within the criteria area for which certain conservation goals and requirements are set forth.

The MHSPA is located within Subunit 2, Lower Sedco Hills, in the Sun City/Menifee Valley Area Plan of the MSHCP. The entire Project site is located within MSHCP criteria cells, and all cells are located within Cell Group C. Cell Group C includes approximately 1,300 acres, and the MHSPA Project site covers approximately 972 acres of the entire Cell Group C area. The MSHCP Cell Group C criteria call for conservation of approximately 60 to 70 percent of the cell group acreage, or approximately 780 to 910 acres within Cell Group C's 1,300 acres. The MHSPA proposes the conservation of approximately 609 acres or approximately 63 percent of the MHSPA Project site, which exceeds the minimum conservation requirements for Cell Group C as outlined in the MSHCP.

As stated previously, the Project includes the construction of McElwain Road from Keller Road southerly to Linnel Lane. The McElwain Road extension is not identified on the MSHCP's *Figure 7-1: General Plan Circulation Element with Criteria Area* as a Covered Activity under the MSHCP. To ensure compliance with MSHCP requirement, a minor amendment request for inclusion of the McElwain Road extension as a Covered Activity under the MSHCP was made. The McElwain Road extension has been added to the MSHCP as a Covered Activity through Minor Amendment No. 2017-01. See Section 4.3, *Biological Resources* and Appendix 9.3 for additional information.

A Habitat Acquisition Negotiation Strategy (HANS) process was completed in August 2019 for the MHSPA. The HANS Biological Analysis, and associated studies, along with the MSHCP approval are discussed in

greater detail in Section 4.3 of this document and copies of all relevant documents are included in Appendix 9.3 of this document.

The Open Space components are divided into three areas in the Specific Plan: the MSCHP natural open space preserve (OS 1), the Linear Nature Park (OS 2), and non-MSHCP open space category (OS 3). Neighborhood and pocket parks are not part of the open space category, but instead are designated within each PA. In total, approximately 652 acres are designated open space in the MHSPA, approximately 67 percent of the total Specific Plan area. The proposed Open Space plan is depicted in Exhibit 3-8, *Recreation and Open Space Master Plan*. A description of each Open Space component is listed below:

- **Open Space (OS 1)**: OS 1 consists of 612.94 acres (inclusive of the 4.4-acre Greer Ranch fuel modification zone easement) of natural topography and vegetation that extends from the development areas to the boundaries of the Specific Plan area. Approximately 609 acres of this open space would be preserved to protect the natural habitat and rolling hillsides of the site. Any grading required to create pads for access to the water tanks and McElwain Road within the MSHCP area would be landscaped with a stabilized, native, non-irrigated hydroseed mix. A select number of slopes adjacent to OS 1 would be revegetated, utilizing ground-up native vegetation from the Project site which is then placed on the manufactured slopes to regenerate naturally. Fire breaks within OS 1 would remain. Existing, unauthorized multi-use trails traverse OS 1. Use of these trails following Project implementation will continue to be prohibited. Placement of control measures such as fencing, gates, signage, etc. will be carried out to discourage continued unauthorized access. Diminished use of these unauthorized trails will allow the native landscape to revegetate naturally. Specific grading treatment relative to existing vegetation and fuel modification zones is provided in Section 4.3, *Biological Resources*.
- **Linear Nature Park (OS 2)**: The linear nature park consists of 37.33 acres and preserves an existing riparian corridor through the central portion of the development area, containing coast live oak woodland, southern coast live oak riparian forest, southern willow scrub, and southern cottonwood-willow riparian forest. The same classification of open space is also included in PA 3 and PA 7. No trails are proposed in the linear nature park. 4.1 acres of riparian/riverine resources within the linear nature park will be covered by a deed restriction that will protect these resources is perpetuity. According to the Fire Protection Technical Report (Appendix 9.11.1), the riparian/riverine resources that are jurisdictionally protected by the California Department of Fish and Wildlife and will be left unmaintained. Non-jurisdictional areas within the linear nature park will be maintained as a fuel modification zone through annual maintenance so that vegetation does not exceed four inches in height. Preserved woodland vegetation outside the jurisdictional area will be maintained in a park-like condition with raised canopies and removal of understory ladder fuels. Manufactured slopes and fire walls would be placed along portions of the perimeter of the linear nature park that abut residential lots. See the Fire Protection Technical Report for detailed information.
- **Non-MSHCP Area (OS 3)**: This open space consists of a non-MSHCP area adjacent to PA 4 (1.75 acres) and is surrounded by residential uses and the linear nature park. This area will be maintained by the master Homeowners Association for the MHSPA Project.

The Project would also include several different types of recreational facilities ranging from neighborhood parks, a Homeowners Association (HOA) community center, and HOA pocket parks. A 4.6-acre public neighborhood park is planned within PA 2. The park features a softball/baseball field, half-court basketball courts, tot-lot play areas, picnic areas, shade trellises, open lawn areas, restrooms, and parking. A 2.7-acre HOA community recreation center is also proposed within PA 2 adjacent to the neighborhood park. The gated private facility features a multi-purpose pool with swim lanes, spa, individual cabanas, water play area, shade structures, play areas, picnic areas, open lawns, and parking. A series of HOA pocket parks are proposed throughout the Specific Plan area to provide passive recreation within close proximity to residential areas. Each park features a perimeter walking path and turf area suitable for exercise activities, picnics, and dog walking.

CIRCULATION

The Specific Plan proposes approximately 20 acres of circulation infrastructure and improvements including a backbone street system which would serve the Specific Plan area. A looped roadway system will connect a majority of the PAs and provide connections to Keller Road and McElwain Road. Access to the Specific Plan is provided via three points along Keller Road and one point via McElwain Road. All proposed access points and roadway improvements are depicted in Exhibit 3-9, *Circulation Plan*.

From the north, the primary access point is located at the Keller Road/McElwain Road intersection, which provide direct access to the easternmost Planning Areas, including the commercial and mixed-use components. The second access point is located at the Keller Road/Gloria Road intersection which provides direct access into the central and western residential Planning Areas, including single-family components. The third access point is located at the Keller Road/Howard Street intersection which provides direct access to residential Planning Area, PA 4. From the south, access to the MHSPA area is provided via the proposed McElwain Road extension, which will begin at Linnel Lane in the City of Murrieta.

The Project also includes half-width road improvements for various road segments. See Exhibit 3-10, *Roadway Cross Sections* for the proposed roadway cross-sections which symbolize the below roadway improvements. The following describes the road segment improvements on Keller Road included in the Project, as shown in the MHSPA and Tentative Tract Map. Note that the centerline for Keller Road denotes the city limit between Menifee to the north and Murrieta to the south. The City of Murrieta will coordinate with the City of Menifee to obtain their concurrence on the proposed roadway improvements to Keller Road.

- **Keller Road, from east of McElwain Road/Zeiders Road to I-215:** This segment of Keller Road is classified as an interim major highway with an existing ROW width of 60 feet and a proposed ROW width of 109 feet. Future half-width improvements along the MHSPA area frontage within the City of Murrieta include two 12-foot wide travel lanes, a five-foot-wide bike lane, and 12 feet of parkway that includes a five-foot-wide contiguous sidewalk and a seven-foot wide landscape buffer.

  On the north side of the Keller Road centerline within the City of Menifee and existing ROW, the Project Applicant will construct two westbound travel lanes. The inside travel lane will be 10 feet wide and the outside travel lane will be 12 feet wide. An 11-foot wide through/left-turn lane will be constructed between the eastbound and westbound lanes. Future roadway improvements to

the remaining northern portion of Keller Road, will be the responsibility of the City of Menifee and will not be undertaken by the Project Applicant.

- **Keller Road, from west of McElwain Road/Zeiders Road to Howard Way:** This segment of Keller Road is classified as a secondary highway with a ROW width of 74 feet. Half-width improvements to this segment along the MHSPA area frontage include a 12-foot wide parkway with a five-foot-wide non-contiguous sidewalk and a seven-foot-wide landscape buffer. Within the existing and proposed 44 feet of ROW along the MHSPA area frontage within the City of Murrieta, a five-foot-wide bike lane, 12-foot-wide paved travel way, and 13-foot-wide painted median will be provided.

  On the north side of the Keller Road centerline within the City of Menifee and existing ROW, the Project Applicant will construct one 12-foot wide westbound travel lane. Future improvements to the remaining northern portion of Keller Road will be the responsibility of the City of Menifee and will not be undertaken by the Project Applicant.

- **Keller Road, from west of Howard Way to Gloria Road:** This segment of Keller Road is classified as a secondary highway with a ROW width of 77 feet. Half-width improvements to this segment along the MHSPA area frontage include a 12-foot parkway which includes a five-foot-wide non-contiguous sidewalk and a seven-foot-wide landscape buffer. Within the existing and proposed 44 feet of ROW along the MHSPA area frontage within the City of Murrieta, a five-foot-wide bike lane, a 12-foot wide paved travel way, and 15-foot wide painted median will be provided.

  On the north side of the Keller Road centerline within the City of Menifee and existing ROW, the Project Applicant will construct one 12-foot wide westbound travel lane. Future improvements to the remaining northern portion of Keller Road will be the responsibility of the City of Menifee and will not be undertaken by the Project Applicant.

- **Keller Road, from west of Gloria Road to End of Improvements:** This segment of Keller Road is classified as a secondary highway with a ROW width of 66 feet. Half-width improvements to this segment along the MHSPA area frontage include an 11-foot wide landscaped parkway. Within the existing and proposed 33 feet of ROW along the MHSPA area frontage within the City of Murrieta, a 10-foot-wide shoulder and a 12-foot-wide paved travel way will be provided.

  On the north side of the Keller Road centerline within the City of Menifee and existing ROW, the Project Applicant will construct one 12-foot wide westbound travel lane. Future improvements to the remaining northern portion of Keller Road will be the responsibility of the City of Menifee and will not be undertaken by the Project Applicant.

The Project also proposes to extend McElwain Road from Keller Road toward the southern boundary of the Specific Plan, continuing off-site to the existing terminus at Linnell Lane to provide north-south access between Keller Road and Linnell Lane. The following describes the road segment improvements on McElwain Road proposed by the Project:

- **McElwain Road, from Keller Road to Street "D":** This segment of McElwain Road is classified as a secondary highway with a ROW width of 88 feet. It will serve as the primary community gateway featuring two 11-foot-wide travel lanes in each direction, a five-foot-wide outside bike lane in each direction, a center 10-foot wide intermittent median/left-turn pocket lane, and a 12-foot

wide parkway on both sides of the roadway. The parkway includes a five-foot-wide non-contiguous sidewalk and a seven-foot-wide landscape buffer along both sides of the road.

- **McElwain Road, from Street "D" to the MHSPA Area Southern Boundary:** This segment of McElwain Road is classified as a "modified" collector with a ROW width of 66 feet. It features three 12-foot-wide travel lanes (one northbound and two southbound). The MHSPA proposes seven-foot-wide natural parkways with no sidewalks on both sides to minimize potential disturbance through the MSCHP open space. A six-foot-wide bike lane with two-foot wide inside offset is also proposed along both sides of the street.

Off-Site Project-Related Circulation Improvements

- **McElwain Road, from the MHSPA Area Southern Boundary to Linnel Lane:** This off-site segment of McElwain Road is classified as a "modified" collector with an existing ROW width of 60 feet and a proposed ROW width of 88 feet. The MHSPA proposes a 12-foot-wide travel lane with outside eight-foot-wide paved shoulder in each direction. A 24-foot-wide area for slopes and ROW is also proposed along each side of the roadway. The applicant will work with the City of Murrieta to acquire necessary proposed ROW, slope rights, and drainage easements to complete the extension of McElwain Road. The additional ROW is needed to realign portions of McElwain Road to create slope gradients acceptable to Murrieta Fire & Rescue The estimated total ROW required for the off-site portion of this improvement is 4.45 acres, as depicted in Exhibit 3-11*, McElwain Road Alignment – Off-Site Portion.*

Off-Site Non-Project-Related Circulation Improvements

- **Keller Road and I-215 Interchange (separate project proposed by others):** This new interchange project, proposed by the City of Murrieta as the lead agency in partnership with Caltrans, would provide improved access between Keller Road and I-215. The proposed interchange project is not part of the MHSPA; however, the developer of the MHSPA is donating the necessary ROW on the southwest corner of the intersection of Keller Road and I-215 to aid in facilitating the construction of the new interchange. See Exhibit 3-12 for a layout of the proposed interchange.

UTILITY INFRASTRUCTURE AND PUBLIC FACILITIES

Storm Drainage

The Project proposes various on-site flood control facilities and detention basins in accordance with the City of Murrieta's criteria. The drainage design for the MHSPA area also includes a series of bioretention basins for treatment and hydromodification control. The drainage plan and associated details for the MHSPA area are shown in Exhibit 3-13, *Drainage Plan* and Exhibit 3-14, *Drainage Details*, as well as on the Tentative Tract Map and Project drainage studies contained in Appendix 9.7, *Hydrology and Water Quality Reports*.

The drainage plan consists of two systems that allow for the separation of natural runoff from urban runoff. The first system collects perimeter drainage from the open space areas and conveys runoff through a system of underground storm drain facilities to the existing natural drainage watercourse in the Linear Nature Park. As requested by the City, the Project would incorporate a debris basin in the upper portion

of the natural stream that traverses the site. A debris basin reduces flood risk of communities downstream by capturing sediment, gravel, boulders, and vegetative debris that are washed out of a canyon during a storm event. The debris basin captures debris but allows water to flow into the downstream storm drain system.

The second drainage system conveys urban runoff from the developed areas. This system collects stormwater drainage from inlets and directs the flow through underground storm drain facilities within the streets and various drainage easements. These facilities terminate at a series of detention basins, which hold water for a short period of time. Detention basins are designed to collect stormwater runoff and control, or weaken, the rate of flow by directing the flow through a chain of basins or ponds. The detention volume of the basins is the difference between the pre-development runoff and runoff calculated for post-development-built conditions. The treated, or collected, runoff is then discharged at pre-development flow conditions to the natural drainage course traversing the development or to existing culverts crossing I-215.

The Project would also utilize water quality, or retention, basins, as shown in Exhibit 3-15, *Storm Drains and Water Quality Basins*. Retention basins maintain a pool of water throughout the year and hold stormwater runoff following storms. Water quality basins collect and filter (through soil and vegetation) pollutants and sediment thereby improving water quality conditions for downstream flows. Water quality basins would typically be surrounded by trees and naturalized planting areas (Exhibit 3-16, *Typical Water Quality Basin*). Some basins have flat areas adjacent to local streets or pocket parks, making the areas ideal for informal trails that meander through naturalized landscaped, connecting to other trails, pocket parks, or overlooks. Basin slopes and bottoms will be secured by tubular steel fencing which will be located along the top of the basin slopes.

In order to convey flows from the improved Project site to the existing downstream drainage system, off-site drainage facilities, including a drainage outlet structure on the north side of Keller Road west of Zeiders Road, and a new drainage pipe and outlet structure along Keller Road, passing under I-215, and outletting to the northeast corner of Keller Road and I-215 are required. Impacts from off-site drainage improvements are considered in this EIR under Subsection 4.9.5, *Impacts and Mitigation Measures* of Section 4.9, *Hydrology and Water Quality*.

Water

The Project includes various on-site water facilities, including three water tanks, two booster stations, and pipelines connecting the tanks and stations and to service laterals. Water tank sizes are determined based on storage needs for operational flow and emergencies and safety factors for peaking needs. The booster stations are proposed in order to lift water between the two pressure zones: the 1,853-foot elevation and the 2,055-foot elevation.

One booster station is proposed at the southwest corner of Keller Road at Gloria Road, adjacent to the existing reservoir water tank, which would serve as the primary source of water for the Project. The Keller Road booster station would connect to two water tanks north of PA 5, which serve the 1,853-foot pressure zone.

The second booster station would be located on a pad adjacent to the two water tanks at PA 5. The second station would boost water toward a proposed third water tank south of PA 6, which would serve the 2,055-foot pressure zone. A private access road at PA 6 would provide access to the water tank.

In addition, the EMWD is requesting that the Project Applicant construct EMWD facilities as part of its Water Facilities Master Plan, including an 18-inch water line from Keller Road to Linnel Lane (for potential reimbursement by the District).[1]

Pipeline sizing will be determined during final engineering design and will meet minimum pressures requirements throughout the system while providing the required fire flows and adhering to the EMWD's design system criteria. The water system is depicted in Exhibit 3-17, *Water Plan,* as well as on the Tentative Tract Map and Project technical studies contained in Appendix 9.10, *Utilities and Services Systems Reports*.

Sewer

The Project requires an off-site connection to an existing sewer line within Zeiders Road, approximately 2,600 linear feet north of Keller Road. As requested by EMWD, the Project would also install an off-site 15-inch sewer line easterly on Keller Road toward I-215 to capture tributary areas east of the I-215. The on-site wastewater system would flow completely by gravity from the southwest to the northeast with flows from the Project site collected at Keller Road. A sewer line along the northern portion of McElwain Road is also proposed. From the cul-de-sac between PAs 8 and 9 north to Street "C," an eight-inch sewer line is proposed. From Street "C" north to Keller Road, a 12-inch sewer line is proposed. Future facilities may also be required within the McElwain Road extension right-of-way as part of the EMWD's master planning process, for potential reimbursement by the EMWD.[2]

While a majority of the sewer system would be served with an eight-inch gravity sewer line, a larger 12-inch line at the Keller Road at Zeiders Road intersection is proposed to accommodate the Project's demands as well as the existing uses in the surrounding service area. All improvements for the provision of sewer service would ultimately be constructed in conformance with the Final Tentative Tract Map adopted for the Project. The sewer system is depicted in Exhibit 3-18, *Sewer Plan*, as well as on the Tentative Tract Map and related technical studies can be viewed in Appendix 9.10, *Utilities and Services Systems Reports*.

Off-Site Project-Related Utility Improvements

As discussed above, additional infrastructure improvements would occur off-site, outside the MHSPA area. For sewer service, improvements (underground pipelines) are proposed in Keller Road and Zeiders Road. Note that the subsurface sewer system is under the jurisdiction of the EMWD while both Keller Road (north of its centerline) and Zeiders Road are within the jurisdiction of City of Menifee and Keller Road (south of its centerline) is within the jurisdiction of the City of Murrieta. The point of connection into EMWD's system is proposed on Zeiders Road, 2,600 feet north of Keller Road near the Zeiders Road and Ciccotti Street intersection.

[1] EMWD Development Services Department. (2018). *Development Design Conditions*. Page 3. Perris, CA: EMWD. (Appendix 10.11).
[2] Boeck, M. (2015). *Murrieta Hills Master Water and Wastewater Plan of Service*. Page 16. Temecula, CA: Michael Baker International. (Appendix 10.11).

The Project also includes an off-site storm drain system along Keller Road. The proposed storm drain would outlet on the north side of Keller Road west of Zeiders Road, then travel approximately 1,700 feet east past the I-215 underpass and outlet into an existing detention basin and drainage channel at the northeast quadrant of Keller Road and I-215.

Off-site improvements are depicted in Exhibit 3-19, *MHSPA Off-site Improvements.*

3.9 SPECIFIC PLAN DESIGN GUIDELINES

The Project has incorporated design guidelines into the MHSPA, including architectural, streetscape, landscaping, lighting and monumentation. These design guidelines will enhance the Project's compatibility with adjacent areas and improve overall site aesthetics. Refer to the proposed MHSPA on file with the City of Murrieta Planning Department for further details.

ARCHITECTURAL

The architectural concept for the Project is based on traditional Southern California neighborhoods that blend various-sized single-family homes, mixed-use areas, and commercial uses into one interconnected environment. The thematic styles (Spanish, Craftsman, and Traditional) are related in form, but each has its own distinct character expressed through various architectural details, such as rooflines, finish materials, exterior window treatments, and entry and porch features. The Project would provide contemporary interpretations of these thematic styles, which would offer a variety of choice, yet together form a cohesive community identity. A Mixed-Use Concept would be determined during the site planning process for PA 8. The overall plan and the housing styles would be reviewed by the City of Murrieta for consistency with the MHSPA through a site plan review and architectural review process prior to construction.

LANDSCAPING

The natural setting of the surrounding area offers views in the form of upland sage and chaparral habitat covering slopes and peaks which rise several hundred feet above the surrounding valley floor. Existing stands of oak trees in the central portion of the site form the strongest landscape element within the community. Prominent natural rock outcroppings within the native sage-chaparral vegetation are also a major influence on the natural design. The use of boulders, stone, and heavy timbers in site elements such as park structures, walls, monuments, and fencing would blend the built landscape with the natural site. Tree species and plantings that blend well with native oaks, as well as riparian and sage-chaparral plant associations, also help blend the manmade landscape with nature. Curvilinear forms versus a linear grid are also appropriate for engaging the natural topography and landform of the site. The landscape design guidelines in Section 7.2 of the MHSPA would apply to all Planning Areas and would work in conjunction with the Murrieta MC.

Streetscape

The Specific Plan's proposed streetscape enhancements are designed to provide continuity throughout the community, and to create an appropriate blending with the natural character of Murrieta Hills. The landscaping would develop a coordinated identity for the community roadways, establishing levels of hierarchy for a varied experience from the pedestrian and vehicular perspectives within the larger consistent design vernacular. Street trees in the Project area would reflect the community's design theme

and would be selected from the Project plant palette. Refer to Section 7.2.4 of the MHSPA for a detailed list of individual roadway streetscapes, and to view the Streetscape Master Plan (MHSPA Figure 7-16) and graphic representations of the individual streetscapes (MHSPA Figures 7-17 through 7-24).

Lighting

Project lighting would include street lighting, as well as building and landscape accent lighting, and sign illumination. A coordinated lighting program would enhance the Project area by providing safe streets, lighted walkways, and architectural and landscape accents. Lighting standards and provisions would adhere to the design standards and guidelines outlined in Section 7.2.8 of the MHSPA and Section 16.18.110 - Mount Palomar Lighting Standards of the Murrieta MC.

Monumentation

Monumentation refers to site walls or built structures, some with signage and/or graphic elements, that blend with landscape treatments to bring a common identity to the overall community, and to signify special nodes or features such as at project entries, individual neighborhoods, commercial areas, and park and recreation facilities. Exhibit 3-20, *Monument Master Plan* depicts the hierarchy and location of the various monument types proposed for the Project.

Primary entry monuments would be located at the intersections of McElwain Road and Street "C" and the McElwain Road and Street "D." The monuments would utilize earth-toned stone and masonry with wrought iron accents and be of sufficient size and scale to communicate the significance of these entries to the community. A decorative medallion or insignia would be located on the pilasters on either side of the sign portion. Oak trees and other tree species of compatible form and character would be massed as a backdrop to the monuments.

Secondary monuments would be located at the intersections of Keller Road and McElwain Road and Keller Road and Street "E." The monuments would be similar in design to the primary entry monuments but scaled smaller to indicate the step down in hierarchy. Neighborhood monuments, including the executive neighborhood PA 7, would be used to identify names of Planning Areas at their entry points.

3.10 PROJECT CONSTRUCTION AND TIMELINE

Project development and full buildout is anticipated to occur over a period of eight years in three phases. Note that Project phasing is estimated, and could vary based on market conditions and other factors. Detailed construction and operational assumptions needed for air quality and GHG calculations are summarized in Sections 4.2 and 4.7, respectively, and are shown in detail in Appendix 9.2, *Air Quality/Greenhouse Gas Assessment*.

The anticipated phasing schedule is tied to three key thresholds that relate to improvements to the area roadway system. These thresholds establish the three major development phases of the Specific Plan and are as follows:

- Threshold 1: A maximum total of 300 dwelling units in the Specific Plan area.
- Threshold 2: A maximum total of 750 dwelling units in the Specific Plan area.
- Threshold 3: Full permitted buildout of all dwelling units and commercial square footage.

Table 3-2, *Phasing of Development and Infrastructure Improvements* summarizes the anticipated phasing of development and infrastructure improvements.

Phasing allows the Project to match home sales to market demand and absorption and to generate the financing necessary for infrastructure improvements. Such improvements include roads, parks, and sewer and water facilities. Phasing allows these infrastructure improvements to be installed and available to residents commensurate with the need for these services. Phasing of the development also permits for the planned and orderly construction of off-site improvements that are required.

Table 3-2: Phasing of Development and Infrastructure Improvements

Phase, Year[1]	Dwelling Units and Commercial Use[2]	Planning Area[3]	McElwain Road[4]	I-215 Interchange (by others)	Water/Sewer System	Parks and Open Space[5]
Phase 1, 2023	0-300 DU	PA 1 (47 DU) PA 2 (116 DU) PA 3 (101 DU)	- Construct McElwain Road from Keller Road to Street "D" - Construct Street "A," Street "C," and Street "D" connecting McElwain Road to Keller Road - Construct McElwain Road extension from Street "D" to Linnell Lane	Caltrans I-215/ Keller Road improvements (one eastbound lane and two westbound lanes)	- Off-site sewer with first DU - 1,853-ft pressure zone tank and booster pump - Second 1,853-ft zone may be required	- At 151st unit, public and HOA park graded, utilities stubbed - HOA park fully installed - OS 1, 2, and 3 dedication will occur prior to recordation of Final Map.
Phase 2, 2028	301-750 DU 1/2 Commercial Square Footage	PA 4 (74 DU) PA 5 (79 DU) PA 6 (80 DU) PA 7 (60 DU) PA 8 (193 DU), Mixed-Use (MU)[6] PA 9 (9.07 acres/111,078 sf)	- Install traffic signal at Keller Road at McElwain Road intersection - Install McElwain Road/Street "C" Street Signal	Add one eastbound lane and one westbound lane	- Second 1,853-ft zone tank installed - 2,055-ft pressure zone tank and second booster with portion PA 3 and PA 4	Public park fully installed
Phase 3, 2031	Full Buildout	PA 9 (9.07 acres/111,078 sf)	-	-	-	-

Notes:
[1] The Project's conditions of approval shall determine on-site and off-site roadway and other infrastructure improvements associated with development of each Planning Area. Dwelling unit triggers shall be met at time of certificate of occupancy.
[2] Dwelling unit ranges represent the maximum number of dwelling units permitted to be constructed during each phase. The currently permitted number of dwelling units in the Planning Areas to be constructed during each phase may be less than the stated maximum.
[3] The order of development of the Planning Areas and the number of units within individual Planning Areas may vary to accommodate market conditions, product demand, and required infrastructure improvements.
[4] McElwain Road would be constructed from Keller Road to Linnell Lane before lumber is delivered to the site.
[5] Quimby Act fees will be credited for dedication of public park land and improvements and will be determined as part of the Specific Plan's associated development review and approval process.
[6] The Mixed-Use (MU) zone applies specifically to PA 8. Future development within the MU zone is intended to occur as a mixture of multi-family residential uses in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 would allow for maximum future development of up to 193 attached multi-family residential dwelling units (DUs).

Source: City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Table 8-1. Murrieta, CA: City of Murrieta.

3.11 REQUIRED PERMITS AND APPROVALS

Table 3-3, *Discretionary Actions* and Table 3-4, *Other Anticipated Approvals/Permits* below includes various approvals and permits for local, state and federal agencies with jurisdiction over specific elements of the Project that may be obtained during the decision-making process. The tables are organized by agency/jurisdiction.

Table 3-3: Discretionary Actions

Agency	Action
City of Murrieta	▪ Final EIR Certification ▪ General Plan Amendment ▪ Change of Zone/Pre-Annexation Zoning ▪ Specific Plan Amendment ▪ Development Agreement ▪ Tentative Parcel and Tentative Tract Maps ▪ Statement of Overriding Considerations (if needed)
Riverside LAFCO	▪ Sphere of Influence Amendment for the City of Murrieta ▪ Annexation of MHSPA area from unincorporated County of Riverside into the City of Murrieta ▪ Annexation of "isolated" parcels south of the MHSPA area into the City of Murrieta and its SOI

The Specific Plan, and associated entitlements, shall become effective following completion and approval of the annexation process through Riverside LAFCO. All development projects in the Specific Plan area are required to be consistent with the provisions of this Specific Plan, including, but not limited to, tentative maps, development plans, conditional use permits, substantial conformance reviews, planned residential developments, grading and improvement plans, and landscape plans.

Table 3-4: Other Anticipated Approvals/Permits

Overseeing Agency	Approval/Permit
California Department of Fish and Wildlife	▪ Section 1602 Streambed Alteration Agreement ▪ California Endangered Species Act (consultation)
City of Menifee	▪ Encroachment Permit for Keller Road ▪ Infrastructure Plans/Permits (including roadway, landscape and drainage for off-site facilities)
City of Murrieta	▪ Building Plans/Permits ▪ Grading Plans/Permits ▪ Certificates of Occupancy ▪ Commercial Site Plans ▪ Infrastructure Plans/Permits ▪ Local Jurisdiction Encroachment Permit ▪ Conditional Use Permit(s) ▪ Landscape Plan ▪ Drainage Plan ▪ Water and Sewer Plan ▪ Site Development Plan ▪ Mixed-Use Development Plan ▪ Planned Residential Development Permits, including Multi-Family Residential ▪ Water Quality Management Plan

Overseeing Agency	Approval/Permit
Eastern Municipal Water District	▪ Approval and construction of plans for water and sewer facilities
Regional Water Quality Control Board	▪ NPDES General Construction Permit ▪ Clean Water Act 401 Certification
Riverside County Flood Control and Water Conservation District	▪ Drainage Facility Plan Approval
State Water Resources Control Board	▪ Construction General Permit Notice of Intent
U.S. Army Corps of Engineers	▪ Clean Water Act Section 404 Permit
U.S. Fish and Wildlife Service	▪ Endangered Species Act (consultation)
Western Riverside County Regional Conservation Authority	▪ Offer of Dedication Acceptance

3.12 PROJECT DESIGN FEATURES

Project Design Features (PDFs) are specific design and/or operational characteristics proposed by the Project Applicant that are incorporated into the Project to reduce or avoid its potential impacts to the environment. Because PDFs are incorporated into the Project, they do not constitute mitigation measures. PDFs are noted throughout the EIR in applicable impact sections and identified below in Table 3-5.

Table 3-5: Project Design Features

Resource	Project Design Features
Section 4.1, *Aesthetics*	▪ Location of higher-intensity commercial and higher-density multi-family residential dwellings along the eastern boundary near I-215 and more developed adjacent areas; ▪ Transition to medium-density single-family residential in the central portion, then to the larger-lot, lower-density estate residential homes at the development area's west end; ▪ Strategically located neighborhood and pocket parks to provide active and passive recreational facilities; ▪ Substantial reduction in density from the previously approved Specific Plan which allowed 1,585 dwelling units, to the MHSPA-proposed 750 dwelling units; ▪ Landscaping, including landscaped median swales and continuous tree placement, will contribute to the natural aesthetic of the Project area; ▪ Conserving over 600 acres of natural open space in the more visible higher elevations of the Project site; and ▪ Cohesive PDFs and building materials to match existing built-out environments to the north and south.
Section 4.2, *Air Quality*	▪ The Project has reduced air emissions by reducing the total development area in comparison to the currently approved MHSP, which reduces the area required for grading; ▪ The Project has reduced air emissions by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses); and ▪ Consistent with General Plan Policy AQ 2.2, the Project has been redesigned to avoid placing residential uses within 500 feet of the I 215 freeway.
Section 4.3, *Biological Resources*	▪ The Project has been reduced, in terms of both unit count and development footprint in comparison to the previously approved Specific Plan. In addition, in response to comments received on the Notice of Preparation (NOP), input provided during stakeholder outreach, and as a result of various technical report and study findings, the Project Applicant has further modified the Project following the NOP release, to provide additional natural open space.

Resource	Project Design Features
	▪ Open Space (OS-1) will consist of 608.54 acres of conserved and permanently preserved natural topography and vegetation that extend from the development areas to the borders of the MHSPA area. This open space will be offered for dedication to the RCA and preserved in perpetuity as part of the MSHCP system. ▪ Linear Nature Park (OS-2) will consist of 37.33 acres and will preserve an existing riparian corridor through the central portion of the development area, containing coast live oak woodland, southern coast live oak riparian forest, southern willow scrub, and southern cottonwood-willow riparian forest. The same classification of open space is also included in Planning Areas (PAs) 3, 4, and 7.
Section 4.4, *Cultural Resources*	▪ The City and Project Applicant have engaged in long-term, extensive consultation discussions with representatives from the Pechanga Tribe in order to address specific concerns regarding sensitive environmental resources such as cultural resources (see Table 4.4-1: Consultation History with the Pechanga Tribe). The Project Applicant has made modifications to the land use plan and associated grading footprint in order to avoid, where feasible, the significance bearing portion of an identified site. Where avoidance is not feasible mitigation measures, beyond what was recommended in the Project's cultural resource technical reports, are included to further minimize cultural resources impacts. ▪ Preservation of over 600 acres of open space. Open space preservation allows for the land to be left in its present condition with no ground-disturbing activities. The absence of construction activities allows undiscovered cultural resources to remain undisturbed. ▪ In consultation with the Pechanga Tribe, the City and the Project Applicant modified the McElwain Road right-of-way and alignment to minimize disturbance to sensitive resource areas.
Section 4.5, *Energy*	▪ The Project will install solar photovoltaic systems for all single- and multi-family residences (up to three stories) in compliance with the solar panel mandate effective January 1, 2020. ▪ LED streetlights where streetlights are needed. ▪ The Project has reduced energy resource usage by reducing the total development area in comparison to the currently approved Specific Plan, which reduces the area required for grading and other construction activities. ▪ The Project has reduced energy resource usage by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses). ▪ Commercial uses are proposed within proximity to the residential neighborhood, with pedestrian connections, thereby reducing vehicle miles traveled (VMT), and associated energy/fuel resources, to obtain goods and services. ▪ The Project would include amenities to serve future residents and reduce the need to travel off-site; thereby reducing energy resource/fuel consumption. This MHSPA describes a walkable community, with sidewalks that border all neighborhood streets, walking paths, and active recreational facilities, including dedicated neighborhood parks, an HOA community park, and a 4.6-acre public park.
Section 4.6, *Geology and Soils*	▪ Project land use development avoids development on ridgetop areas, where soil stability and construction impacts would be significant; ▪ Project design has set aside over 600 acres of natural open space, including portions of the site with ravines and steeper slopes, which reduces the total amount of grading and minimizes erosion; and ▪ Project construction will re-use on-site soils, where applicable, as fill during grading provided that they are free of organic matter.
Section 4.7, *Greenhouse Gas Emissions*	▪ The Project has reduced GHG emissions by reducing the total development area in comparison to the currently approved Specific Plan, which reduces the area required for grading. ▪ The Project has reduced GHG emissions by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses). ▪ Commercial uses are proposed within proximity to the residential neighborhood, with pedestrian connections, thereby reducing vehicle miles traveled (VMT) to obtain goods and services.

Resource	Project Design Features
	▪ The Project would include amenities to serve future residents and reduce the need to travel off-site. This MHSPA describes a walkable community, with sidewalks that border all neighborhood streets, walking paths, and active recreational facilities, including dedicated neighborhood parks, an HOA community park, and a 4.6-acre public park. ▪ A series of small to medium size pocket parks are located strategically throughout the community and provide passive recreation opportunities within proximity to residences. Each park features a perimeter walking path and a turf area suitable for recreational use such as exercise activities, picnics, non-programmed play, and leashed dog walking. ▪ The compact layout of the land uses and circulation system, the emphasis on walkability with the provision of sidewalks and walking paths, and the inclusion of commercial uses to serve the residential development all serve to reduce reliance on automobiles and lessen vehicle emissions, which, in turn, helps to lessen GHG emissions. ▪ Bike lanes will be incorporated throughout the Project site. ▪ The land use plan preserves approximately 613 acres of MSHCP natural open space adjacent to the residential development and an approximately 37-acre linear natural park situated within the interior of the development. ▪ McElwain Road will be extended as part of the Project, thereby completing a connection between the cities of Murrieta and Menifee. ▪ Water conservation measures include efficient water delivery systems, water-efficient fixtures, low-water consumption landscaping, water-efficient irrigation systems, and water reuse where practical. ▪ All irrigation systems shall have automatic controllers that adjust frequency and duration of irrigation event in response to real-time weather conditions. Controllers shall be equipped with a rain shutoff device. ▪ Implementation of efficient and current low-impact development (LID) strategies, including landscaped median swales and continuous tree placement.
Section 4.8, *Hazards and Hazardous Materials*	▪ The development portions of the Project site will be zoned for uses not typically associated with hazards or hazardous materials: Estate Residential (ER-3), Single Family Residential (SF-2), Mixed-Use (MU), and Community Commercial (CC). Land uses typically associated with hazards and hazardous materials, such as industrial, raw materials processing and storage, and manufacturing, are prohibited on the Project site. ▪ Exceed the California and Murrieta standard of 100-foot wide fuel modification zones by 50 feet, for 150 feet total on the Project's perimeter. In addition, perimeter lot rear yards will be considered part of the FMZ areas, providing another 20 feet, on average and increasing FMZs to 170 feet wide. ▪ The Project will include approximately 95 fire hydrants, spaced approximately every 300 feet along project streets, resulting in significant water access for fire-related emergencies. ▪ An important component of the landscape plan that is not currently required by the State or City Codes is in the area adjacent to the residences' foundations. A one to three-foot-wide landscape free area would be provided to prevent flame impingement under the stucco along the weep screed and help prevent ember penetration into the structure stucco walls.
Section 4.9, *Hydrology and Water Quality*	▪ The Project design has avoided the steeper slopes (50 percent grade or more) and has set aside over 600 acres of natural open space, which reduces construction-related grading impacts and decreases the total area of impervious surfaces from the previously approved specific plan. ▪ The drainage plan consists of two systems that allow for separation of natural runoff and urban runoff. ○ The first system would collect perimeter drainage from the open space areas and conveys runoff through a system of underground storm drain facilities to the natural drainage watercourse in the Linear Nature Park (Open Space 2). This system would have a debris basin in the upper portion of the natural stream. See Exhibit 3-15, Storm Drains and Water Quality Basins. ○ The second system would convey urban runoff from the developed areas. The system would collect the stormwater drainage from the inlets and direct the flow through underground storm drain facilities within the streets and various drainage easements to on-site detention basins. The detention basins are designed to attenuate post-development runoff to the pre-development conditions. The treated runoff is then

Resource	Project Design Features
	discharged at pre-development flows to the natural drainage courses traversing the Project site. ▪ The Project would utilize water quality and detention basins, which will be surrounded by trees and naturalized planting areas to decrease runoff, improve soil stabilization, and add to the aesthetics of the site.
Section 4.10, *Land Use and Planning*	▪ Annexation of the Specific Plan area, which is presently within unincorporated Riverside County, into the City of Murrieta which will allow the City to manage and plan development in border areas around the Project. ▪ RCA/MSHCP compliance and donation of approximately 63 percent of the Project site, meeting the 60 to 70 percent conservation target for Cell Group C (see Section 4.3, Biological Resources for more information). ▪ Creation of open spaces along the western, southern, eastern, and northern portions of the Project area. ▪ Revision from the previously approved MHSP, creating an OS buffer area (fuel modification zone) between the Project and Greer Ranch residential community. ▪ Incorporation of varying residential housing opportunities including single-family, executive single-family, and mixed-use residential (inclusive of multi-family residential). ▪ Inclusion of a community commercial zone and mixed-use element. ▪ Provision of an essential north/south connection via the extension of McElwain Road. ▪ Creation of a more compact, environmentally sensitive design by eliminating the sprawl and discontinuity of the previously approved MHSP PAs and utilizing a smaller development footprint with continuous development between neighboring Project PAs.
Section 4.11, *Noise*	▪ The Project land use plan prohibits residential land uses within 500 feet from the I-215 right-of-way, minimizing mobile source noise impacts. ▪ The Project represents a substantial reduction in density and overall development footprint in comparison to the currently approved Specific Plan, with corresponding reductions in construction-related grading and traffic noise, and operational traffic noise. ▪ Use of modern construction equipment and techniques. ▪ Use of modern building materials and techniques, including glass view fences; screening/insulation of noise-generating or vibrating equipment; and screening/buffering between commercial and residential development using plant material and masonry walls.
Section 4.12, *Public Services and Recreation*	▪ Project parks and recreation facilities are designed to blend with and enhance the natural open space of the Project site. The MHSPA Project includes a public neighborhood park and pocket parks situated within the residential Planning Areas, a linear nature park, a private homeowner association (HOA) community center, and natural open space. Approximately 63 percent of the Project site, or approximately 648 acres, are designated as active and passive open space.
Section 4.13, *Transportation*	▪ The Project has substantially reduced overall density from the previously approved Specific Plan to the current proposal by approximately 50 percent, resulting in substantial reduction in traffic and vehicle miles traveled. ▪ The Project Applicant modified the land use plan following the Notice of Preparation distribution, resulting in a reduction in total traffic and vehicle miles traveled, as noted in EIR Appendix 9.9.2. ▪ The Project site is near local and regional access routes, reducing the travel time to local City streets during construction and operations; ▪ Multiple Project access points exist along Keller Road, providing direct access to multiple Planning Areas (PAs). ▪ The McElwain Road extension allows access from the site's southern boundary to other portions of the City of Murrieta and an alternative route to I-215. ▪ Project improvements to local streets will reduce emergency services response times. ▪ The Project includes an 18-acre commercial site (PA 9) and a mixed-use planning area (PA 8) that will provide convenient shopping and services for Project area residents, therefore reducing vehicle trips.
Section 4.14, *Tribal Cultural Resources*	▪ The City and Project Applicant have engaged in long-term, extensive consultation discussions with representatives from the Pechanga Tribe in order to address specific concerns regarding sensitive environmental resources such as TCPs (see Table 4.14-2: Consultation History with the Pechanga Tribe). The Project Applicant has made modifications to the land use plan and

Resource	Project Design Features
	associated grading footprint in order to avoid, where feasible, the significance bearing portion of an identified site. Where avoidance is not feasible mitigation measures, beyond what was recommended in the Project's cultural resource technical reports, are included to further minimize cultural resources impacts. ▪ Preservation of over 600 acres of open space. Open space preservation allows for the land to be left in its present condition with no ground-disturbing activities. The absence of construction activities allows undiscovered cultural resources to remain undisturbed. ▪ In consultation with the Pechanga Tribe, the City and the Project Applicant modified the McElwain Road right-of-way and alignment to minimize disturbance to sensitive resource areas.
Section 4.15, *Utilities and Service Systems*	▪ New connections to existing water and wastewater utility infrastructure in the Project area to reduce potential Project impacts. ▪ Project design includes appropriate on-site facilities in addition to new off-site water and sewer lines along Zeiders Road and Keller Road, and in the future McElwain Road extension, to adequately serve the Project. ▪ Efficient design and material usage ▪ Project will include the installation of solar panels on single-and multi-family residences, up to three stories, constructed in 2020 and later, in compliance with the State's solar mandate. ▪ Amend and replace the adopted Murrieta Hills Specific Plan No. SPM-4, reducing the Project development footprint and number of single-family residences; thereby reducing the required utilities placements and associated construction impacts. ▪ Project utilizes a smaller development footprint than the previously approved MHSP; eliminates land uses (Memorial Park and elementary school) that require regular landscape maintenance (watering and irrigation); and provides over 600 acres of open space; thereby reducing water and irrigation facilities requirements.
Section 4.16, *Wildfire Hazards*	▪ The MHSPA (Section 7.2.7) and Tentative Tract Map (TTM) include fuel modification zones to create defensible space and reduce risks associated with wildfire. The Project provides a minimum of 50 feet wide irrigated Zone 1 and 100 feet of thinned Zone 2 (see Exhibit 4.3-10, Fuel Modification Plan). ▪ Exceed the California and Murrieta FMZ standard of 100-foot wide FMZs by a minimum of 50 feet, for a total of 150 feet (typically 170 feet including rear and/or side yards) which provides an even greater defensible space, assisting firefighter protection of this community. ▪ The Project will extend McElwain Road southerly to Linnel Lane, providing secondary emergency access or egress during construction and operation, and also improving emergency egress for the commercial and residential areas south of Linnel Lane along McElwain Road, should they need to evacuate to the north in an emergency situation. ▪ Grant a fuel modification easement along the Project's southern edge, adjacent to Greer Ranch residences, recognizing the importance for structure protection and fuel modification adjacent to the Greer Ranch residences as well as the need for a buffer that minimizes the likelihood that a structure fire in Greer Ranch spreads to the adjacent Project MSHCP Open Space. ▪ As designed, the Project has four access points into the Project. Two of these access points would provide egress to the north onto Keller Road while the third and fourth provides egress to the south along McElwain Road. Each PA includes at least two roads in and out. ▪ The Project is providing additional Fuel Modification on the perimeter of the development footprint by including: 1) 150-foot-wide Homeowners Association (HOA) managed perimeter FMZs; 2) Zone 1A, 20-foot average rear yards (which are part of the FMZ and landscaping must be compliant with this FPTR), and 3) fuel modification within the linear nature park, non-MSHCP open space, and along roadsides (see Exhibit 4.3-10, Fuel Modification Plan). ▪ Each of the Project's residences will be within 800 feet of an intersection where travel in at least two separate directions is possible and travel via either of the options will be through managed landscapes that provide for safer travel than an arbitrary, or random, secondary access through unmaintained fuels/vegetation, such as through adjacent unmaintained Open Space. ▪ Minimum 20-foot wide FMZ along both sides of internal roadways and McElwain Road (except west exposure which is 80-feet wide) to provide a buffer that will act to reduce ignition from vehicle-related causes and provide setback for wildland fuels.

Resource	Project Design Features
	▪ No gates or speed bumps or bumps would be allowed in this Project. This would allow traffic flow (ingress and/or egress) to move more rapidly in the case of emergency. ▪ Street parking will be accommodated by wide roads and designated parking areas. Where road widths do not accommodate parking, restrictions will apply, streets will be posted with signs stating, "No Parking; Fire Lane." These efforts are designed to maintain the provided roads as unobstructed travel lanes so that emergency response vehicles are not hindered during responses. ▪ The internal oak-riparian corridor (linear nature park) will provide fuel modification to reduce fuels outside jurisdictional areas to four-inches in height. Oak-riparian habitat will be minimally thinned, and tree canopy raised to prevent ladder fuels. ▪ Water service will be provided by the Eastern Municipal Water District (EMWD). Upgrades to the system, including up to three water tanks, are proposed within the Project site. All water storage and hydrant locations, mains and water pressures will be designed to fully comply with City's Guidelines for Fire Flow per 2016 edition of the California Fire Code, as amended by the City of Murrieta. ▪ The Project will include approximately 95 fire hydrants, spaced approximately every 300 feet along Project streets, resulting in significant water access for fire-related emergencies. ▪ A one to three-foot-wide landscape free area would be provided to prevent flame impingement under the stucco along the weep screed and help prevent ember penetration into the structure stucco walls. This goes above and beyond the State or City requirements. This component will be enforced by the HOA through the rules of the HOAs Covenants, Conditions and Restrictions (CCRs), which will require compliance with the FPTR (EIR Appendix 9.11.1). ▪ The Project will be subject to Chapter 7A of CBC ignition resistant building standards and will exceed those requirements in key areas: ○ All ventilation for the structures for the development would require ember-resistant vents in addition to 1/8-inch screening. This exceeds current CBC requirements. ○ Vents for all structures will be ember resistant (such as Brandguard or O'Hagin brands). ○ Dryer vents will be ember resistant. ▪ The Project will provide a lighted directory at each neighborhood entrance to assist with navigation through the community. In addition, street signs will be customized for this Project and will meet or exceed lettering size requirements. The goal is to provide clear, easy to follow signage to aid emergency response. ▪ The Project's roads will be public, ensuring that the roads are maintained and available to emergency responders for the life of the Project. ▪ In compliance with SB 969, automatic garage door openers installed in Project residences will have a battery backup function.

3.13 PROJECT IMPACTS AND SIGNIFICANCE FINDINGS

Each resource-specific section of this EIR evaluates the impacts of the Project and each impact's level of significance. Impacts and thresholds were derived from CEQA Appendix G: Environmental Checklist and are summarized in Table 3-6 below. For detailed analyses, see sections 4.1 through 4.16 of this EIR.

Table 3-6: Project Impacts and Levels of Significance

Resource Impact Statement	Level of Significance
Section 4.1, Aesthetics	
Impact 4.1-1: Would the Project have a substantial adverse effect on a scenic vista?	Less Than Significant Impact
Impact 4.1-2: Would the Project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway?	No Impact
Impact 4.1-3: Would the Project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the	Significant and Unavoidable Impact

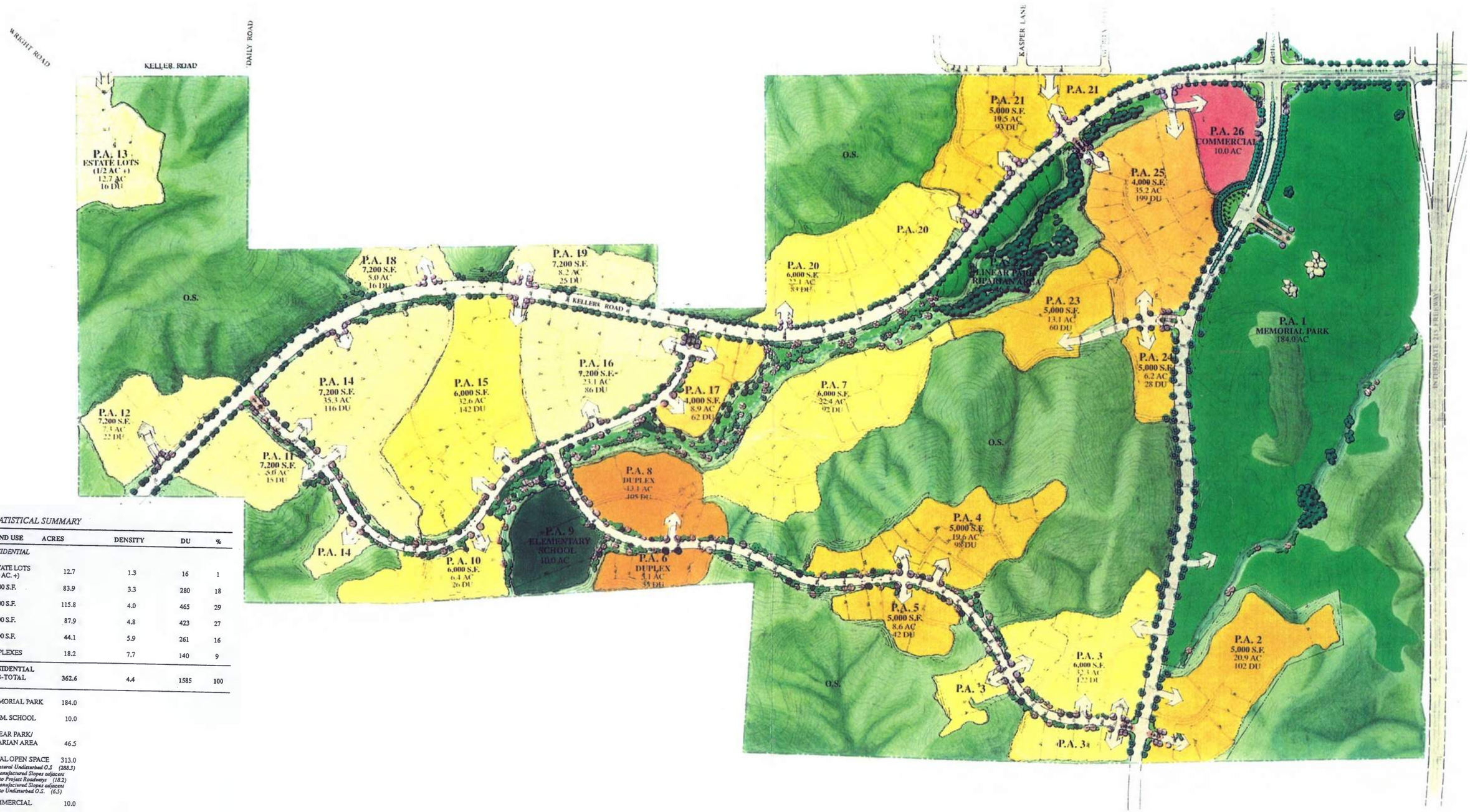
Resource Impact Statement	Level of Significance
project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	
Impact 4.1-4: Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	Less Than Significant Impact with Mitigation Incorporated
Section 4.2, Air Quality	
Impact 4.2-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?	Significant and Unavoidable Impact
Impact 4.2-2: 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?	Significant and Unavoidable Impact
Impact 4.2-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.2-4: Would the Project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	Less Than Significant Impact
Section 4.3, Biological Resources	
Impact 4.3-1: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.3-2: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.3-3: Would the Project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.3-4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.3-5: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.3-6: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	Less Than Significant Impact with Mitigation Incorporated
Section 4.4, Cultural Resources	
Impact 4.4-1: Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.4-2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.4-3: Would the Project disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant Impact with Mitigation Incorporated
Section 4.5, Energy	
Impact 4.5-1: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	Less than Significant Impact
Impact 4.5-2: Would the Project conflict with or obstruct a State or Local plan for renewable energy or energy efficiency?	Less than Significant Impact
Section 4.6, Geology and Soils	
Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	Less Than Significant Impact

Resource Impact Statement	Level of Significance
Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: ii) Strong seismic ground shaking?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iv) Landslides?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-2: Would the Project result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-3: Would the 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?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-4: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.6-5: Would the 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?	No Impact
Impact 4.6-6: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than Significant Impact with Mitigation Incorporated
Section 4.7, Greenhouse Gas Emissions	
Impact 4.7-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Significant and Unavoidable Impact
Impact 4.7-2: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Significant and Unavoidable Impact
Section 4.8, Hazards and Hazardous Materials	
Impact 4.8-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.8-2: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.8-3: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant Impact
Impact 4.8-4: Would the 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?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.8-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
Impact 4.8-6: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.8-7: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less Than Significant Impact with Mitigation Incorporated
Section 4.9, Hydrology and Water Quality	
Impact 4.9-1: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.9-2: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	Less Than Significant Impact

Resource Impact Statement	Level of Significance
Impact 4.9-3: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. Result in substantial erosion or siltation on- or off-site? ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? iii. 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?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.9-4: Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	No Impact
Impact 4.9-5: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact
Section 4.10, Land Use and Planning	
Impact 4.10-1: Would the Project physically divide an established community?	No Impact
Impact 4.10-2: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less Than Significant Impact
Section 4.11, Noise	
Impact 4.11-1: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant and Unavoidable Impact
Impact 4.11-2: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?	Significant and Unavoidable Impact
Impact 4.11-3: For a project located within the vicinity of a private airstrip or 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?	Less Than Significant Impact
Section 4.12, Public Services and Recreation	
Impact 4.12-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: i. Police protection?	Less Than Significant Impact
Impact 4.12-2: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: ii. Schools?	Less Than Significant Impact
Impact 4.12-3: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: iii. Parks? Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less Than Significant Impact

Resource Impact Statement	Level of Significance
Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	
Impact 4.12-4: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: iv. Other public facilities?	Less Than Significant Impact
Section 4.13, Transportation	
Impact 4.13-1: Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Potentially Significant and Unavoidable Impact (*for physical improvements at locations that are either unfunded or in other jurisdictions*)
Impact 4.13-2: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.13-3: Would the Project result in inadequate emergency access?	Less Than Significant Impact with Mitigation Incorporated
Section 4.14, Tribal Cultural Resources	
Impact 4.14-1: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (i) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC §5020.1(k) or (ii) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe?	Less Than Significant Impact with Mitigation Incorporated
Section 4.15, Utilities and Service Systems	
Impact 4.15-1: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.15-2: Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal dry and multiple dry years?	Less Than Significant Impact
Impact 4.15-3: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity, including treatment and/or outfall capacity, to accommodate the project's projected demand in addition to the provider's existing commitments?	Less Than Significant Impact
Impact 4.15-4: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant Impact
Impact 4.15-5: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact
Section 4.16, Wildfire Hazards	
Impact 4.16-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: i. Fire protection?	Less Than Significant Impact

Resource Impact Statement	Level of Significance
Impact 4.16-2: If located in or near SRA or lands classified as Very High FHSZ, would the Project: 1. Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.16-3: If located in or near SRA or lands classified as Very High FHSZ, would the Project: 2. Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less Than Significant Impact
Impact 4.16-4: If located in or near SRA or lands classified as Very High FHSZ, would the Project: 3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less Than Significant Impact with Mitigation Incorporated
Impact 4.16-5: If located in or near SRA or lands classified as Very High FHSZ, would the Project: 4. Expose people or structures, either directly or indirectly, to significant loss, injury or death involving wildfires, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes?	Less Than Significant Impact



STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU	%
RESIDENTIAL				
ESTATE LOTS (1/2 AC. +)	12.7	1.3	16	1
7,200 S.F.	83.9	3.3	280	18
6,000 S.F.	115.8	4.0	465	29
5,000 S.F.	87.9	4.8	423	27
4,000 S.F.	44.1	5.9	261	16
DUPLEXES	18.2	7.7	140	9
RESIDENTIAL SUB-TOTAL	362.6	4.4	1585	100
MEMORIAL PARK	184.0			
ELEM. SCHOOL	10.0			
LINEAR PARK/ RIPARIAN AREA	46.5			
TOTAL OPEN SPACE	313.0			
Natural Undisturbed O.S	*(288.3)*			
Manufactured Slopes adjacent to Project Roadways	*(18.2)*			
Manufactured Slopes adjacent to Undisturbed O.S.	*(6.5)*			
COMMERCIAL	10.0			
MAJOR ROADS	59.1			
PROJECT TOTAL	985.2	1.6	1585	

Source: MHSPA, Figure 1-3

Not to Scale

EXHIBIT 3-1: 1995 Specific Plan SPM-4 Land Use Plan
Murrieta Hills Specific Plan Amendment

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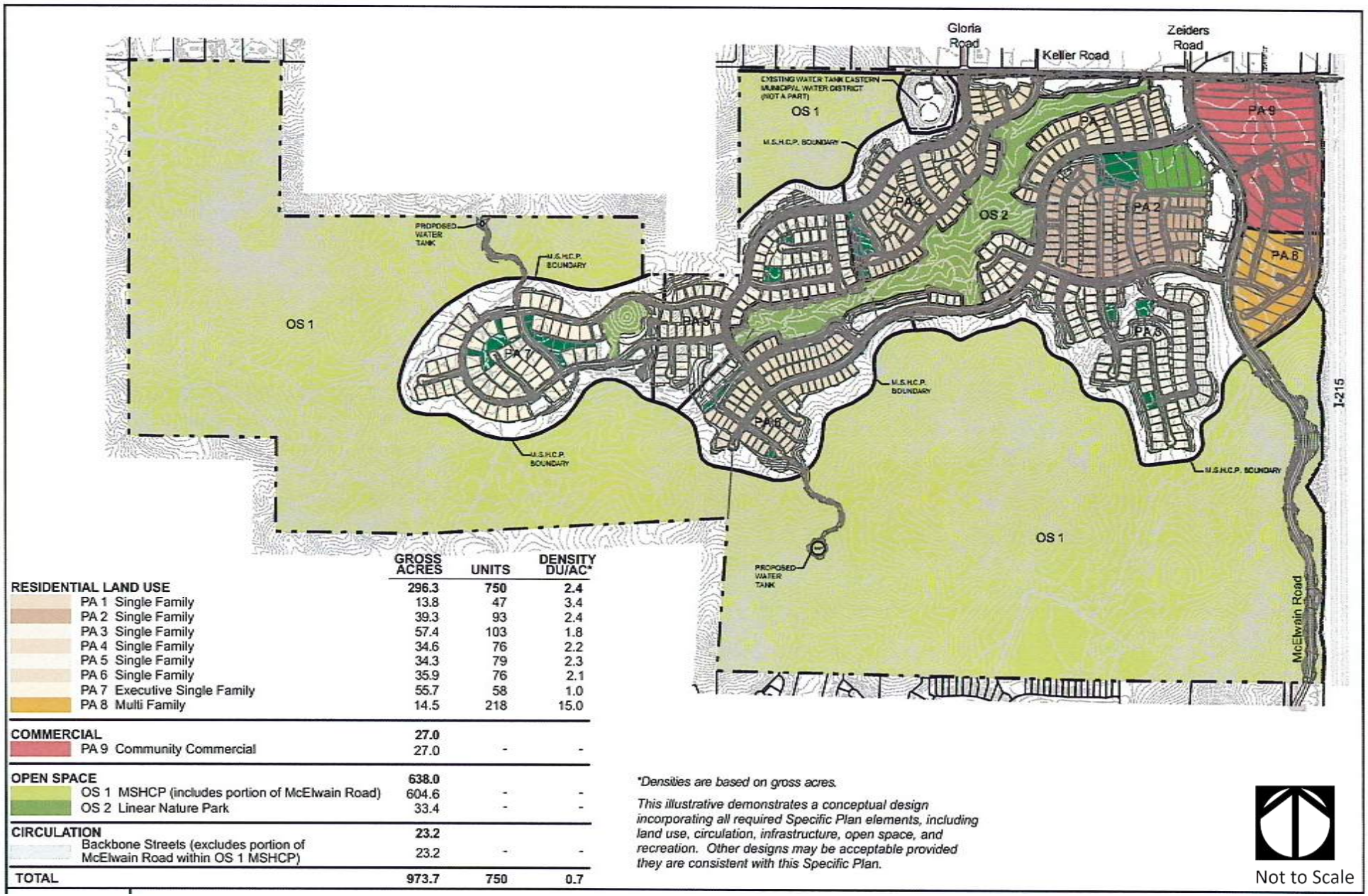


	GROSS ACRES	UNITS	DENSITY DU/AC*
RESIDENTIAL LAND USE	**296.3**	**750**	**2.4**
PA 1 Single Family	13.8	47	3.4
PA 2 Single Family	39.3	93	2.4
PA 3 Single Family	57.4	103	1.8
PA 4 Single Family	34.6	76	2.2
PA 5 Single Family	34.3	79	2.3
PA 6 Single Family	35.9	76	2.1
PA 7 Executive Single Family	55.7	58	1.0
PA 8 Multi Family	14.5	218	15.0
COMMERCIAL	**27.0**		
PA 9 Community Commercial	27.0	-	-
OPEN SPACE	**638.0**		
OS 1 MSHCP (includes portion of McElwain Road)	604.6	-	-
OS 2 Linear Nature Park	33.4	-	-
CIRCULATION	**23.2**		
Backbone Streets (excludes portion of McElwain Road within OS 1 MSHCP)	23.2	-	-
TOTAL	**973.7**	**750**	**0.7**

*Densities are based on gross acres.

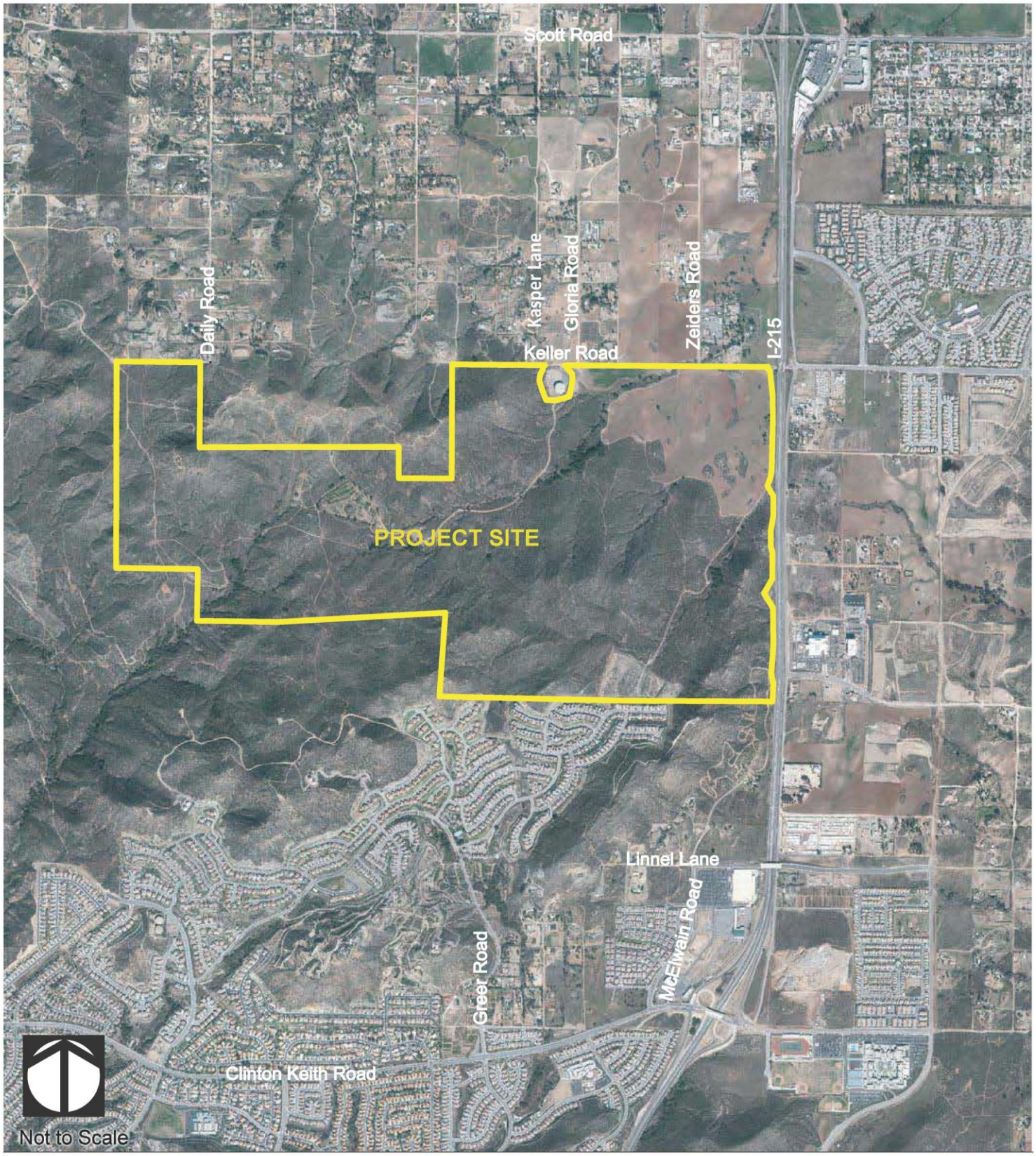
This illustrative demonstrates a conceptual design incorporating all required Specific Plan elements, including land use, circulation, infrastructure, open space, and recreation. Other designs may be acceptable provided they are consistent with this Specific Plan.

Not to Scale

Source: 2014 NOP, Figure 2

EXHIBIT 3-2: 2014 NOP Conceptual Site Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: MHSPA, Figure 1-2

EXHIBIT 3-3: Vicinity Map
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Source: MHSPA, Figure 2-1

Not to Scale

EXHIBIT 3-4: Aerial Photography of Site and Surrounding Development
Murrieta Hills Specific Plan Amendment

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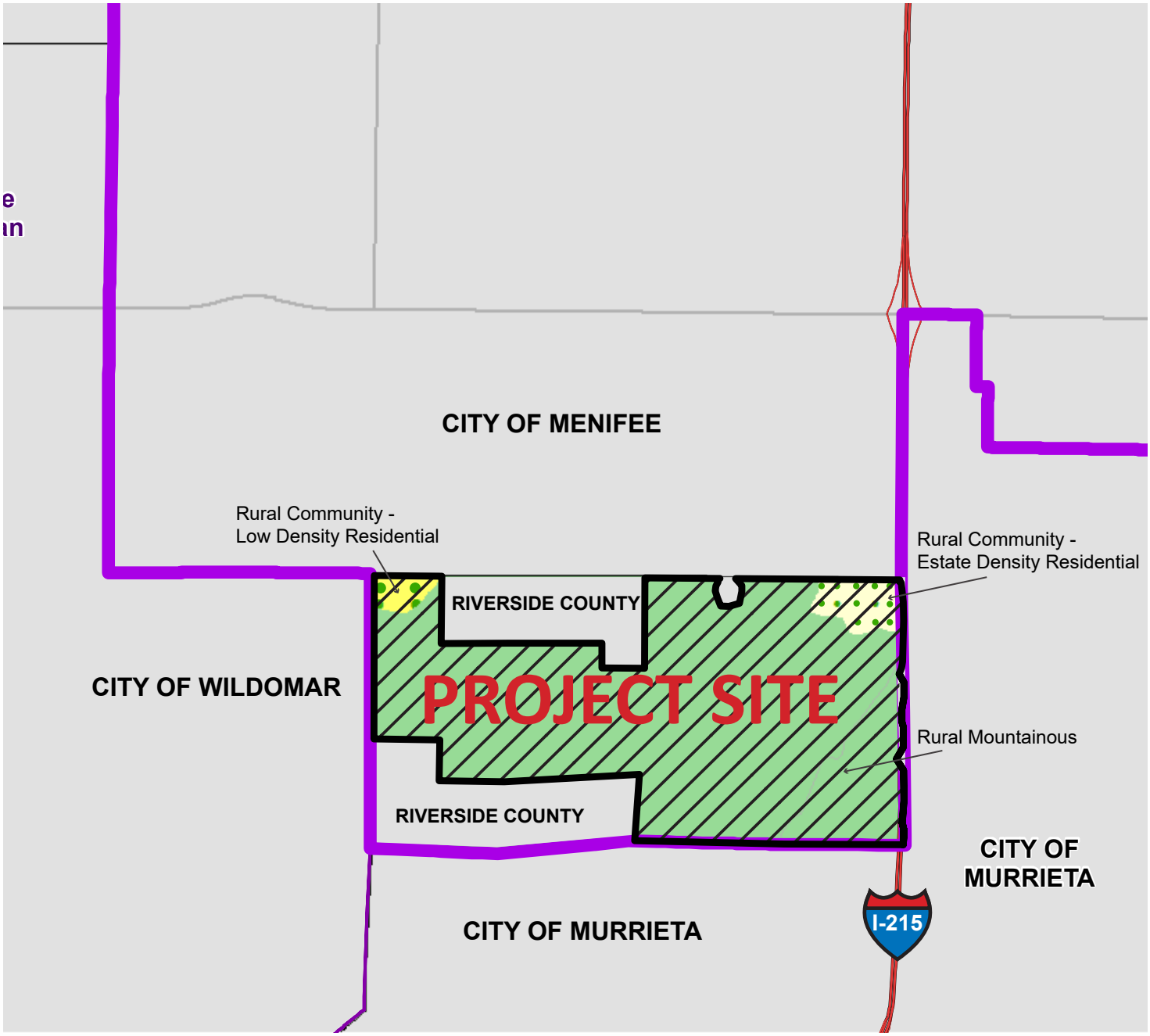

Source: MHSPA, Figure 1-4

EXHIBIT 3-5: Riverside County General Plan

Murrieta Hills Specific Plan Amendment

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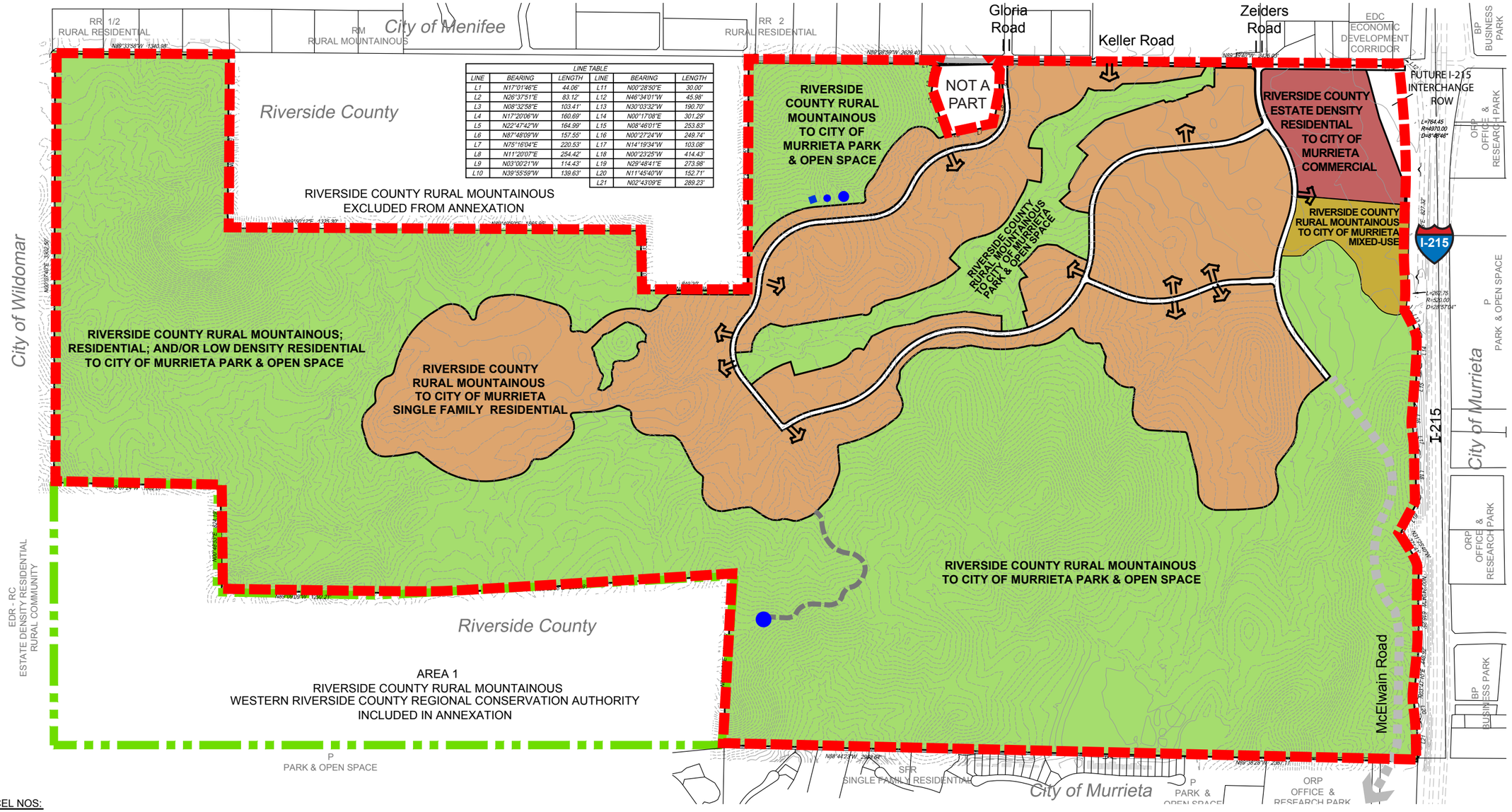


ASSESSOR PARCEL NOS:

384-190-001, 384-190-003, 384-190-005, 384-190-006, 384-190-007, 384-190-008, 384-190-009, 384-190-010, 384-190-011, 384-190-012, 384-190-013, 384-190-014, 384-210-001, 384-210-003, 384-200-006, 384-200-007, 384-200-008, 384-200-009, 384-200-010, 384-200-012, 384-200-013, 384-200-014, 384-200-015, 384-200-016, 384-200-017

LEGEND

Proposed Land Use

- Single Family Residential (PA 1 to 7)
- Mixed-Use (PA 8)
- Commercial (PA 9)
- Park and Open Space

- Proposed City of Murrieta Sphere of Influence Boundary
- Proposed Murrieta Hills Specific Plan (SPA 012-3164)
- Proposed Water Tanks and Booster Station
- Proposed Water Tank and Access Road
- Access Point

LEGAL DESCRIPTION:

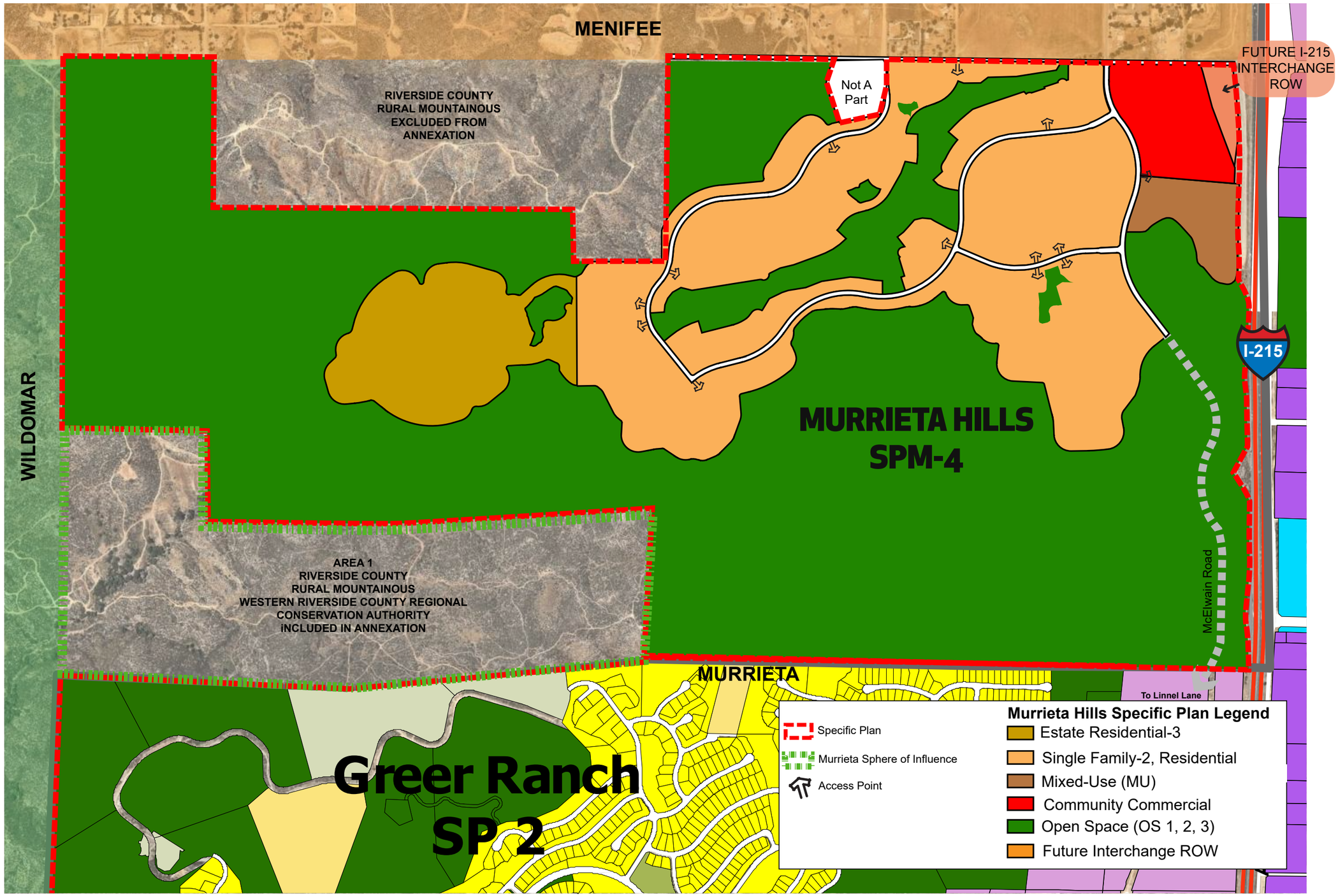
PORTIONS OF SECTIONS 27 AND 28, TOWNSHIP 6 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE, RIVERSIDE COUNTY

Source: MHSPA, Figure 1-5

Not to Scale

EXHIBIT 3-6: Proposed General Plan Amendment
Murrieta Hills Specific Plan Amendment

Kimley»Horn

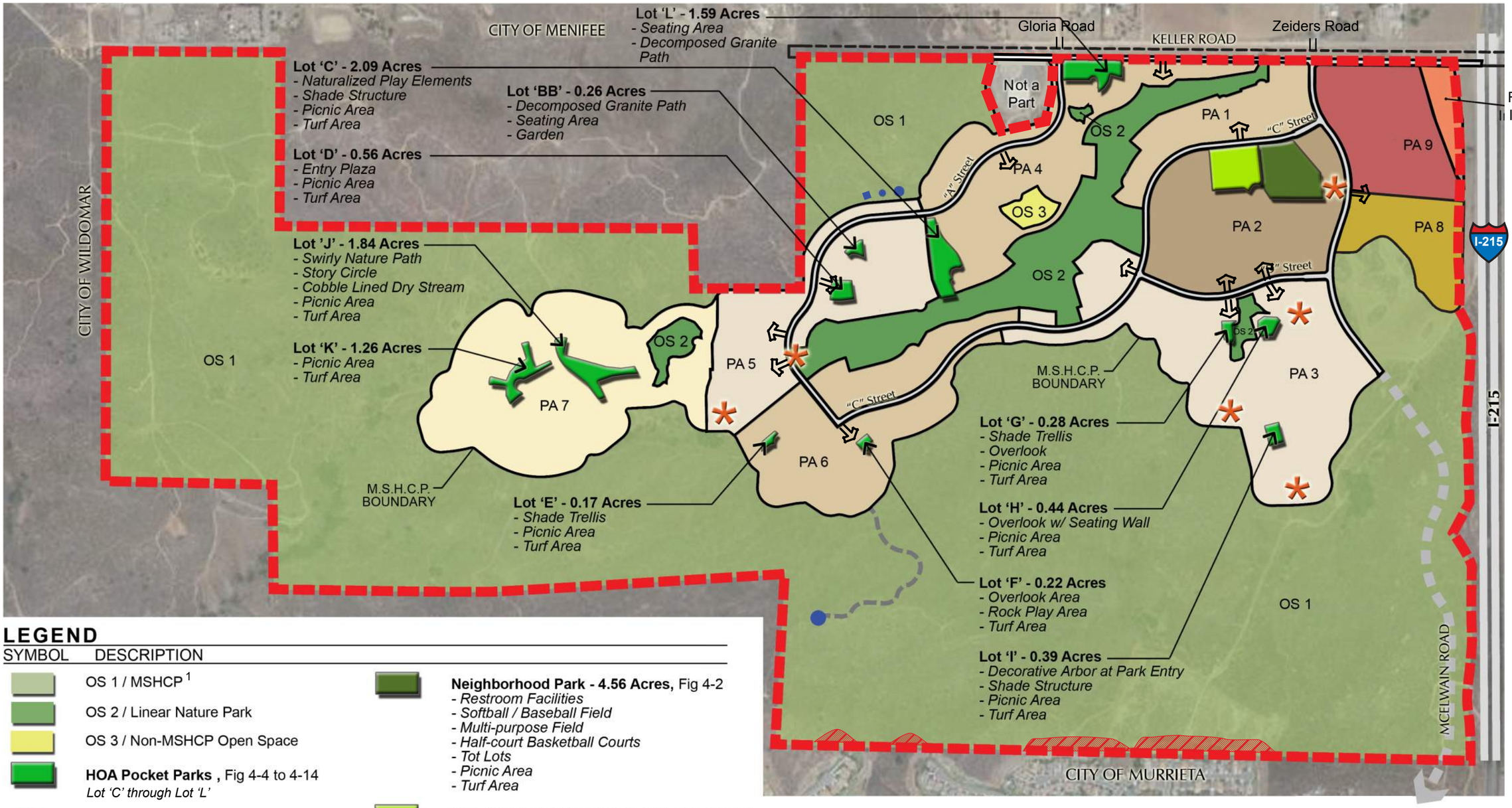


Source: MHSPA, Figure 1-6

Not to Scale

EXHIBIT 3-7: Proposed Zone Change
Murrieta Hills Specific Plan Amendment

Kimley»Horn



LEGEND

SYMBOL	DESCRIPTION
	OS 1 / MSHCP [1]
	OS 2 / Linear Nature Park
	OS 3 / Non-MSHCP Open Space
	HOA Pocket Parks , Fig 4-4 to 4-14 *Lot 'C' through Lot 'L'*
*	Overlook, Fig 4-15
	Access Point
	Proposed Water Tanks and Booster Station
	Proposed Water Tank and Access Road
	Fuel Modification Zone Easement (Greer Ranch to Maintain)

Neighborhood Park - 4.56 Acres, Fig 4-2
- *Restroom Facilities*
- *Softball / Baseball Field*
- *Multi-purpose Field*
- *Half-court Basketball Courts*
- *Tot Lots*
- *Picnic Area*
- *Turf Area*

HOA Community Center - 2.76 Acres, Fig 4-3
- *Restroom Facilities*
- *Multi-Use Pool, Spa*
- *Children's Splash Pad*
- *Tot Lots*
- *Picnic Area*
- *Turf Area*
- *Ornamental Garden*

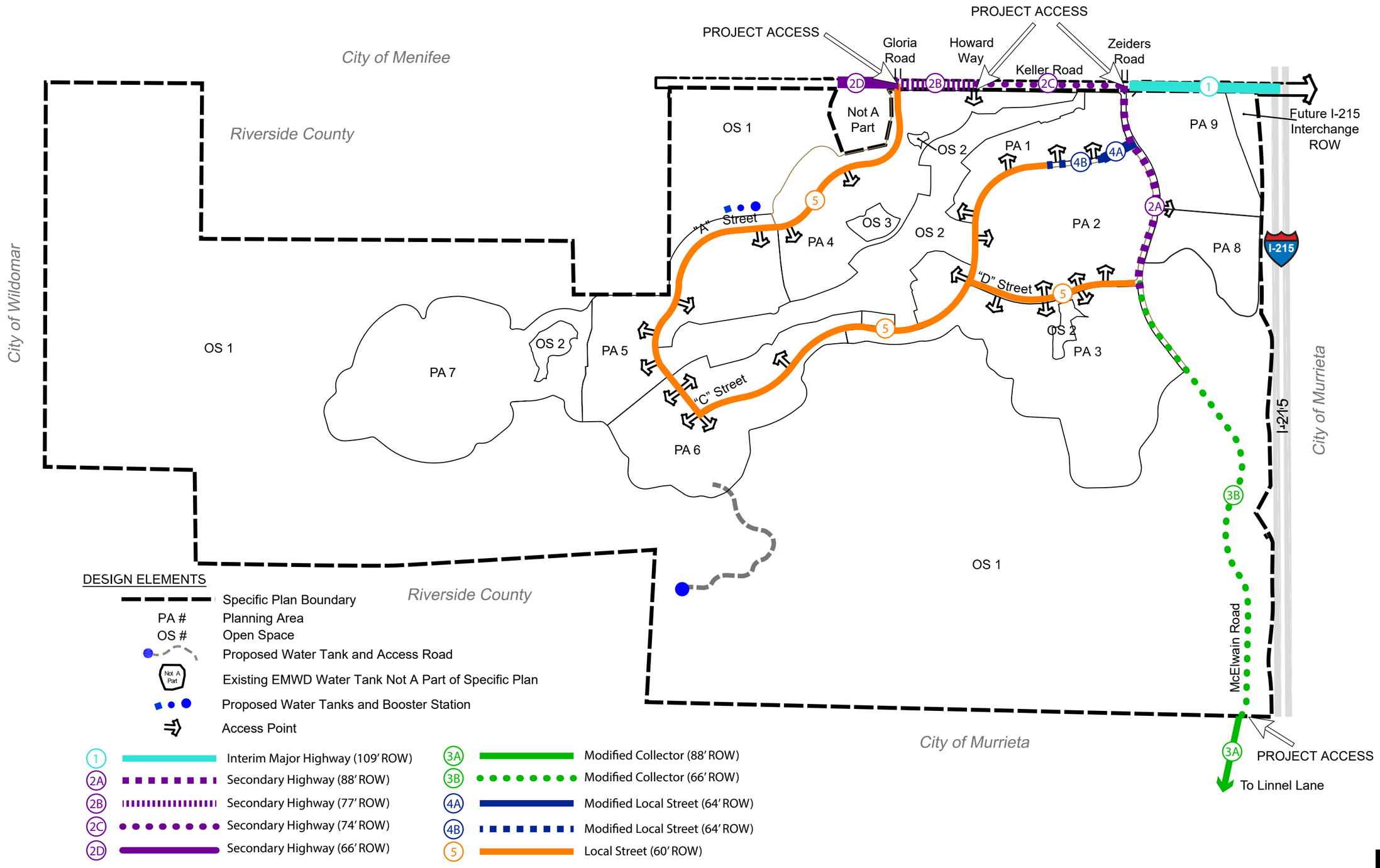
FOOTNOTE:
1. Includes portion of McElwain Road and proposed water tank/access road. OS 1 (612.94 acres) includes 4.4-acre FMZ easement (Greer Ranch). 608.54 acres will be dedicated to RCA for MSHCP.

Source: MHSPA, Figure 4-1

Not to Scale

EXHIBIT 3-8: Recreation and Open Space Master Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn



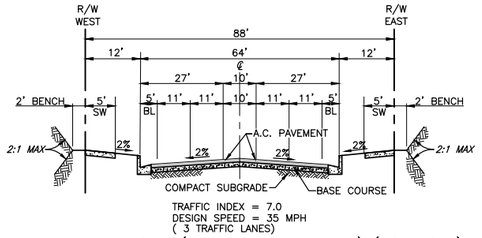
Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 5-1

Not to Scale

EXHIBIT 3-9: Circulation Plan
Murrieta Hills Specific Plan Amendment

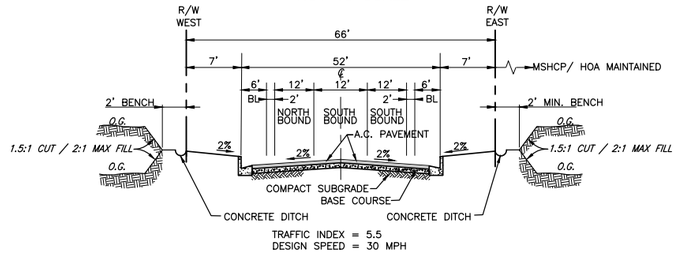
Kimley»Horn



TRAFFIC INDEX = 7.0
DESIGN SPEED = 35 MPH
(3 TRAFFIC LANES)

2A

McELWAIN ROAD (SECONDARY HIGHWAY) (STREET B)
STREET 'D' TO KELLER ROAD
STANDARD NO. 104
NOT TO SCALE

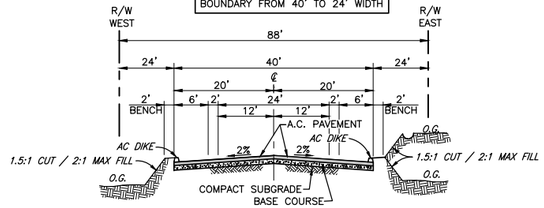


TRAFFIC INDEX = 5.5
DESIGN SPEED = 30 MPH

3B

McELWAIN ROAD (MODIFIED COLLECTOR) (STREET B)
SOUTH TRACT BOUNDARY TO 'D' STREET
STANDARD NO. 105
NOT TO SCALE

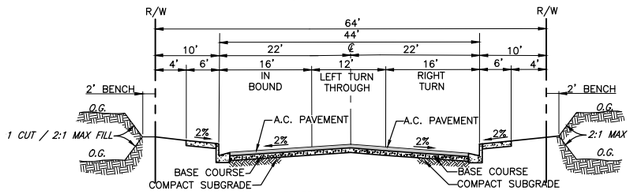
500' PAVEMENT TRANSITION OFFSITE
BEGINNINGS AT SOUTHERLY
BOUNDARY FROM 40' TO 24' WIDTH



TRAFFIC INDEX = 5.5
DESIGN SPEED = 30 MPH

3A

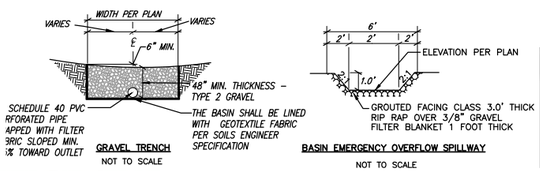
McELWAIN ROAD (MODIFIED COLLECTOR) (STREET B)
SOUTH TRACT BOUNDARY TO LINNEL LANE
STANDARD NO. 104
NOT TO SCALE
(LOOKING SOUTH)

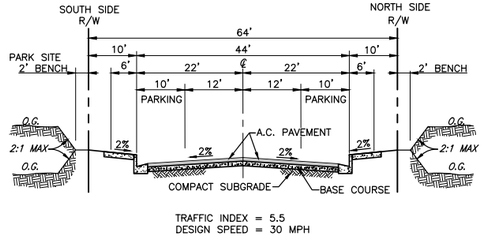


TRAFFIC INDEX = 5.5
DESIGN SPEED = 30 MPH

4A

STREET 'C' FROM McELWAIN ROAD WESTERLY
APPROXIMATELY 250 FEET (MODIFIED LOCAL STREET)
STANDARD NO. 106
NOT TO SCALE

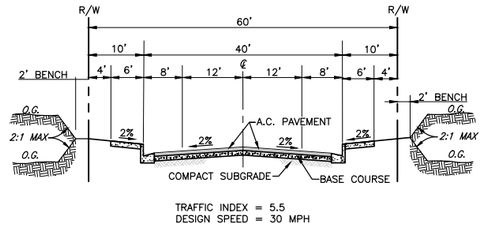




TRAFFIC INDEX = 5.5
DESIGN SPEED = 30 MPH

4B

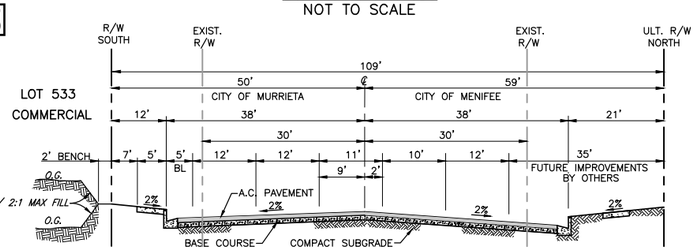
STREET 'C' BEGINNING 250' WEST OF McELWAIN &
1000' WEST OF McELWAIN (MODIFIED LOCAL STREET)
STANDARD NO. 106
NOT TO SCALE
(ADDITIONAL 2' ON EACH SIDE IN THE PARKING AREA)



TRAFFIC INDEX = 5.5
DESIGN SPEED = 30 MPH

STREET 'A', 'C' & 'D' THROUGH STREET 'I–I' (LOCAL STREET)
STANDARD NO. 106
NOT TO SCALE

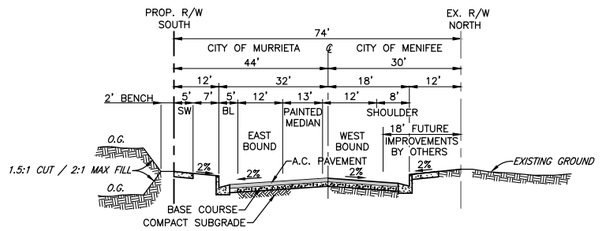
5



TRAFFIC INDEX = 7.0
DESIGN SPEED = 35 MPH

1

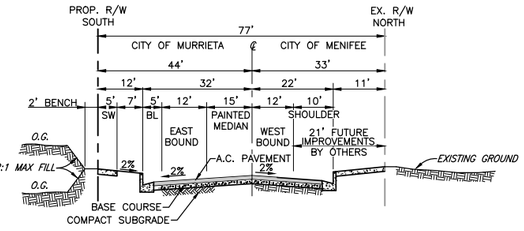
KELLER ROAD (INTERIM MAJOR HIGHWAY)
EAST OF McELWAIN ROAD / ZIEDERS ROAD
NORTH HALF PER CITY OF MENIFEE STD NO. 110
SOUTH HALF PER CITY OF MURRIETA STD NO. 103B
NOT TO SCALE



TRAFFIC INDEX = 7.0
DESIGN SPEED = 35 MPH

2C

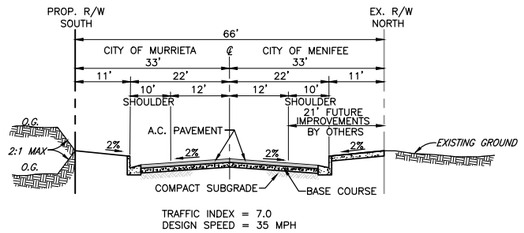
KELLER ROAD (SECONDARY HIGHWAY)
WEST OF McELWAIN ROAD / ZEIDERS ROAD TO HOWARD WAY
NORTH HALF PER CITY OF MENIFEE STD NO. 115
SOUTH HALF PER CITY OF MURRIETA STD NO. 104
NOT TO SCALE



TRAFFIC INDEX = 7.0
DESIGN SPEED = 35 MPH

2B

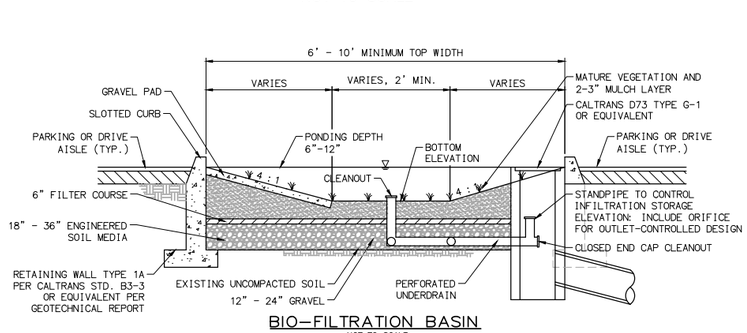
KELLER ROAD (SECONDARY HIGHWAY)
WEST OF HOWARD WAY TO GLORIA RD.
NORTH HALF PER CITY OF MENIFEE STD NO. 114
SOUTH HALF PER CITY OF MURRIETA STD NO. 104
NOT TO SCALE



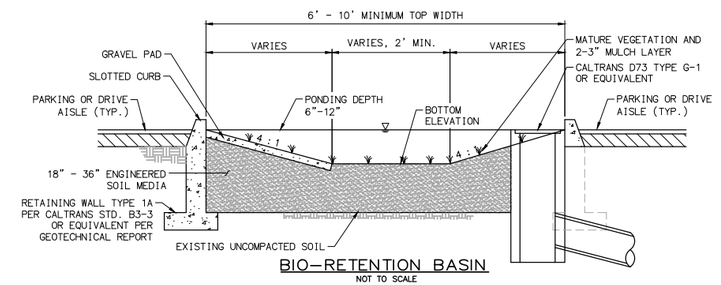
TRAFFIC INDEX = 7.0
DESIGN SPEED = 35 MPH

2D

KELLER ROAD (SECONDARY HIGHWAY)
WEST OF GLORIA ROAD TO END OF IMPROVEMENTS
NORTH HALF PER CITY OF MENIFEE STD NO. 114
SOUTH HALF PER CITY OF MURRIETA STD NO. 105
NOT TO SCALE



BIO–FILTRATION BASIN
NOT TO SCALE



BIO–RETENTION BASIN
NOT TO SCALE

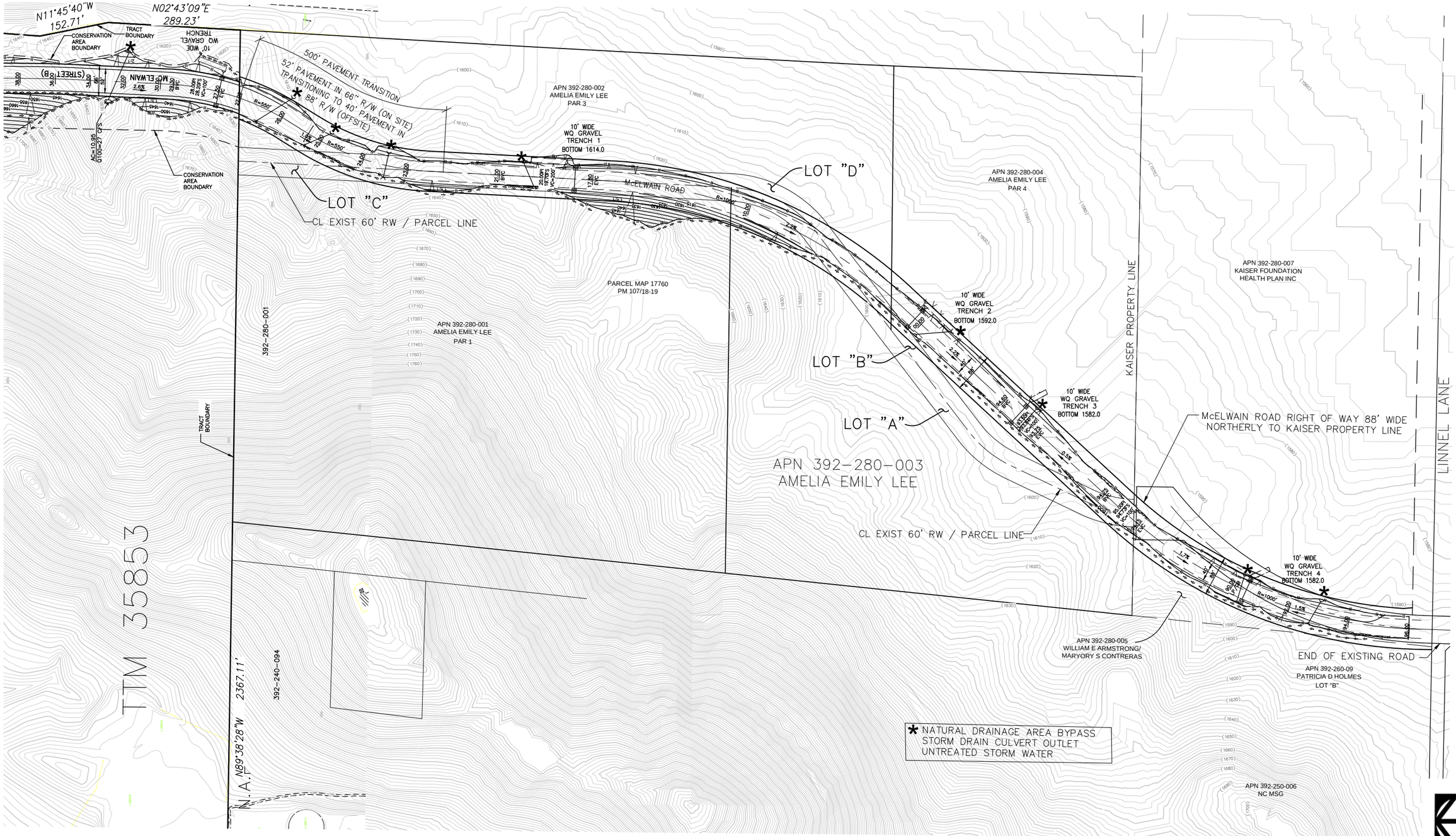
Improvements shown are representative for purposes of the Specific Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 5-2

EXHIBIT 3-10: Roadway Cross Sections
Murrieta Hills Specific Plan Amendment

Kimley»Horn

CITY OF MURRIETA
TENTATIVE TRACT MAP No. 35853



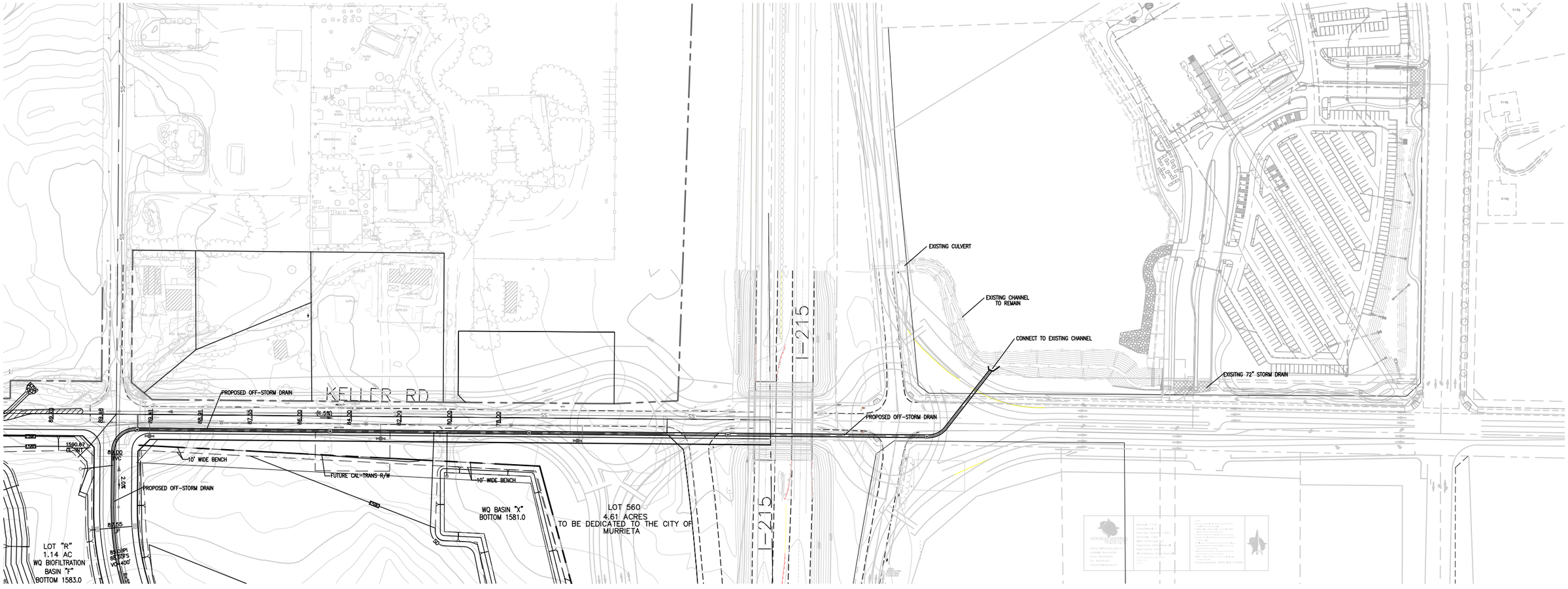
Not to Scale

Source: Tentative Tract Map No. 35853, Sheet 13

EXHIBIT 3-11: McEwlain Road Alignment - Off-site Portion
Murrieta Hills Specific Plan Amendment

Kimley»Horn

CITY OF MURRIETA
TENTATIVE TRACT MAP No. 35853

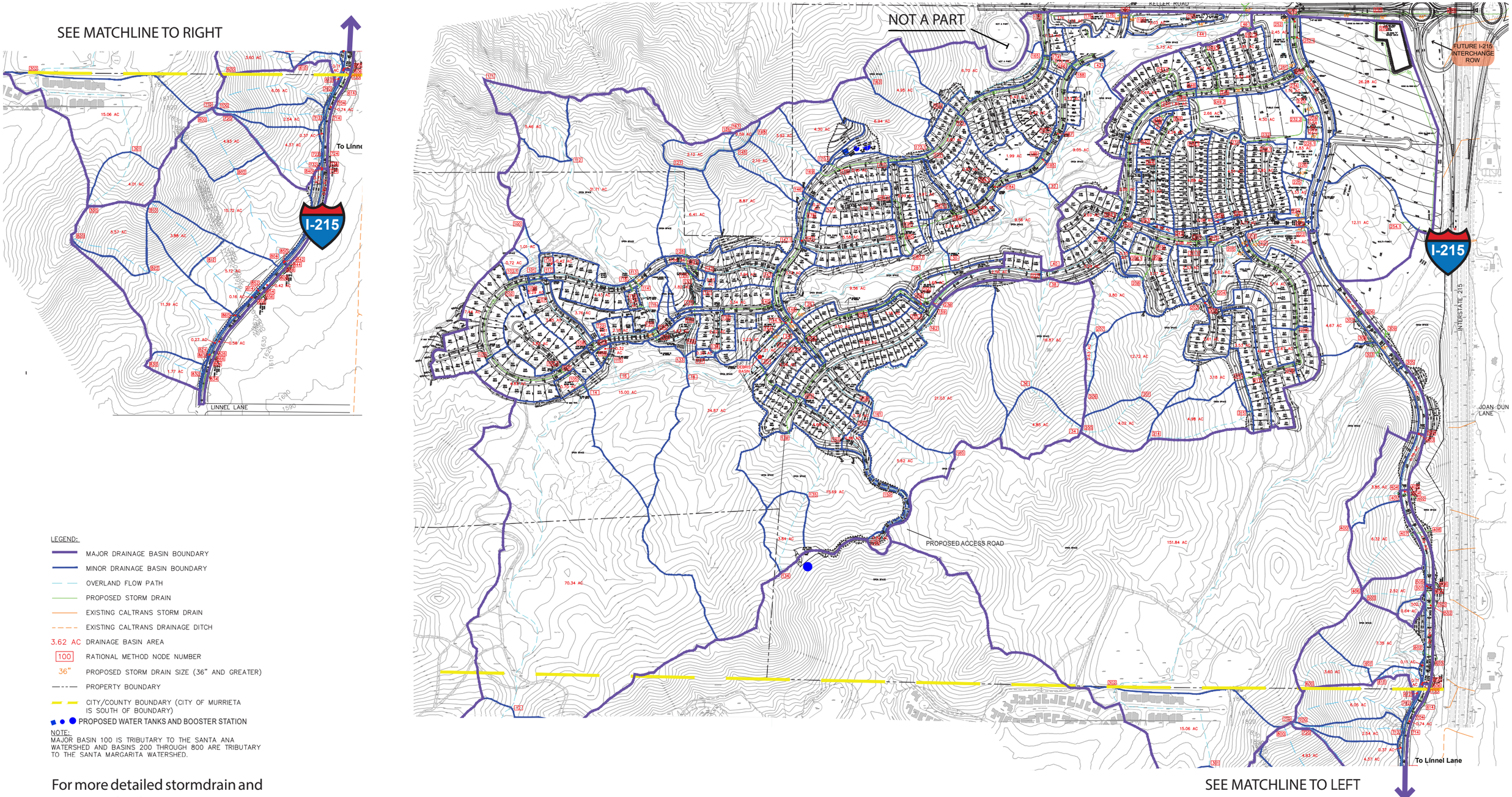


Not to Scale

Source: Tentative Tract Map No. 35853, Sheet 15

EXHIBIT 3-12: I-215 and Keller Road Interchange
Murrieta Hills Specific Plan Amendment

Kimley»Horn



LEGEND:

- MAJOR DRAINAGE BASIN BOUNDARY
- MINOR DRAINAGE BASIN BOUNDARY
- OVERLAND FLOW PATH
- PROPOSED STORM DRAIN
- EXISTING CALTRANS STORM DRAIN
- EXISTING CALTRANS DRAINAGE DITCH
- 3.62 AC DRAINAGE BASIN AREA
- 100 RATIONAL METHOD NODE NUMBER
- 36" PROPOSED STORM DRAIN SIZE (36" AND GREATER)
- PROPERTY BOUNDARY
- CITY/COUNTY BOUNDARY (CITY OF MURRIETA IS SOUTH OF BOUNDARY)
- PROPOSED WATER TANKS AND BOOSTER STATION

NOTE:
MAJOR BASIN 100 IS TRIBUTARY TO THE SANTA ANA WATERSHED AND BASINS 200 THROUGH 800 ARE TRIBUTARY TO THE SANTA MARGARITA WATERSHED.

For more detailed stormdrain and water quality basin information see Exhibit 3-15.

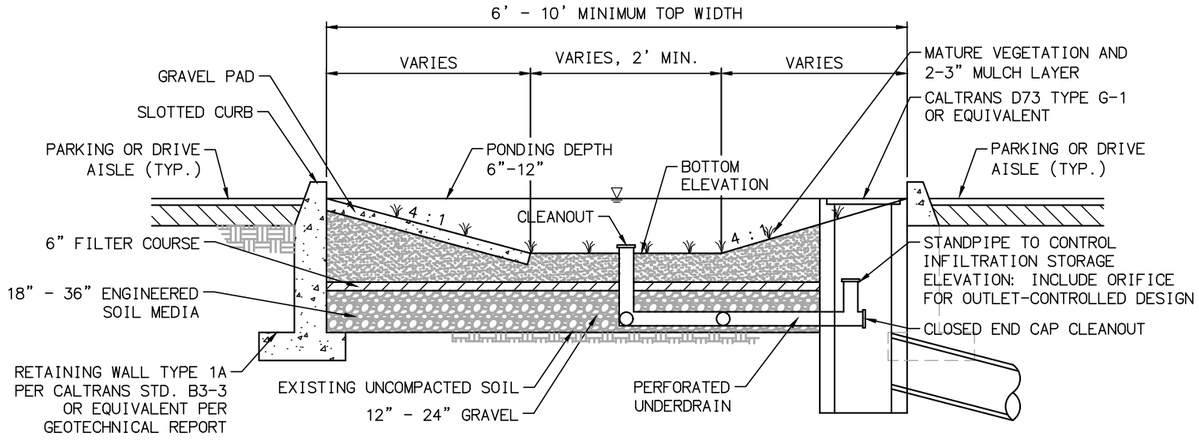
Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Not to Scale

Source: MHSPA, Figure 6-1a

EXHIBIT 3-13: Drainage Plan
Murrieta Hills Specific Plan Amendment

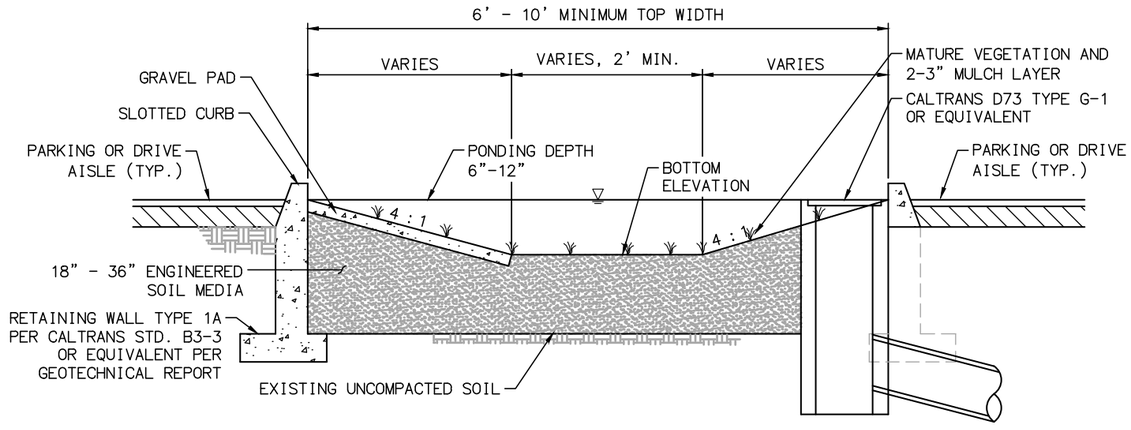
Kimley»Horn



BIO-FILTRATION BASIN

NOT TO SCALE

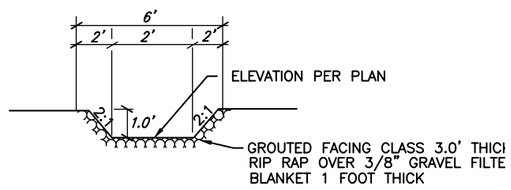
TYPICAL



BIO-RETENTION BASIN

NOT TO SCALE

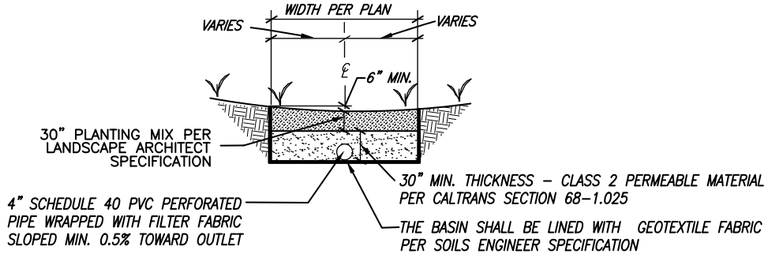
TYPICAL



BASIN EMERGENCY OVERFLOW SPILLWAY

NOT TO SCALE

TYPICAL



BIO-SWALE

NOT TO SCALE

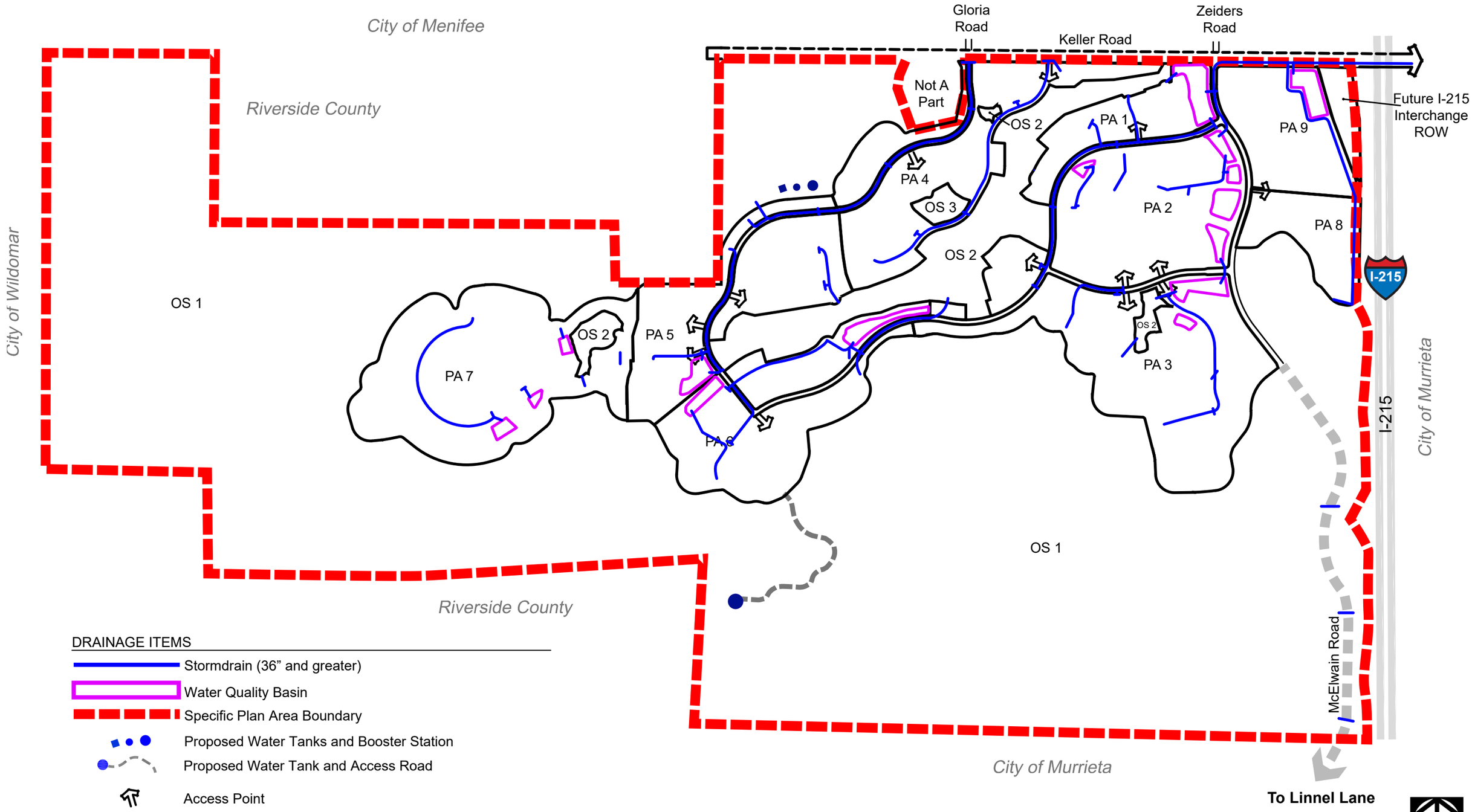
TYPICAL

Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 6-1b

EXHIBIT 3-14: Drainage Details
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 6-1c

Not to Scale

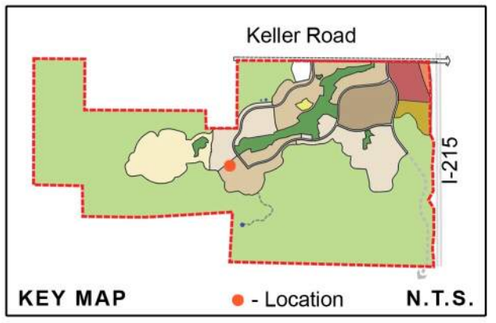
EXHIBIT 3-15: Stormdrains and Water Quality Basins
Murrieta Hills Specific Plan Amendment

Kimley»Horn

LEGEND

SYMBOL	DESCRIPTION
1	Pocket Park
2	Overlook Area w/ benches
3	Naturalized Planting Area
4	3 Rail Theme Fence
5	Residential Lot
6	Naturalized / Transitional Slope
7	Native Open Space
8	Water Quality Basin
9	Detention Basin
10	Tubular Steel Fence

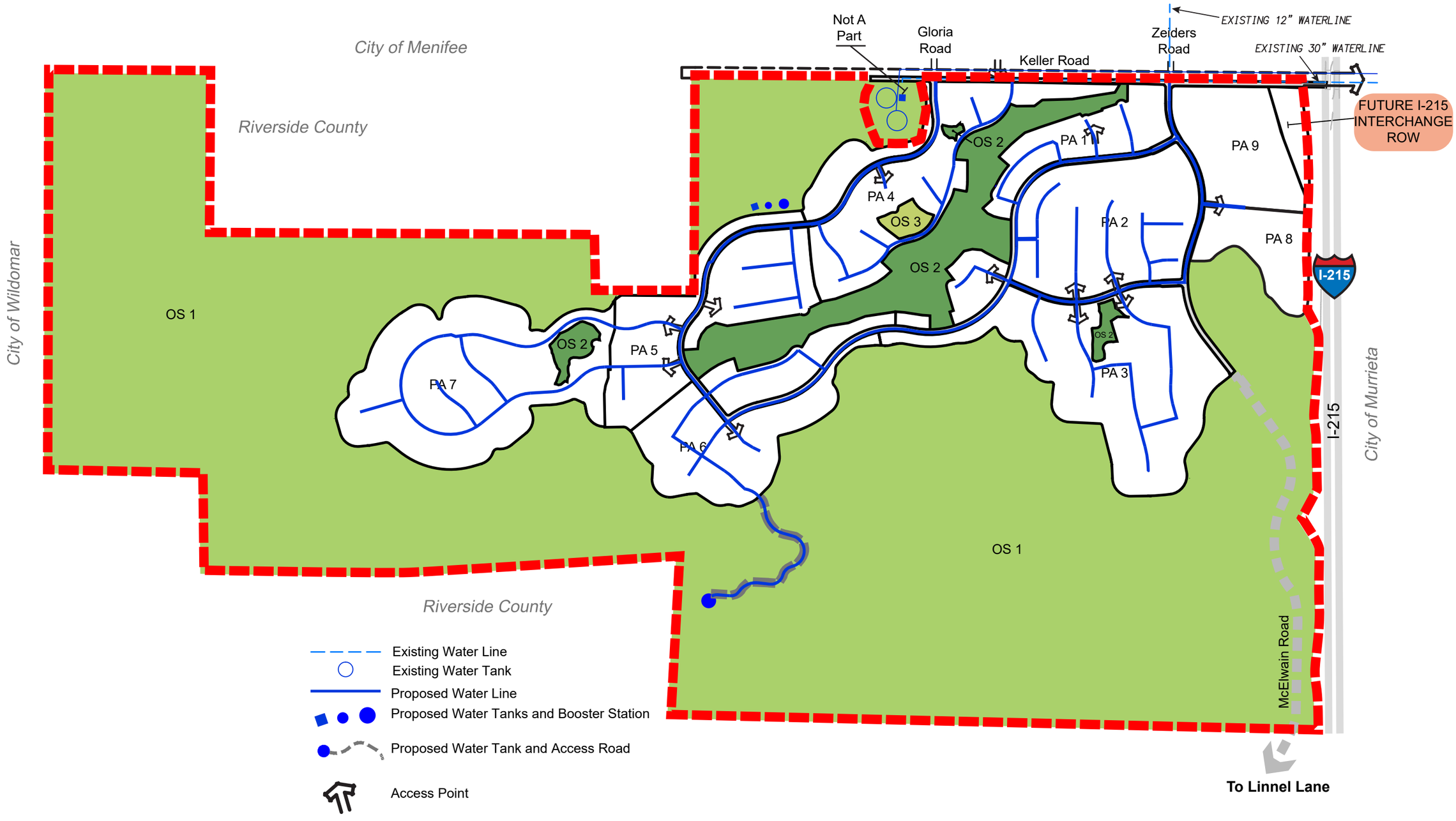
Not to Scale



Source: MHSPA, Figure 4-16

EXHIBIT 3-16: Typical Water Quality Basin
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 6-2

Not to Scale

EXHIBIT 3-17: Water Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

City of Menifee

Riverside County

City of Wildomar

Gloria Road

Keller Road

Zeiders Road

A

Not A Part

FUTURE I-215 INTERCHANGE ROW

OS 1

OS 2

OS 3

PA 1

PA 2

PA 3

PA 4

PA 5

PA 6

PA 7

PA 8

PA 9

I-215

City of Murrieta

McElwain Road

To Linnel Lane

DESIGN ELEMENTS

Proposed Sewer Line

A — Point of sewer connection in Zeiders Road, 2600 feet north with 12-inch diameter pipe.

Proposed Water Tank and Access Road
Proposed Water Tanks and Booster Station

Access Point

Improvements shown are representative for purposes of the Specifc Plan. All improvements will ultimately be constructed in conformance with the Final Tentative Tract Map, as adopted.

Source: MHSPA, Figure 6-3

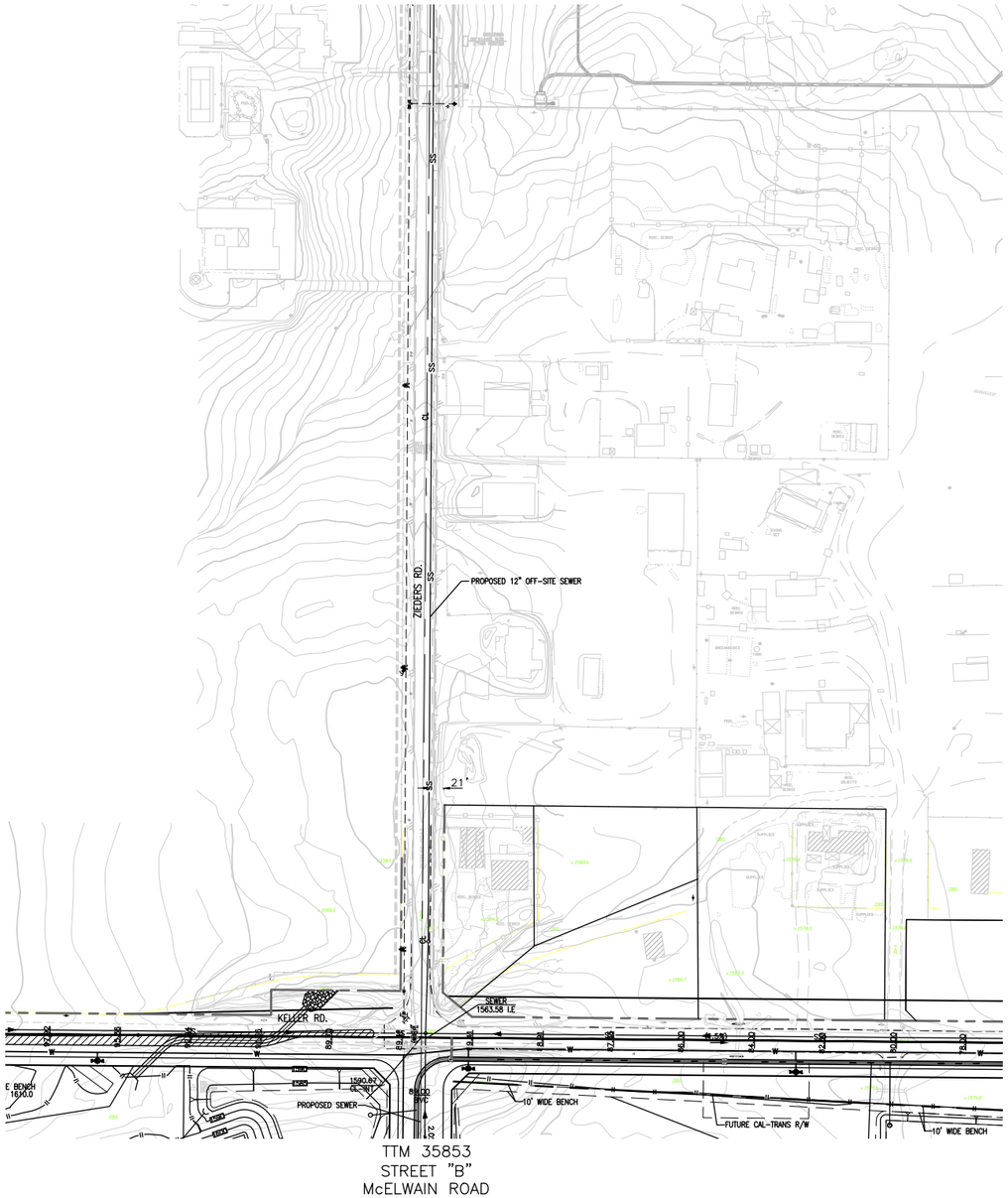
Not to Scale

EXHIBIT 3-18: Sewer Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

CITY OF MURRIETA
TENTATIVE TRACT MAP No. 35853

SEE RIGHT



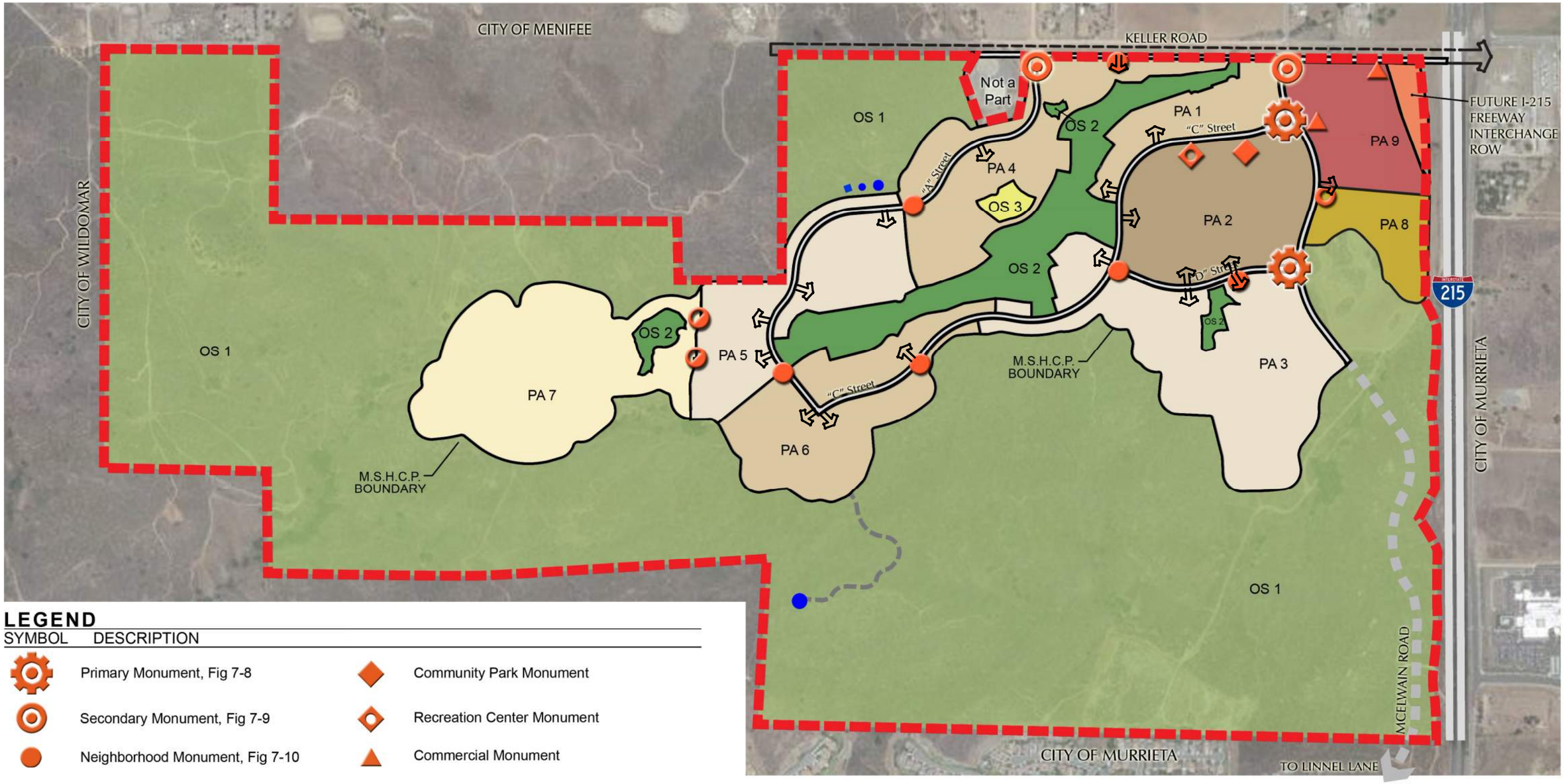
SEE LEFT

Not to Scale

Source: Tentative Tract Map No. 35853, Sheet 14

EXHIBIT 3-19: MHSPA Off-Site Improvements
Murrieta Hills Specific Plan Amendment

Kimley»Horn



LEGEND

SYMBOL	DESCRIPTION
	Primary Monument, Fig 7-8
	Secondary Monument, Fig 7-9
	Neighborhood Monument, Fig 7-10
	Executive Neighborhood Monument, Fig 7-11
	High Density Residential Monument (if Future Residential Development Occurs)
	Access Point
	Community Park Monument
	Recreation Center Monument
	Commercial Monument
	Proposed Water Tank and Access Road
	Proposed Water Tanks and Booster Station

Source: MHSPA, Figure 7-7

Not to Scale

EXHIBIT 3-20: Monument Master Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.0 ENVIRONMENTAL IMPACT ANALYSIS

Organized by environmental resource category, Section 4.0, *Environmental Impact Analysis*, provides an integrated discussion of the affected environment, including regulatory and environmental settings and environmental impacts and mitigation measures, which reduce or avoid potentially significant impacts associated with implementation of the Project. Section 6.0, *Additional CEQA Considerations*, discusses mandatory findings of significance and other required California Environmental Quality Act (CEQA) topics.

4.1 SECTION CONTENT AND DEFINITION OF TERMS

The environmental setting, impacts, and mitigation measures related to each environmental impact area are described in Sections 4.1 through 4.16. Section 4.0 is organized into the following environmental topic areas:

- Section 4.1 Aesthetics
- Section 4.2 Air Quality
- Section 4.3 Biological Resources
- Section 4.4 Cultural Resources
- Section 4.5 Energy
- Section 4.6 Geology and Soils
- Section 4.7 Greenhouse Gas Emissions
- Section 4.8 Hazards and Hazardous Materials
- Section 4.9 Hydrology and Water Quality
- Section 4.10 Land Use and Planning
- Section 4.11 Noise
- Section 4.12 Public Services and Recreation
- Section 4.13 Transportation
- Section 4.14 Tribal Cultural Resources
- Section 4.15 Utilities and Service Systems
- Section 4.16 Wildfire Hazards

The following environmental topics are not discussed in detail in this Environmental Impact Report (EIR) because the Project will not impact these resources: Agriculture and Forestry Resources, Mineral Resources, and Population and Housing. See Section 7.0, *Effects Found Not to Be Significant* for detailed information.

Note that the topics examined as part of this Murrieta Hills Specific Plan Amendment (MHSPA or Project) Environmental Impact Report (EIR) differ from those on the 2014 Notice of Preparation (NOP). Since 2014, the CEQA Guidelines Appendix G Checklist has been revised and addresses new key topics: Energy, Wildfire Hazards, and Tribal Cultural Resources.

Each potentially significant environmental issue area is addressed in a separate EIR Section (4.1 through 4.16) and is organized into the following Subsections:

- **"Environmental Setting"** provides an overview of the existing physical environmental conditions in the study area that could be affected by implementation of the Project (i.e., the "affected environment").
- **"Regulatory Framework"** identifies the plans, policies, laws, and regulations that are relevant to each resource area and describes permits and other approvals necessary to implement the Project. As noted above, the EIR needs to address possible conflicts between the Project and the requirements of federal, state, regional, or local agencies, including consistency with adopted land use plans, policies, or other regulations for the area. Therefore, this subsection summarizes or lists the potentially relevant policies and objectives, such as from the applicable *City of Murrieta General Plan* and *Municipal Code*.
- **"Significance Criteria and Thresholds"** provides the criteria used in this document to define the level at which an impact would be considered significant in accordance with CEQA. Significance criteria used in this EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines, factual or scientific information and data, and regulatory standards of Federal, state, and local agencies.
- **"Impacts and Mitigation Measures"** are listed numerically and sequentially throughout each section, for each Project component. A bold font impact statement precedes the discussion of each impact and provides a summary of each impact and its level of significance. The discussion that follows the impact statement includes the analysis on which a conclusion is based regarding the level of impact.
- **"Cumulative Impacts"** identifies potential environmental impacts of past, present and reasonably foreseeable future projects, in combination with the Project;
- **"Significant Unavoidable Impacts"** identifies environmental impacts that may remain significant even with implementation of reasonable and feasible mitigation measures.

"Mitigation Measures" are recommended where feasible to avoid, minimize, offset, or otherwise compensate for significant and potentially significant impacts of the Project, in accordance with the State CEQA Guidelines (14 CCR §15126.4). Each mitigation measure is identified by resource area, numerically, and sequentially. For example, mitigation measures in Section 4.1, *Aesthetics*, are numbered AES-1, AES-2, AES-3, and so on. Pursuant to CEQA, the EIR provides a brief discussion of potential significant impacts of a given mitigation measure, if applicable.

The level of impact of the Project is determined by comparing estimated effects with baseline conditions, in light of the thresholds of significance identified in the EIR. Under CEQA, the existing environmental setting normally represents baseline conditions against which impacts are compared to determine significance. The environmental baseline is typically set as the date of Notice of Preparation publication. Further, CEQA Guideline §15125 Environmental Setting states:

a) An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is

to give the public and decision-makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.

1) Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.

Project component-specific analyses are conducted to evaluate each potential impact on the existing environment. This assessment also specifies why impacts are found to be significant, potentially significant, or less than significant, or why there is no environmental impact.

CCR §15382 and PRC §21068 define a significant effect on the environment as a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant." A potentially significant effect is one that, if it were to occur, would be considered a significant impact; however, the occurrence of the impact is uncertain. PRC §21100(b)(3) states that mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy, shall be included in the EIR. Subsection (d) of PRC §21100 adds that for the purposes of this section (PRC §21100), any significant effect on the environment shall be limited to substantial, or potentially substantial, adverse changes in physical conditions which exist within the area as defined in PRC §21060.5. Therefore, a "potentially significant" effect and "significant" effect are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. 14 CCR §15364 and PRC §21061.1 states that "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. A mitigation measure is determined to be feasible if it would avoid or substantially lessen a significant effect on a resource (PRC §21082.3). A "less than significant" impact is one that would not result in a substantial adverse change in the physical environment (applicable significance thresholds would not be exceeded in consideration of Project Design Features and existing laws, ordinances, standards or regulations).

Both direct and indirect effects of the Project are evaluated for each environmental resource area (14 CCR §15126.2 and PRC §21065.3). Direct effects are those that are caused by the action and occur at the same time and place. Indirect effects are reasonably foreseeable consequences that may occur at a later time or at a distance that is removed from the Project area, such as growth-inducing effects and other effects related to changes in land use patterns, population density, or growth rate, and related effects on the physical environment.

Cumulative impacts are discussed below and throughout Section 4.0, at the end of each individual resource section.

There are no mitigation measures proposed when there is no impact, or the impact is determined to be "less than significant" prior to mitigation (14 CCR §15126.4(a)(3)). Where sufficient feasible mitigation is not available to reduce impacts to a less than significant level, the impacts are identified as remaining "significant and unavoidable."

4.2 CUMULATIVE IMPACTS ANALYSIS

CEQA REQUIREMENTS

Under the CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (14 CCR §15130(a)(1)). According to CEQA, an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable" (14 CCR §15130(a)). Together, these projects compose the cumulative scenario which forms the basis of the cumulative impact analysis.

Cumulative impacts analysis should highlight past actions that are closely related either in time or location to the project being considered, catalog past projects, and discuss how they have harmed the environment and discuss past actions even if they were undertaken by another agency or another person. Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, "but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (14 CCR §15130(b)).

For purposes of this EIR, the Project would cause a cumulatively considerable and therefore significant cumulative impact if:

- The cumulative effects of other past, current, and probable future projects without the Project are not significant and the Project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact.
- The cumulative effects of other past, current, and probable future projects without the Project are already significant and the Project would result in a cumulatively considerable contribution to the already significant effect. The standards used herein to determine whether the contribution is cumulatively considerable include the existing baseline environmental conditions, and whether the Project would cause a substantial increase in impacts, or otherwise exceed an established threshold of significance.

The approach and geographic scope of the cumulative impact evaluation vary depending on the environmental topic area being analyzed. The individual "Cumulative Impacts" subsections within each environmental topic present impacts and mitigation measures for the Project. Each section of the DEIR begins with a summary of the approach and the geographic area relevant to that environmental topic area. For most environmental topic areas, the list approach is used. The list of potentially relevant projects

as well as methodology and relevant planning documents are discussed in each impact section's discussion of "Cumulative Impacts."

The cumulative analysis must include sufficient detail to be useful to the decision-maker in deciding whether, or how, to alter the Project to lessen cumulative impacts. Table 4-1, *Cumulative Projects List* provides a list of projects that were used in assessing the potential for cumulative impacts from the Project. Most of the projects included in the cumulative analysis are undergoing, or are required to undergo, their own independent environmental review under CEQA. Significant adverse impacts of the cumulative projects are required to be reduced, avoided, or minimized through the application and implementation of feasible mitigation measures. The net effect of these mitigation measures is assumed to be a general lessening of contribution to cumulative impacts. The cumulative analysis discussion, found at the end of each impact section, provides an analysis of overall cumulative effects of the Project taken together with other past, present, and reasonably foreseeable probable future projects.

GEOGRAPHIC SCOPE

In respect to this EIR analysis, cumulative effects can generally be geographically classified as localized, site-specific resource issues, regional, watershed-level resource issues, and global resource issues. At the localized, site-specific resource scale, the Project's cumulative impacts have been analyzed for all 16 resource topics.

Each of the cumulative impact categories (EIR Section 4.0) is analyzed and regulated by different agencies and associated regulatory or policy documents, in order to best protect the resource in question. The analysis of cumulative effects considers a number of variables, including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on the topography surrounding the Project site and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects of the Project. The EIR addresses the Project's potentially significant impacts, recommends Project-specific feasible mitigation measures, and then also identifies existing or recommended measures to address potential cumulative impacts.

CUMULATIVE ANALYSIS APPROACH

There are two commonly used approaches, or methodologies, for establishing the cumulative impact setting or scenario. One approach is to use 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, …" (14 CCR §15130(b)(1)(A) and PCR §21083(b)(2)). The other approach is to use 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" (14 CCR §15130(b)(1)(B) and PCR §21100(e)).

This EIR uses the list-based approach plus the "previously certified EIR" approach ("hybrid approach") to provide a broad understanding and context for analyzing the cumulative effects of a project.

From a broad perspective, the Project is situated adjacent to the I-215 at Keller Road interchange, in a rapidly developing portion of southwest Riverside County, at the junction of the growing cities of Menifee,

Murrieta and Wildomar. The Project represents a substantially reduced density compared to the currently approved Specific Plan for the site, at roughly 50 percent fewer dwelling units than the 1,585 approved in 1995.

Cumulative impacts of this developing part of the County are addressed in the *County of Riverside General Plan Final EIR No. 521*,[1] *City of Murrieta General Plan 2035 Final EIR*[2], and *City of Menifee General Plan Draft EIR*.[3] On an even broader level, cumulative impacts of southern California buildout have been addressed in Southern California Association of Governments' (SCAG) *2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Final Program EIR*.[4] The 2016 RTP/SCS considers a longer horizon view of potential future growth through the year 2040.

Specific cumulative projects were developed in consultation with City staff and incorporated into the Project Traffic Impact Analysis (TIA) (refer to Section 4.13, *Transportation*, and Appendix 9.9.1, *Murrieta Hills Specific Plan Traffic Impact Analysis*). TIA page 25 and TIA Appendix I, *Cumulative Projects Location Map* specifically show the 24 cumulative projects used in the TIA, which were then factored into the cumulative analysis for related quantitative environmental issues such as air quality and noise. The 24 cumulative projects are listed below in Table 4-1, *Cumulative Projects List*.

Taken together, the projects identified in the above table and included in the TIA cumulative analysis, together with previously certified local and regional planning program EIRs, provide context as to the nature of potential cumulative projects. The intent of the cumulative impact discussions is to provide sufficient information to inform decision-makers and the public, rather than "tiering" off of prior CEQA documents for cumulative impacts.

[1] Riverside County Planning Department. (2015). *General Plan Amendment No.960 EIR No.521 CAP*. Retrieved from Riverside County Website: https://planning.rctlma.org/ZoningInformation/GeneralPlan/GeneralPlanAmendmentNo960EIRNo521CAPFebruary2015.aspx. Accessed March 14, 2019.

[2] City of Murrieta. (2011). *Murrieta General Plan 2035*. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/303/General-Plan-2035. Accessed March 14, 2019.

[3] City of Menifee. (2013*). Menifee General Plan Draft Environmental Impact Report*. Retrieved from City of Menifee Website: https://www.cityofmenifee.us/262/Draft-Environmental-Impact-Report. Accessed March 14, 2019.

[4] SCAG. (2016). *Final Program Environmental Impact Report*. Retrieved from SCAG Website: http://scagrtpscs.net/Pages/FINAL2016PEIR.aspx. Accessed March 14, 2019.

Table 4-1: Cumulative Projects List

Project No.	Name	Location
1	Pinnacle Senior Living	City of Murrieta
2	Mitchell Crossings Apartments	City of Murrieta
3	Los Alamos Hills Specific Plan	City of Murrieta
4	The Orchard at Stonecreek	City of Murrieta
5	The Vineyard Shopping Center	City of Murrieta
6	Kaiser Medical Center - planned to be constructed in five phases	City of Murrieta
7	Golden Cities	City of Murrieta
8	Loma Linda University Medical Center	City of Murrieta
9	Adobe Springs	City of Murrieta
10	Murrieta Market Place	City of Murrieta
11	Health South Rehab Hospital	City of Murrieta
12	Skilled Nursing Facility	City of Murrieta
13	Cantalena Specific Plan	City of Menifee
14	Menifee Commercial Specific Plan	City of Menifee
15	Commerce Pt. I & II	City of Menifee
16	The Junction Shopping Center	City of Menifee
17	Rancho Bonito	City of Menifee
18	Mill Creek Promenade	City of Menifee
19	Zeiders Road CUP	City of Menifee
20	Granite – TR33511	City of Menifee
21	Golden Meadows – TR31194	City of Menifee
22	Hidden Hills – TR30142	City of Menifee
23	Terra Bella – TR28206	City of Menifee
24	Christensen Ranch – TR32628 (City of Menifee).	City of Menifee

Source: Michael Baker International (2018). *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 25. San Diego, CA: Michael Baker International.

Note: The temporal boundaries for the TIA are from 2017 (existing conditions) through forecast year 2035. For the projects listed in this table, construction by 2035 is not definite. Construction of additional projects outside of those listed above is likely. Therefore, it is unreasonable quantify and consider all new development and redevelopment within the study area. The TIA was conducted with the best available data at the initiation of the analysis. In addition, CEQA Guideline 15130. Discussion of Cumulative Impacts, Subsection (b)(1)(B) authorizes a Lead Agency to limit its analysis of probable future projects to those which are planned, or which have had an application made at the time the NOP is released for review.[5] The NOP for this Project was distributed on March 17, 2014, with the 30-day public review period concluding on April 15, 2014.

[5] CEQA. (2019). *Article 9. Contents of Environmental Impact Reports, Section 15130. Discussion of Cumulative Impacts*. Retrieved from State of California Website: http://resources.ca.gov/ceqa/guidelines/art9.html. Accessed July 16, 2019.

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4.1 AESTHETICS

4.1.1 INTRODUCTION

This section examines the aesthetic and other visual resources present on the Murrieta Hills Specific Plan Amendment (MHSPA or Project) site and its surroundings and evaluates whether the Project would adversely impact such resources. Aesthetic and other visual resources include both natural and built-up environments.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project have a substantial adverse effect on a scenic vista?

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

c) Would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

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

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.1.5, *Impacts and Mitigation Measures* below, impacts will be less than significant; no impact; significant and unavoidable; and less than significant with mitigation incorporated, respectively.

The data presented in this section was obtained from available public resources including the *City of Murrieta General Plan (Murrieta GP)*, the *City of Murrieta Municipal Code (Murrieta MC)*, the *City of Menifee General Plan (Menifee GP)*, the *County of Riverside General Plan (Riverside County GP), and the County of Riverside Zoning Ordinance No. 348,* among others.

VISUAL RESOURCE TERMINOLOGY AND CONCEPTS

When viewing the same landscape, people may have different responses to that landscape and any proposed visual changes, based upon their values, familiarity, concern, or expectations for that landscape and its scenic quality. Because each person's attachment to and value for a landscape is unique, visual changes to that landscape inherently affect viewers differently. However, generalizations can be made about viewer sensitivity to scenic quality and visual changes. Recreational users (e.g., hikers, equestrians, tourists, and people driving for pleasure) are expected to have a high concern for scenery and landscape character. People commuting daily through the same landscape generally have a moderate concern for scenery, while people working at industrial sites generally have a lower concern for scenic quality or changes to existing landscape character. The visual sensitivity of a landscape is affected by the viewing distances at which it is seen, such as close-up or far away. The visual sensitivity of a landscape is also affected by the travel speed at which a person is viewing the landscape (high speeds on a highway, low speeds on a hiking trail, or stationary at a residence). Sensitive visual resources include historic sites,

archaeological sites, and tribal cultural resources. Visual resources, as they relate to tribal cultural resources, include tribal cultural landscapes which may be defined temporally (with regard to time) or geographically (such as by natural features such as a stream, boulder or outcrop) and through oral traditions and cultural practices. For more information on tribal cultural resources, see Section 4.14 of this EIR.

The same project feature can be perceived differently by people depending on the distance between the observer and the viewed object. When a viewer is closer to a viewed object in the landscape, greater detail is visible, and there is greater potential influence of the object on visual quality because of its form or scale (relative size of the object in relation to the viewer). When the same object is viewed at background distances, details may be imperceptible but overall forms of terrain and vegetation are evident, and the horizon and skyline are dominant. In the middle ground, some detail is evident (e.g., the foreground), and landscape elements are seen in context with landforms and vegetation patterns (e.g., the background).

The following terms and concepts are used in the discussion below to describe and assess the aesthetic setting and Project impacts.

Scenic Vista. An area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. This includes any such areas designated by a federal, state, or local agency.

Scenic Highway. Any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency.

Sensitive Receptors. Viewer responses to visual settings are inferred from a variety of factors, including distance and viewing angle, types of viewers, number of viewers, duration of view, and viewer activities. The viewer type and associated viewer sensitivity are distinguished among project viewers in recreational, residential, commercial, military, and industrial areas. Viewer activities can range from a circumstance that encourages a viewer to observe the surroundings more closely (such as recreational activities) to one that discourages close observation (such as commuting in heavy traffic). Viewers in recreational areas are considered to have high sensitivity to visual resources. Residential viewers generally have moderate sensitivity but extended viewing periods. Viewers in commercial, military, and industrial areas are considered to have low sensitivity.

Viewshed. A project's viewshed is defined as the surrounding geographic area from which the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations. "Project viewshed" is used to describe the area surrounding a project site where a person standing on the ground or driving a vehicle can view the project site.

Visual character typically consists of the landforms, vegetation, water features, and cultural modifications that impart an overall visual impression of an area's landscape. Scenic areas typically include open space, landscaped corridors, and viewsheds. Visual character is influenced by many different landscape attributes including color contrasts, landform prominence, repetition of geometric forms, and uniqueness of textures among other characteristics.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County

Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.1.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1] Existing on-site and off-site visual conditions are reflected in Exhibit 4.1-1, *Public Viewpoints*.

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive is roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

SCENIC VISTAS

The Murrieta GP identifies that the City's natural setting offers views and vistas of features that have both scenic and ecological value. The Hogbacks are considered a prominent visual feature within the Murrieta landscape that can be seen from many vantage points. Santa Rosa Plateau views occur along the I-15 and I-215 freeways, as well as from lands located west of the Hogbacks. Additionally, oak woodland habitat and a variety of canyons are also present along the Santa Ana Mountain's foothills and add to the City's existing visual character. Given that Murrieta is surrounded by rolling hillsides and steep mountain slopes, distant vistas of surrounding significant visual features are afforded from within the City including the San Jacinto Mountains that are visible to the east and the Santa Margarita and Agua Tibia ranges to the south.

The Menifee GP Environmental Impact Report (EIR) notes that scenic views from Menifee include the San Jacinto Mountains to the northeast and east; the San Bernardino Mountains to the north; the San Gabriel Mountains to the northwest; and the Santa Ana Mountains to the west and southwest.[2] The County of

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] Halligan, W. (2013). *Draft City of Menifee General Plan Environmental Impact Report.* Page 5.1-2. Santa Ana, CA: The Planning Center|DC&E. Retrieved from City of Menifee Website: https://cityofmenifee.us/DocumentCenter/View/1101/Ch-05-01-AE?bidId. Accessed July 8, 2019.

Riverside GP states that the Santa Rosa National Monument includes mountains or other natural features with high scenic value.[3]

VISUAL CHARACTER

The County of Riverside GP identifies the importance of natural visual resources, including low-lying valleys, mountain ranges, rock formations, rivers, and lakes, and acknowledges that views of these features are frequently experienced by travelers along the County's roadways. On-site elevations range from approximately 1,570 feet above mean sea level (MSL) in the property's northeast corner to approximately 2,270 feet above MSL within the Project site's western portion. Slopes within the Project area range from less than 15 percent to just over 25 percent gradient, with isolated areas exceeding 50 percent gradient. The Project site includes a number of topographical features that contribute to the City's aesthetic value: two valley features associated with drainage courses trending in a southwest to northeast alignment; six hilltop/ridgelines or groups of hilltop features, with associated slope exposures; and five minor hilltop features.[4]

SCENIC HIGHWAYS

No state scenic highways traverse the Project site or are in the vicinity. The nearest state-designated highway is State Route 74 (SR-74) east of the City of Hemet, approximately 23 miles northeast of the Project site.[5] There are no Officially Designated County Scenic Highways in Riverside County.

Figure C-8: Scenic Highways of the Circulation Element of the County of Riverside GP depicts I-15 through Murrieta as an Eligible State Scenic Highway and I-215 as an Eligible County Scenic Highway.[6]

According to the Aesthetics, Lights, and Glare section of the Final EIR for the City of Murrieta GP, the City Council recognized the historic value of Los Alamos Road in 1991 and in 1992 the Riverside County Historical Commission recommended a segment of Los Alamos Road be designated as a County Historic Route. In 2006, Los Alamos Road was removed from the City of Murrieta Circulation Plan and there is no record that the designation was made by the Historical Commission.

LIGHT AND GLARE

Light and glare in the Project area are typical of that found in urban and rural environments. Sources of light and glare include adjacent commercial and residential land uses. Stationary source lighting in the Project area is generated from building interiors and exterior sources (i.e., building illumination, security lighting, parking lot lighting, and landscape lighting) associated with uses adjacent to the Project site. The Project area is also influenced by light and glare from vehicle headlights, streetlights, and other sources that are present throughout the City. In addition, the Project will comply with the Mount Palomar Lighting Standards described in Section 16.18.110 of the Murrieta MC. The purpose of this Section is to restrict the

[3] Riverside County Planning Department. (2015). *County of Riverside General Plan, Chapter 5: Multipurpose Open Space Element.* Page OS-52. Riverside, CA: Riverside County Planning Department. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch05_MOSE_120815.pdf?ver=2017-10-11-102103-833. Accessed July 8, 2019.

[4] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

[5] Caltrans. (2017). *List of eligible and officially designated State Scenic Highways*. Retrieved from https://dot.ca.gov/-/media/dot-media/programs/design/documents/2017-03desigandeligible-a11y.xlsx. Accessed August 29, 2019.

[6] Riverside County Planning Department. (2017). *County of Riverside General Plan, Chapter 4: Circulation Element*. Page C-53. Figure C-8. Riverside, CA: Riverside County Planning Department. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch04_Circulation_121217.pdf. Accessed July 9, 2019.

use of certain light fixtures emitting into the night sky undesirable light rays that have a detrimental effect on astronomical observation and research. This section is not intended to restrict the use of low-pressure sodium lighting of single-family dwellings for security purposes.[7]

4.1.3 REGULATORY FRAMEWORK

STATE

California Department of Transportation (Caltrans)

The Project site is located adjacent to I-215 and will require off-site improvements including utility extensions and the construction of the McElwain Road extension. In addition, Caltrans has a future interchange planned for I-215 at Keller Road. Note that the construction of the interchange improvements and MHSPA Project will occur independent of one another. Caltrans manages the California Scenic Highway Program (CSHP), which is intended to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. State laws governing State Scenic Highways are found in Streets and Highways Code (SHC) Sections 260 to 263. A highway may be designated as scenic based on certain criteria, including how much of the natural landscape can be seen by travelers, the landscape's scenic quality and the extent to which development intrudes on the traveler's enjoyment of the view. The CSHP's *Scenic Highway System List* identifies scenic highways that are either eligible for designation or have already been designated as such. The list can be found here:

- https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx

REGIONAL

County of Riverside Ordinance No. 655

The Project site is currently located in unincorporated Riverside County and is currently subject to regulations set forth in Ordinance No. 655. County of Riverside Ordinance No. 655 "Regulating Light Pollution" is intended to restrict the permitted use of certain light fixtures emitting into the night sky undesirable light rays which have a detrimental effect on astronomical observation and research. Ordinance No. 655 defines the zones where light pollution could impact Palomar Observatory: Zone A is within 15 miles; Zone B is between 15 and 45 miles of the observatory.[8] The Specific Plan area is approximately 25 miles from the Palomar Observatory in Zone B.

County of Riverside Ordinance No. 915

As stated previously, the Project site is currently in unincorporated Riverside County and is therefore subject to County ordinances and regulations. The purpose of Ordinance No. 915 is to provide minimum

[7] American Legal Publishing Corporation. (2004). *Murrieta Municipal Code. Section 16.18.110 Mount Palomar Lighting Standards*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/259/Development-Code. Accessed July 9, 2019.

[8] Riverside County Planning Department. (2015). *Draft Environmental Impact Report No. 521, Section 4.4 Aesthetics and Visual Resources.* Page 4.4-6. Figure 4.4.1: Mt. Palomar Night Time Lighting Policy Area. Riverside, CA: Riverside County Planning Department. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/04-04_AestheticsAndVisualResources.pdf. Accessed July 9, 2019.

requirements for outdoor lighting in order to reduce light trespass and to protect the health, property, and well-being of residents in the unincorporated areas of Riverside County.[9]

County of Riverside Zoning Ordinance No. 348

The Project site is currently located in unincorporated Riverside County and is currently subject to regulations set forth in this ordinance. Ordinance No. 348 is intended to be the primary ordinance that governs land use review and approval and zoning applications in Riverside County. Originally adopted in 1949, Ordinance No. 348 has been amended over 4,000 times in the last 69 years. The current Ordinance No. 348 has 64 articles and 484 sections.

LOCAL

Murrieta General Plan 2035

As part of the Project approval process, the Project site would be annexed into the City of Murrieta and would be required to comply with the regulations set forth in the Murrieta GP.

CONSERVATION ELEMENT

This Element provides direction regarding the conservation, development, and utilization of natural and cultural resources.[10] It serves as a guide for the City of Murrieta, its residents, and its businesses to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve or conserve these resources. The Conservation Element considers the following resources in the natural environment: water; hills and ridges; and mineral, paleontological, and biological resources. It also considers resources within the built environment: urban ecology, farmland, cultural resources, energy, and solid waste.

Goal CSV-4: ***Restoration of the natural function and aesthetic value of creeks, while providing flood control measures and opportunities for recreation.***

Policy CSV-4.1: Prioritize creek preservation, restoration and/or mitigation banking along creeks as mitigation for environmental impacts.

Policy CSV-4.4: Retain and restore natural drainage courses and their function where health and safety are not jeopardized.

Goal CSV-5: ***Hills and ridges are protected for their environmental and aesthetic values.***

Policy CSV-5.1: Promote compliance with hillside development standards and guidelines to maintain the natural character and the environmental and aesthetic values of sloped areas.

Policy CSV-5.2: Incorporate significant landform features into City parks and open spaces, where appropriate.

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[9] Riverside County Board of Supervisors. (2011). *Ordinance No. 915 An Ordinance of the County of Riverside Regulating Outdoor Lighting*. Riverside, CA: Clerk of the Board. Retrieved from Clerk of the Board Website https://www.rivcocob.org/ords/900/915.pdf Accessed July 9, 2019.

[10] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 8: Conservation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed September 10, 2019.

Policy CSV-5.3: Maintain a register of cultural resources that includes landforms with cultural significance.

RECREATION AND OPEN SPACE ELEMENT

Surrounded by natural beauty, with hills and creeks within its borders, Murrieta is well-positioned to provide opportunities for recreation, outdoor activities, and enjoyment of nature. Parks, recreation facilities, and trails promote health, and community members value them highly. Recreation programs such as classes and events offer a variety of benefits including health, education, and social interaction. Besides promoting aesthetic values, open space management and conservation can provide habitat, contribute positively to air and water quality, and protect residents from hazards such as fires and floods.

The following Community Priorities relate most directly to this Element:

- Protect the natural beauty of the mountains, hills, and waterways.
- Provide abundant parks and facilities for recreational activities, and cultural amenities.
- Provide ample activities for all ages of youth, and jobs for teens.[11]

Goal ROS-7: ***Open space areas are planned to protect, conserve, and utilize resources of unique character and value for the community.***

Policy ROS-7.2: Designate open space to preserve habitat and scenic views of natural areas.

City of Murrieta Municipal Code

As part of the Project approval process, the Project site would be annexed into the City of Murrieta and would be required to comply with the regulations set forth in the Murrieta MC.

MURRIETA MUNICIPAL CODE TITLE 16

Murrieta MC Title 16 is intended to implement the policies of the Murrieta GP by classifying and regulating the uses of land and structures within the City. This Title was adopted to protect and to promote the public health, safety, comfort, convenience, prosperity and general welfare of residents and businesses in the City. Additional purposes of this development code are to:

A. Implement the goals, objectives, policies and programs of the Murrieta GP, and to manage future growth and development in compliance with that plan;

B. Provide standards for the orderly growth and development of the City that will maintain the community's housing, service, retail and employment needs in appropriate locations;

C. Require high-quality planning and design for development, that enhances the visual character of the City, avoids conflicts between land uses, and preserves the scenic qualities of the City;

D. Conserve and protect the natural resources of the City, its natural beauty and significant environmental amenities;

[11] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 9: Recreation and Open Space*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/735/09---Recreation-and-Open-Space-Element-PDF. Accessed September 10, 2019.

E. Create a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewerage and other public facilities and utilities; and

F. Provide regulations for the subdivision of land in compliance with the Subdivision Map Act, Title 7, Section 4, Division 2 of the California Government Code.

Section 16.18.110 of Murrieta MC Title 16 addresses the Mount Palomar Lighting Standards with the purpose of restricting the use of certain light fixtures emitting into the night sky undesirable light rays that have a detrimental effect on astronomical observation and research. Further information regarding general requirements, prohibitions, and exceptions can be viewed here:

- https://www.murrietaca.gov/259/Development-Code

4.1.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if one or more of the following occurs:

- Have a substantial adverse effect on a scenic vista (see Impact 4.1-1);
- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (see Impact 4.1-2);
- Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (see Impact 4.1-3); or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (see Impact 4.1-4).

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning aesthetics. This analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on aesthetic resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on significance criteria/threshold's application outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by Kimley-Horn personnel in early 2019; review of project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a project component would or would not result in "substantial" adverse effects on scenic resources or visual character considers the site's aesthetic resource value and the severity of the project component's visual impact (e.g., the nature and duration of the impact). For example, a project component resulting in a severe impact on a site with a low aesthetic resource value would result in a less than significant impact concerning scenic or visual character. In other words, new conspicuous structures or visual changes in areas with a low aesthetic resource value may not necessarily result in substantial adverse effects on visual resources.

Visual sensitivity can be described as viewer awareness of visual changes in the environment and is based on the viewers' perspective while engaging in activities from public areas near a project site. The project site is visible to various users. The sensitivity of those users to changes within a project site varies with the type of use, length of time that the viewer would be within a project site's zone of visual influence (ZVI)[12], and the viewer's distance from a project site. Viewers of a project site include nearby residents, and recreational users, travelers, and commuters within a project's ZVI.

PROJECT DESIGN FEATURES

- Location of higher-intensity commercial and higher-density multi-family residential dwellings along the eastern boundary near I-215 and more developed adjacent areas;
- Transition to medium-density single-family residential in the central portion, then to the larger-lot, lower-density estate residential homes at the development area's west end;
- Strategically located neighborhood and pocket parks to provide active and passive recreational facilities;
- Substantial reduction in density from the previously approved Specific Plan which allowed 1,585 dwelling units, to the MHSPA-proposed 750 dwelling units;
- Landscaping, including landscaped median swales and continuous tree placement, will contribute to the natural aesthetic of the Project area;
- Conserving over 600 acres of natural open space in the more visible higher elevations of the Project site; and
- Cohesive PDFs and building materials to match existing built out environments to the north and south.

[12] ZVI is defined as 'the area from which a development or other structure is theoretically visible.' ZVIs are used to identify the parts of a landscape that would be affected by a development. Retrieved from Wikipedia website: https://en.wikipedia.org/wiki/Viewshed#cite_note-Association2012-8. Accessed September 10, 2019.

4.1.5 IMPACTS AND MITIGATION MEASURES

Impact 4.1-1: Would the Project have a substantial adverse effect on a scenic vista?

Level of Significance: Less Than Significant Impact

The City of Murrieta, City of Menifee, City of Wildomar, and County of Riverside consider views of the San Jacinto Mountains as a scenic resource in their respective General Plans. The Menifee GP also notes views of the San Bernardino Mountains as a scenic vista. Views of the Hogbacks and Agua Tibia range to the southeast; San Jacinto Mountains to the east; Santa Margarita Mountains and Santa Rosa Plateau to the southwest; San Gabriel Mountains to the northwest; and the San Bernardino Mountains to the northeast are accessible from the Project site. If the Project substantially obstructs views of the scenic resources/vistas mentioned above, a significant impact may occur.

CONSTRUCTION

Construction of the Project will include mass grading of the site throughout three phases and subsequent rough grading of individual lots within the MHSPA area, followed by the associated construction of homes, commercial buildings, and other utilities. Trenching and installation of water and wastewater pipelines, and dry utilities, and the construction of the major drainage facilities will also occur. Project construction will also require the temporary use and storage of heavy equipment and vehicles on-site that may be visible off-site. Project construction may temporarily alter views on scenic vistas but would not substantially obstruct any views on scenic vistas, as the graded portion of the Project is generally on lower elevations, with the higher elevations preserved in permanent open space. The associated visual impacts from the construction phases are expected to occur throughout the duration of the three phases and shall cease upon completion of the Project, resulting in a less than significant impact.

Off-Site Construction Impacts

Similarly, the off-site circulation improvements for the McElwain Road extension will involve grading and roadway construction equipment. Although portions of McElwain Road will run along the site's eastern boundary and be visible from I-215, the grading and other construction-related activity will be temporary, and will not obstruct a scenic vista, as roadway construction will not obscure southeasterly views toward the Hogbacks. For an aerial rendering of the McElwain Road extension, see Exhibit 4.1-2, *Aerial Rendering of McElwain Road Extension.*

Construction of the sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not cause any aesthetic impacts to scenic vistas. The construction shall be temporary, gradually moving down the length of the roads as trenching occurs and then is backfilled and the road is resurfaced. Both locations are in a developed area, within Zeiders Road right-of-way, and within an existing detention basin.

OPERATIONS

The visual character of the Project site may be altered as a result of Project implementation. The Project includes development of approximately 320 acres of generally vacant land that would include a mix of housing, recreational amenities, landscaped parks, mixed-use, and community commercial uses to serve residents and surrounding communities. The residential component of the Project would include up to

750 new homes on approximately 261 acres for an overall gross density of 2.9 dwelling units per acre; 557 detached single-family residential lots ranging from approximately 4,800 to 10,000 square feet in size and up to a maximum of 193 attached multi-family units within a mixed-use setting (Planning Area [PA] 8). The commercial component (PA 9) consists of approximately 18 acres of community commercial use located near I-215. Each component of development that falls under the MHSPA shall be required to comply with the maximum building height limitations set forth in the MHSPA. Compliance with MHSPA Table 3-1, *Planning Area Land Use and Development Standards* and Chapter 7, *Design Guidelines*, will reduce impacts to scenic vistas. Further, the Project is designed to maintain and emphasize significant natural features to preserve the rural community characteristics of the surrounding area. Design elements include overlooks at strategic points in the development to capture and preserve scenic vistas, as well as preserving over 600 acres of natural open space pursuant to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and providing an approximately 37-acre linear natural park.[13] See Table 4.1-1 below for a detailed listing of Project land uses.

Table 4.1-1: Murrieta Hills Specific Plan Amendment Land Use Summary

Planning Area	Land Use	Gross Acres	Units	Density (DU/AC)
Residential				
PA 1	Single-Family Residential	13.59	47	3.5
PA 2	Single-Family Residential	34.18	116	3.4
PA 3	Single-Family Residential	52.49	101	1.9
PA 4	Single-Family Residential	32.51	74	2.3
PA 5	Single-Family Residential	33.26	79	2.4
PA 6	Single-Family Residential	32.09	80	2.5
PA 7	Executive Single-Family	50.32	60	1.2
PA 8	Mixed-Use	12.67	193[1]	15.2[1]
	Residential Subtotal	**261.11**	**750**	**-**
Commercial				
PA 9	Community Commercial	18.14	-	-
Open Space				
OS -1	MSHCP	612.94[2]	-	-
OS-2	Linear Nature Park	37.33	-	-
OS-3	Non-MSHCP Open Space	1.75	-	-
	Open Space Subtotal	**652.02**	**-**	**-**
Circulation				
Backbone Streets (Loop Road and McElwain Road)		19.53	-	-
Future Caltrans I-215 Interchange ROW		4.61	-	-
Street ROW designation and slopes outside ROW		16.39	-	-
	Circulation Subtotal	**40.53**	**-**	**-**
	Total	**971.8**	**750**	-

Source: City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Figure ES-1. Page ES-5. Murrieta, CA: City of Murrieta.

1. The Mixed-Use zone applies specifically to PA 8. The purpose of the MU zone is to allow for a mixture of multi-family residential uses in combination with a variety of commercial retail, professional office, and service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 would allow for maximum future development of up to 193 attached multi-family residential dwelling units (DUs).
2. Includes portion of McElwain Road and proposed water tank/access road. OS 1 (612.94 acres) includes 4.4-acre FMZ easement (Greer Ranch). 608.54 acres will be dedicated to RCA for MSHCP.

[13] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page ES-1 and ES-2. Murrieta, CA: City of Murrieta.

For some scattered, rural single-family residential homes to the north of the Project site, intermediate views of the Hogbacks and Agua Tibia range to the southeast would be obstructed following Project buildout. The obstruction will be due to the new residential, commercial, and mixed-use development being built between the homes to the north of the Project and mountain ranges to the southeast of the Project site. Although full Project buildout may alter the existing conditions at the Project site, views of the Santa Rosa Plateau, San Jacinto Mountains, Santa Margarita Mountains, San Bernardino Mountains, and San Gabriel Mountains from the surrounding areas will not be obstructed. Project construction is focused on areas of prior disturbance and the lower elevations of the Project site, preserving higher elevations in natural open space. The Project also represents a substantial reduction in density in comparison with the currently approved Specific Plan for the site. PDFs, adherence to the Design Guidelines outlined in the MHSPA, compliance with relevant Murrieta GP goals and policies, and compliance with the Murrieta MC Title 16, Sections 16.18: General Property Development and 16.24: Hillside Development shall further reduce impacts on scenic vistas to a less than significant level.

Off-Site Operations Impacts

The off-site circulation improvements for the McElwain Road extension shall not cause significant impacts to scenic vistas, for reasons noted above related to construction impacts. The McElwain Road extension will be in the eastern lower elevations of the site, with the off-site portion generally running parallel to I-215, where steep slopes block distant views to the west. The MHSPA requires appropriate grading treatments and landscaping along the McElwain Road extension, to further minimize adverse effects to views. Any grading required for the construction of McElwain Road within the MSHCP area would be landscaped with a stabilized, native, non-irrigated hydroseed mix. See Exhibit 4.1-2, *Aerial Rendering of McElwain Road Extension* for a view looking northwest towards McElwain Road from south of the Project. In addition, both the on- and off-site portion of McElwain Road, south of the MHSPA area, would be bordered by a 20-foot wide (minimum) Roadside Fuel Modification Zone (FMZ) on each side of the roadway. The 20-foot FMZ will be cleared of flammable vegetation; however, single tree specimens, fire-resistive shrubs, or cultivated ground cover such as green grass, succulents or similar plants used as ground covers may be used, provided they do not form a means of readily transmitting fire.

Operation of the sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not cause any aesthetic impacts to scenic vistas. After construction, these improvements will be subsurface and not be seen.

MITIGATION MEASURES

No mitigation is required.

Impact 4.1-2: Would the Project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

There is a former residence on the Project site; however, it does not have a formal historic designation. See Section 4.4, *Cultural Resources* for additional information. Impacts to trees are addressed in Section 4.3, *Biological Resources*, and are mitigated to less than significant levels. The Project does include

rock outcroppings, although many of these are retained in higher elevations or proposed open space areas within the development. However, no state scenic highway traverses the Project site or are in the vicinity. The nearest State Designated Scenic Highway is the eastern segment of SR-74, east of the City of Hemet, approximately 23 miles northeast of the Project site. Due to distance and topography, the Project is not visible from the State Designated Scenic Highway portion of SR-74. Therefore, the Project would not damage scenic resources (i.e., trees, rock outcroppings, or historic buildings) within a state scenic highway. In addition, future development must comply with the zoning development standards and guidelines, which would ensure future development to be appropriately scaled and designed to complement the surrounding environment by ensuring development would not incorporate excessive height, bulk, signage, or architectural projections. Impacts on scenic resources within a state scenic highway would not occur.

Off-Site Construction and Operations Impacts

No state scenic highway traverses the off-site improvement areas or is in their vicinity. Please refer to the discussion above for details on the nearest state scenic highway. No impact would occur.

MITIGATION MEASURES

No mitigation is required.

Impact 4.1-3: Would the Project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Level of Significance: Significant and Unavoidable Impact

Note that the Project includes annexation into the City of Murrieta and adoption of an amendment to an existing specific plan. Once annexed into the City of Murrieta, the Project will be in an "urbanized area" pursuant to the definition in CEQA Statutes §21071. Given that the Project represents a substantial reduction in density compared to the currently approved specific plan, annexation and approval of the Project shall not conflict with zoning or other regulations governing scenic quality, and no impact will occur.

The analysis in this section is based upon the site's current location in unincorporated Riverside County, with current County zoning of Rural Residential. In that context, even considering the substantial reduction in density from the current specific plan, preservation of over 600 acres in natural open space, and compliance with extensive design guidelines in the MHSPA and existing City requirements, the Project nonetheless would represent a substantial change in character from the existing undeveloped site. With the Project site's proximity to I-215 and bordering Keller Road, the Project site is visible from a broad area to the north, within the City of Menifee, and east within the City of Murrieta. This includes visibility from various public spaces, including I-215, Keller Road, and surrounding areas in Menifee and Murrieta. Views of the site from the west and south are obscured due to the site's steep topography. The Greer Ranch community's northeastern edge would have views across the eastern lower elevations of the site, although these would be from private residential units and not public views. See Exhibit 4.1-3, *Greer Ranch Murrieta Hills Visual* for a rendering of the view north from Greer Ranch towards the MHSPA area.

City of Menifee zoning adjacent north of the Project is Industrial Park (I-P) between I-215 (also the eastern city limit) and Zeiders Road; Light Agriculture (A-1) between Zeiders Road and Howard Way; and Residential Agricultural (R-A) between Howard Way and Sunset Avenue (also the western city limit).[14] Land use designations, according to the updated Menifee GP Land Use Map are Economic Development Corridor (EDC) between I-215 and Howard Way; Rural Residential 2-acre minimum (RR2) between Howard Way and west of Wild Lilac Road; and a mixture of Rural Mountainous 10-acre minimum (RM) and Rural Residential ½-acre minimum (RR1/2) between west of Wild Lilac Road and Sunset Avenue.[15] The land north of the project, designated as EDC, is located within the Southern Gateway EDC.[16] This EDC area provides for an opportunity to develop commercial, residential and office uses with a high level of freeway accessibility. Avoidance of placing residential units directly adjacent to the freeway is emphasized. The land uses envisioned for the Southern Gateway EDC and Project PA's 8 and 9 are similar; therefore, avoiding zoning and planned land use conflicts in this area. Likewise, a cohesiveness would also exist between the large-lot residential zoning and land use designations in Menifee, north of Keller Road, and the open space and single-family residential PAs planned for the Project. While the lot sizes in the Project are not as large as those presently designated in Menifee north of the Project, the Project's mixture of open space and single-family residential PAs will meld with the 'rural' characteristics desired of Rural Residential and Rural Mountainous communities. Theoretical buildout of the Menifee GP Land Use Plan Map is projected on Exhibit LU-4: Land Use Buildout Summary, found here:

- http://www.cityofmenifee.us/DocumentCenter/View/1015/Exhibit_LU-4_BuildoutSummary_HD0913?bidId=

However, note that the buildout of the Menifee GP is not linked to a timeframe and that based on historical rate of growth in the City of Menifee, the amount of development that can be accommodated by the Land Use Plan is not likely to occur within the next 50 years.[17]

Exhibit 4.1-4, *Visual Rendering Viewpoint* shows an overview map of the following public viewpoint on the Project site.

View 1: Southern View from Keller Road/McElwain Road (see Exhibit 4.1-5, *View South at Intersection of Keller Road and McElwain Road*)

This view is looking south from the future intersection of Keller Road and McElwain Road/Zeiders Road toward the Project site. The foreground view includes the entrance to the Project site and secondary monumentation which will utilize earth-toned stone and masonry with wrought iron accents. Landscape planting is abundant, with oak trees and other tree species of compatible form and character massed as a backdrop to the monument. A combination of evergreen and deciduous trees is proposed, and accent plantings will provide year-round color, highlighting the monument area. Beyond the entrance is PA 9 to the southeast with community commercial elements (left side of image) and PA 1 to the southwest with

[14] Bucknam Infrastructure Group, Inc. (2018). *City of Menifee Zoning*. Retrieved from City of Menifee Website: http://www.cityofmenifee.us/DocumentCenter/View/6411/Zoning-Map-as-of-May-2018?bidId=. Accessed July 9, 2019.
[15] Bucknam Infrastructure Group, Inc. (2018). *City of Menifee Land Use*. Retrieved from City of Menifee Website: https://www.cityofmenifee.us/DocumentCenter/View/7685/Updated-General-Plan-Land-Use-Map-May-2018. Accessed July 9, 2019.
[16] City of Menifee. (ND). *Exhibit LU-B2F EDC: Southern Gateway (832 Acres)*. Retrieved from City of Menifee Website: http://www.cityofmenifee.us/DocumentCenter/View/3648/Exhibit-LU-b2-Economic-Development-Corridors-Sub-Area?bidId=. Accessed July 9, 2019.
[17] Halligan, W. (2013). *Draft City of Menifee General Plan Environmental Impact Report*. Page 5.13-8. Santa Ana, CA: The Planning Center|DC&E. Retrieved from City of Menifee Website: http://www.cityofmenifee.us/DocumentCenter/View/1113/Ch-05-13-PH?bidId=. Accessed July 9, 2019.

associated drainage basin behind the landscape trees (right side of image). The background view includes steep hillside terrain and chaparral vegetation.

CONSTRUCTION

Future development projects may result in short-term visual impacts during construction activities. During construction, public views of heavy equipment and machinery preparing the site (i.e., grading) and eventually the construction of new buildings would dominate the Project site. No public views occur where the Project site abuts the City of Wildomar. Additionally, that section of the Project would be zoned as Open Space. Views 1, 2, and 3 could be adversely impacted by construction activities. During grading and other construction activities, visual impacts due to dust are not anticipated because air quality mitigation measures will implement dust control techniques (i.e., daily watering and suspension of grading/excavation operations during periods of high winds). Any construction impacts associated with individual PA or tract development within the Project area would be temporary in nature. Construction activities will be required to comply with the MHSPA, the Murrieta GP and Murrieta MC Chapters 15.52, 16.18, and 16.24. Therefore, construction impacts to the existing visual character or quality of the site and its surroundings will be less than significant.

Off-Site Construction Impacts

Construction of the McElwain Road extension will involve grading and large heavy-duty equipment as well as dust. However, these impacts are temporary in nature and shall cease upon Project completion, resulting in a less than significant impact.

Construction of the utility improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not cause any long-term aesthetic impacts to the visual character of the site and its surroundings. Temporary impacts associated with subsurface utility improvements may occur, although these are in existing road right-of-way and disturbed areas, and construction impacts would be typical of municipal utility construction.

OPERATIONS

Project implementation and operation shall allow for new development within a currently undeveloped site, which will result in permanent alteration of the existing landforms and visual quality in the area. The Project will involve mass grading, landform alteration, and the development of up to 750 residential units, parks, commercial land uses, and access roads.

Single-family homes are limited to a maximum height of 35 feet while the commercial and multi-family residential components are limited to 50 feet.[18] For a visual comparison, Pacific Landing apartment homes (located at 36125 Creighton Ave, Murrieta, CA 92563) were built in compliance with the Murrieta MC Section 16.08.040, Multi-family Residential Design Standards. This same standard, including the 50-foot maximum height limit, will be applied to the Project's multi-family residences. Homes within the MHSPA area would be designed for compatibility with the natural environment, using neutral earth-toned materials including stone, wood, concrete, and stucco and include a mix of tan and brown color palettes.[19]

[18] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164. Table 3-1: Planning Area Land Use and Development Standards*. Page 3-7. Murrieta, CA: City of Murrieta.

[19] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164, Section 7.1 Architectural Guidelines.* Pages 7-1 through 7-5. Murrieta, CA: City of Murrieta.

The Project shall be consistent with the areas of surrounding residential characters of the Greer Ranch community to the south and the Murrieta Highlands to the northeast.

PDFs including preservation of over 600 acres of natural open space and providing additional parks, recreational facilities and open spaces throughout the Project area will minimize impacts to the natural environment and the site's current visual character. Project design features have substantially reduced visual character impacts through strategically locating each use within the MHSPA area. Higher-intensity commercial and mixed-use development with a multi-family residential component will be located along the eastern boundary near I-215 and more developed adjacent areas, with a natural transition to medium-density single-family residential in the central portion, then to the larger-lot, lower-density executive homes at the MHSPA development area's west end. Each individual development within the MHSPA will also be required to comply with the MHSPA design guidelines and development standards, as well as the City of Murrieta GP Policies LU-26.1, CSV-5.1, and ROS-7.2 and Murrieta MC Chapters 16.08, 16.10, 16.16, 16.22, 16.24, and 16.28. The Specific Plan includes landscaping and lighting standards to further reduce visual impacts and enhance overall site appearance.

However, even with these PDFs and compliance with applicable City requirements, and substantial reduction in density compared to the previously approved Murrieta Hills Specific Plan No. SPM-4, the Project represents a substantial change in the overall site character, and therefore will result in a significant and unavoidable impact.

Off-Site Operations Impacts

The off-site circulation improvements for the McElwain Road extension may permanently impact the visual character of the site and its surroundings, as it will be constructed in a presently undeveloped area with portions of the road visible from I-215, Greer Ranch and residential areas south of the road extension. Because these Project off-site improvements represent a substantial change in the overall site character, they will result in significant and unavoidable impacts.

Construction of the utility improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not cause any long-term aesthetic impacts to the visual character or the site and its surroundings. Once construction is completed, the improvements will be subsurface and will not have any visual impacts.

MITIGATION MEASURES

Impact is significant, unavoidable, and unmitigable.

Impact 4.1-4: Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

As discussed in Section 4.1.2, the MHSPA area comprises several parcels, which are all currently vacant. Approximately 155 acres of the Project site are disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and an area in the southeast where grading operations occurred during the Greer Ranch Specific Plan development. The site is crossed by several dirt roads and is further disturbed in areas by off-highway vehicle activity, illegal dumping, and other unauthorized activities. Other portions of the Project site contain undisturbed

native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and meandering riparian vegetation.

Project implementation has the potential to create new sources of light and glare. Lighting effects are associated with the use of artificial light during the evening and nighttime hours. There are two primary sources of light: light emanating from building interiors passing through windows and light from exterior sources (i.e., street lighting, building illumination, security lighting, parking lot lighting, and landscape lighting). Light introduction can be a nuisance to adjacent residential areas, diminish the clear night sky's view and, if uncontrolled, can cause disturbances. Land uses such as residential uses are considered light-sensitive, because occupants have expectations of privacy during evening and nighttime hours and may be subject to disturbance by bright light sources. The Project is analyzed below for its potential to generate obtrusive light infusing spill light, glare and sky glow. With respect to obtrusive lighting, the degree of impact may vary widely depending on the amount of light generated, light sources heat, presence of barriers/obstructions, type/design of light source, and weather conditions.

CONSTRUCTION

Project construction will result in the temporary increase of spill light and glare from construction equipment, staging areas, lighting poles, and security lighting. In accordance with Murrieta MC Sections 15.52.190 and 16.30.130, construction activities are permitted Monday through Saturday between the hours of 7:00 a.m. and 8:00 p.m. Such activities are not permitted on Sundays or federal holidays. Therefore, impacts by construction lighting on nearby rural residences north of Keller Road would be minimal. Due to the topography and distance between the Project and Greer Ranch to the south and residences in Wildomar to the far west, impacts from construction lighting would not occur. I-215 forms a barrier between the Project and development to the east, including the Loma Linda University Medical Center – Murrieta and associated professional office building, Kaiser Permanente Murrieta Medical Campus, limited commercial services, and residential development. The interstate itself is a source of light/glare due to the automobiles, and associated headlights/taillights, that it accommodates. Light/glare from I-215 already impacts views to the west for those on the east side of I-215; therefore, Project construction impacts on nighttime views to the west from east of I-215 would be obscure.

MM AES-1 would be implemented, which will require contractors to develop a Construction Lighting and Screening Plan to further minimize light and glare impacts during construction. Construction shall adhere to Murrieta MC Section 16.30.130, which limits construction hours from 7:00 a.m. to 8:00 p.m. Security screening at night for the construction area will have directional lighting limited to that necessary for safety and security, as required in MM AES-1. In addition, construction lighting is temporary and shall cease upon Project completion. Therefore, in consideration of Project design features and MM AES-1, temporary construction impacts will be less than significant in this regard.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity of the Greer Ranch residential community. Similar to the on-site construction, the extension will involve large heavy-duty equipment and may result in an increase of spill light. To mitigate the potential for substantial light impacts to Greer Ranch and other residential communities near the proposed road extension, MM AES-1 shall be implemented.

The subsurface sewer service improvements proposed along Zeiders Road will connect into the Eastern Municipal Water District (EMWD) system approximately 2,600 feet north of Keller Road near the Zeiders Road and Ciccotti Street intersection. Similar to the on-site construction, the sewer service improvements will involve large heavy-duty equipment and may result in an increase of spill light. To mitigate the potential for substantial light impacts on the rural single-family residential communities, MM AES-1 shall be implemented.

The proposed subsurface storm drain along Keller Road will involve large heavy-duty equipment and may result in an increase of spill light. To mitigate the potential for substantial light impacts on the rural single-family residential communities, MM AES-1 shall be implemented to reduce impacts.

With implementation of MM AES-1 and the temporary nature of construction activities, off-site construction will not create a new source of substantial light or glare which may adversely affect nighttime views. Impacts will be less than significant with mitigation.

OPERATIONS

Section 6.1.4 of the Western Riverside County MSHCP[20] addresses guidelines pertaining to the urban/wildlands interface. The guidelines are intended to address indirect effects associated with locating development in proximity to the MSHCP conservation area. Edge effects that will adversely affect biological resources within the conservation area may result from the placement of planned development in proximity of the conservation area. To minimize edge effects associated with lighting, night lighting shall be directed away from the MSHCP conservation area to protect species within the MSHCP conservation area from direct night lighting. Shielding shall be incorporated in Project design to ensure ambient lighting in the MSHCP conservation area is not increased. Per MM BIO-11: All Project lighting (including that belonging to private property owners) will be required to be selectively placed, directed, and shielded away from conserved habitats along the open space borders of the development, as required by the City of Murrieta MC. In addition, large spotlight-type backyard lighting directed into conserved habitat will be prohibited, to be enforced through provisions contained in the MHSPA Homeowners Association's (HOA) Declaration of Covenants, Conditions, and Restrictions (CC&Rs).

Project buildout would increase nighttime lighting in this portion of the City. Sources of lighting include interior and exterior lighting, streetlights, signage, and on-building and freestanding security lighting. According to MHSPA Chapter 7, *Design Guidelines*, the Project shall incorporate design elements to reduce sources of lighting:

- Exterior lighting shall be directed away from adjoining properties and shielded to eliminate light spill and glare.
- Outdoor lighting, other than street lighting, shall be low to the ground or shielded and hooded to avoid shining onto adjacent properties and streets; examples of this include lighted bollards.
- Lighting fixtures shall be well integrated into the visual environment and the theme.
- Low-intensity, energy-conserving night light is preferred.

[20] Western Riverside County Regional Conservation Authority. (2003). *Western Riverside County MSHCP, Volume I, Section 6.0*. Riverside, CA: Environmental Programs Division. Retrieved from Riverside County Environmental Programs Website: http://rctlma.org/Portals/0/mshcp/volume1/sec6.html. Accessed July 9, 2019.

- Neon and similar types of lighting are prohibited in the Murrieta Hills project.
- Community entry areas (both pedestrian and vehicular), community facilities, and highly used recreation areas shall be creatively lit to develop a sense of place and arrival.
- The lighting concept of the entry monument features is to illuminate the sign graphics and to gently wash the walls and pilasters with light. Trees and other landscape features should be illuminated by concealed up-light fixtures.
- The level of on-site lighting as well as lighting fixtures shall comply with applicable requirements and municipal policies. Energy conservation, safety, and security should be emphasized when designing any light system.
- Community landscape common areas, streetscapes, and other areas, at the discretion of the Project developer or builders, may contain area, accent, or other night lighting features.
- Low-voltage light-emitting diode (LED) lighting is encouraged.[21]

Light pollution, also known as "skyglow," is an adverse effect of man-made light. The term is often used to denote urban sky glow (brightening of the night sky due to man-made lighting) but also includes glare (intense and blinding light) and light trespass (light falling where it is not wanted or needed; spill light). In many cases, sky glow is visible from great distances, particularly in evenings when there is moisture in the air. Minute water droplets in the evening air reflect and scatter light into the atmosphere. The MHSPA area is approximately 25 miles from Palomar Observatory, and is subject to the "Dark Sky Zone" lighting restrictions outlined in the City of Murrieta's Mount Palomar Lighting Standards (Murrieta MC Chapter 16.18.110,) which outlines lighting standards for the Mount Palomar Observatory. The Project will comply with Murrieta MC Chapter 16.18.110, further limit lighting impacts and unnecessary exterior illumination during nighttime hours.

Glare is typically related to the use of highly reflective surfaces including mirrored and tinted glass materials, and broad, flat surfaces that are painted with highly reflective colors. Building and site plans for future development projects within the MHSPA area would be subject to City review to determine the potential for light and glare. All new development projects will be required to meet the standards contained in the City's Lighting Regulations. With adherence to the provisions of the Murrieta GP, Murrieta MC, the City's outdoor lighting regulations, and the Specific Plan Design Guidelines, lighting and glare impacts and potential spillover of the Project will not occur on surrounding land uses or roadways. Operational impacts resulting from new sources of light or glare will be less than significant.

Off-Site Operations Impacts

Construction of the McElwain Road extension will include street lights typical of residential streets. These improvements shall be required to follow the same provisions of the Murrieta GP, Murrieta MC, and the City's outdoor lighting regulations, and the MHSPA Design Guidelines described in detail above; resulting in a less than significant impact. The McElwain Road off-site improvements will also be required to comply with Section 6.1.4 of the MSHCP regarding lighting at the urban/wildlands interface. Night lighting shall be directed away from the MSHCP open space and shielding will be incorporated to ensure ambient lighting is not increased in the MSHCP conservation area.

[21] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Page 7-23. Murrieta, CA: City of Murrieta.

Operations of the sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not cause any long-term aesthetic impacts to the nighttime views of the area. No impacts will occur.

MITIGATION MEASURES

MM AES-1 Prior to the start of construction, the Project Applicant shall prepare a Construction Lighting and Screening Plan. The Construction Lighting and Screening Plan should indicate aesthetic and lighting treatments for all construction work areas (i.e., maximum brightness values not to be exceeded by artificial bulbs, screening around Project site to limit light and glare, use of non-reflective glass, etc.). The Plan shall identify methods used to ensure construction lighting is directional (aimed toward work areas, and not toward nearby sensitive receptors), and limited to sufficient wattage for safety and security. Construction areas visible to sensitive receptors shall be screened via curtains from public view. Construction screening materials shall be of sufficient height and appropriate color to minimize viewshed impacts, as determined appropriate by the applicable jurisdiction(s).

4.1.6 CUMULATIVE IMPACTS

For purposes of aesthetic resource impact analysis, cumulative impacts are considered for cumulative development according to the related projects; see Table 4-1, *Cumulative Projects List*.

When evaluating cumulative aesthetic impacts, several factors must be considered. The cumulative study area for aesthetic impacts is the viewshed that includes the MHSPA area and surrounding areas. The context in which a project is being viewed will also influence the aesthetic impact's significance. The contrast a project has with its surrounding environment may be reduced by the presence of other cumulative projects. If most of an area is or is becoming more urbanized, the contrast of a project with the natural surrounding may be less since it would not stand out in contrast as much. In order for a cumulative aesthetic impact to occur, the proposed cumulative project's elements need to be seen together or in proximity to each other. If the projects were not near each other, the viewer would not perceive them in the same scene.

The geographical area for aesthetics cumulative analysis would be the County of Riverside, City of Murrieta, City of Menifee, and City of Wildomar. The Project site is currently vacant and located within unincorporated Riverside County. Approximately 155 acres within the Project site are disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and an area in the southeast where grading operations occurred during the Greer Ranch Specific Plan project development. The site is crossed by several dirt roads and is further disturbed in areas by off-highway vehicle activity, illegal dumping, and other unauthorized activities. Other Project site areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and meandering riparian vegetation.

CUMULATIVE CONSTRUCTION IMPACTS

The Project's construction activities will result in a temporary impact to aesthetic resources. MHSPA buildout will happen in phases. Each development project within the MHSPA area will cause a temporary impact to aesthetic resources, specifically in relationship to Impact 4.1-1, 4.1-3, and 4.1-4.

CUMULATIVE OPERATIONAL IMPACTS

A less than significant impact would occur as a result of the Project in regard to scenic vistas. According to the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in a less than significant impact with mitigation incorporated for visual impact on scenic vistas. According to the City of Murrieta GP 2035 EIR, buildout of the Murrieta GP would result in a less than significant visual impact on scenic vistas. A significant cumulative impact would occur if cumulative projects would adversely impact views of a scenic vista or scenic resources. Although the Project would change the current visual quality of the Project site, changes do not necessarily result in degradation to scenic vistas. The Project would be of high-quality design and would not adversely affect any protected public viewsheds or destroy any scenic vistas. The Project would preserve over 600 acres of MSHCP natural open space as well as offer other recreational facilities on-site that would maintain scenic viewsheds, including but not limited to the San Jacinto Mountains, San Bernardino Mountains, and the Hogbacks. Therefore, the Project, in conjunction with other cumulative projects, will not result in a cumulatively considerable contribution. The cumulative impact related to scenic vistas and resources will be less than significant.

No impact will occur as a result of the Project in regard to state scenic highways. No state scenic highway traverses the Project site or is in its vicinity. The nearest State Designated Scenic Highway is the eastern segment of SR-74, east of the City of Hemet, approximately 23 miles northeast of the Project site. Therefore, the Project in conjunction with other cumulative projects will not result in a cumulatively considerable contribution in regard to state scenic highways.

A significant and unavoidable impact will occur as a result of the Project in regard to visual character. According to the County of Riverside EIR No. 521, buildout of the Riverside County GP would result in a less than significant impact with mitigation incorporated on visual character or aesthetic quality of the site and its surroundings. According to the City of Murrieta GP 2035 EIR, buildout of the Murrieta GP would result in a less than significant impact on visual character or aesthetic quality of the site and its surroundings with mitigation incorporated impact. The conversion of vacant open space to residential and commercial development is significant, the setting and character of the Project site and surrounding areas may be substantially degraded. Although the Project would showcase high-quality design involving neutral earth-toned materials including stone, wood, concrete, and stucco and include a mix of tan and brown colors, similar to the Greer Ranch residential community to the south and the Murrieta Highlands to the northeast, it would still convert vacant open space to residential and commercial development. This will significantly impact public views of the Project site. Therefore, the Project in conjunction with other cumulative projects will result in a cumulatively considerable contribution and impacts will be significant and unavoidable.

A less than significant impact with mitigation incorporated will occur as a result of the Project with regard to light and glare adversely affecting day and nighttime views. According to the County of Riverside EIR No. 521, buildout of the Riverside County GP would result in a less than significant impact in regard to light and glare. According to the City of Murrieta GP 2035 EIR, buildout of the Murrieta GP would result in less than significant impact with regard to light and glare. A significant cumulative impact related to aesthetics would occur if the cumulative projects would create new sources of substantial light and glare adversely affecting day or nighttime views. Future development projects would have the potential to increase the amount of light. Each development project in the MHSPA area will be required to comply

with policies and regulations set out by the MHSPA Design Guidelines and Development Standards, and the City's General Plan and applicable City ordinances. Compliance with these policies, plans, and regulations will ensure that proposed future development in the surrounding areas will be compatible with the City's urban development. All outdoor lighting shall be installed and operated in accordance with the applicable City and County ordinances and will not contribute substantially to spill light and glare impacts. The Project will not result in cumulatively significant visual quality and lighting/glare impacts.

With respect to nighttime illumination, nighttime lighting effects may be considered in a regional context because of the potential for night glow that would extend beyond the boundaries of a site. Therefore, with respect to night lighting, the Project is considered in context to the forecasted growth for the area and with cumulative projects in the area that may contribute to the increased nighttime lighting. Future development in the Project area and the surrounding areas shall be subject to lighting restrictions in the City of Murrieta's MC. Because the Specific Plan area is undeveloped and is largely bordered by areas that do not currently emit substantial amounts of nighttime light, a cumulatively considerable contribution to nighttime lighting may occur. In addition, much of the developed Project area will be surrounded by sensitive land use in the form of the MSHCP-designated open space. However, the Project would comply with MHSPA Design Guidelines, City ordinances and municipal codes, and MSHCP guidelines pertaining to nighttime lighting. Other cumulative projects would also adhere to the appropriate guidelines and codes pertaining to nighttime lighting. Therefore, the Project's contribution to nighttime lighting will be less than cumulatively considerable.

4.1.7 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the Project, significant unavoidable impacts will occur in the following areas:

- **Visual Character or Quality of Public Views.** Despite strategic Project design features, the Project site is located in a non-urbanized area and will substantially degrade the existing visual character or quality of public views of the site and its surroundings. No mitigation measures were identified to reduce these impacts to less than significant. Therefore, each development project within the MHSPA area will be required to comply with the development guidelines set forth within the MHSPA, the goals and policies within the Murrieta GP, and the sections within the Murrieta MC. Each development project shall be evaluated to showcase conformance with these regulatory standards to ensure minimal impacts will occur to the visual character or quality of the site and its surroundings.

4.1.8 REFERENCES

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Riverside County Planning Department. (2015). *Draft Environmental Impact Report No. 521.* Riverside, CA: Riverside County Planning Department. Retrieved from Riverside County Website: https://planning.rctlma.org/Zoning-Information/General-Plan/General-Plan-Amendment-No960-EIR-No521-CAP-February-2015/Draft-Environmental-Impact-Report-No-521. Accessed July 9, 2019.

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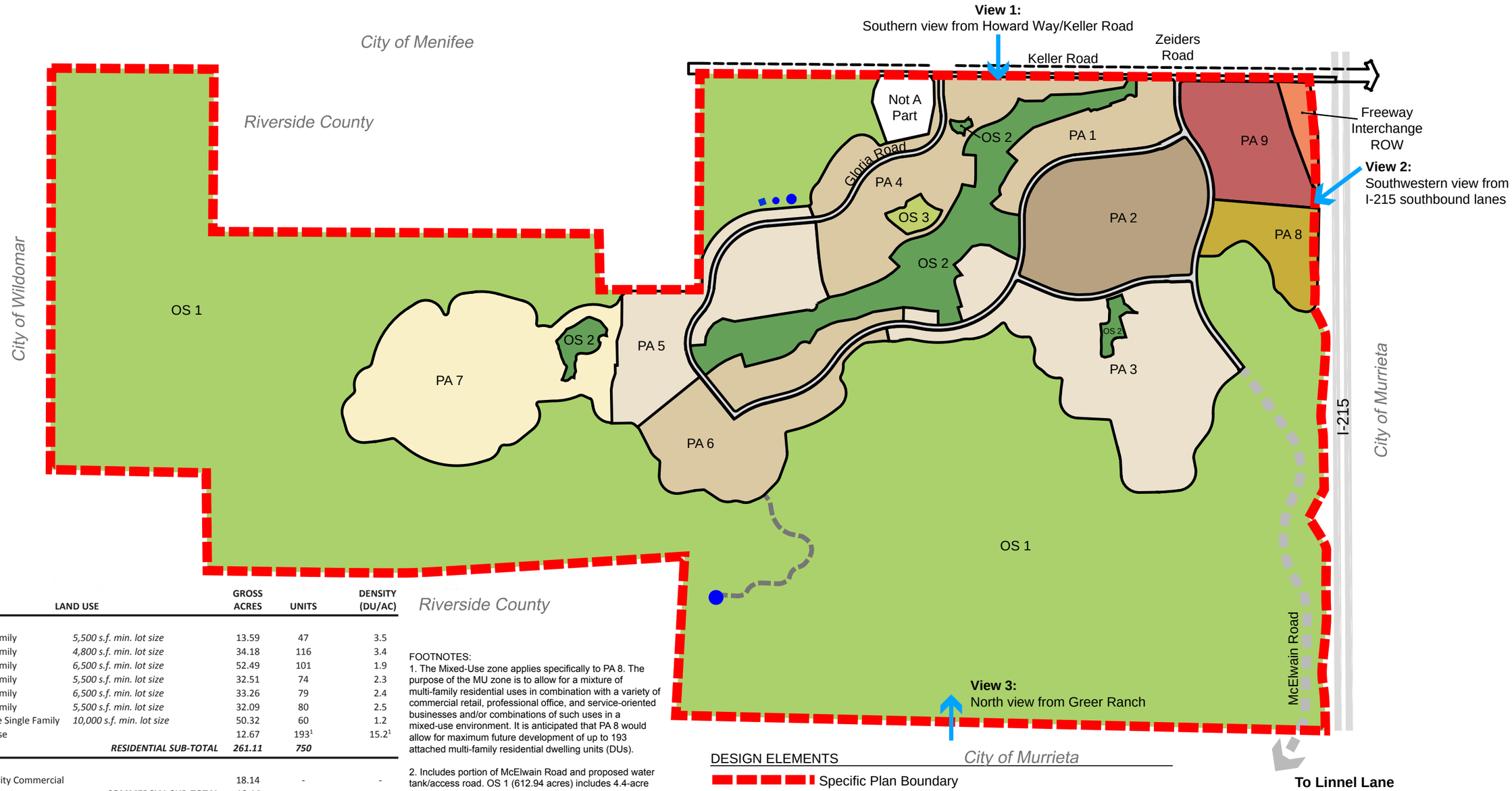


LAND USE SUMMARY

	LAND USE		GROSS ACRES	UNITS	DENSITY (DU/AC)
RESIDENTIAL					
PA 1	Single Family	*5,500 s.f. min. lot size*	13.59	47	3.5
PA 2	Single Family	*4,800 s.f. min. lot size*	34.18	116	3.4
PA 3	Single Family	*6,500 s.f. min. lot size*	52.49	101	1.9
PA 4	Single Family	*5,500 s.f. min. lot size*	32.51	74	2.3
PA 5	Single Family	*6,500 s.f. min. lot size*	33.26	79	2.4
PA 6	Single Family	*5,500 s.f. min. lot size*	32.09	80	2.5
PA 7	Executive Single Family	*10,000 s.f. min. lot size*	50.32	60	1.2
PA 8	Mixed-Use		12.67	193[1]	15.2[1]
		RESIDENTIAL SUB-TOTAL	***261.11***	***750***	
COMMERCIAL					
PA 9	Community Commercial		18.14	-	-
		COMMERCIAL SUB-TOTAL	***18.14***		
OPEN SPACE					
OS 1	MSHCP		612.94[2]	-	-
OS 2	Linear Nature Park		37.33	-	-
OS 3	Non-MSHCP Open Space		1.75	-	-
		OPEN SPACE SUB-TOTAL	***652.02***		
CIRCULATION					
	Backbone Streets (Loop Road and McElwain)		19.53	-	-
	Future Caltrans I-215 Interchange ROW		4.61	-	-
	Street ROW Dedication and Slopes outside ROW		16.39		
		CIRCULATION SUB-TOTAL	***40.53***		
TOTAL			**971.8**	**750**	**0.77**

FOOTNOTES:
1. The Mixed-Use zone applies specifically to PA 8. The purpose of the MU zone is to allow for a mixture of multi-family residential uses in combination with a variety of commercial retail, professional office, and service-oriented businesses and/or combinations of such uses in a mixed-use environment. It is anticipated that PA 8 would allow for maximum future development of up to 193 attached multi-family residential dwelling units (DUs).

2. Includes portion of McElwain Road and proposed water tank/access road. OS 1 (612.94 acres) includes 4.4-acre FMZ easement (Greer Ranch). 608.54 acres will be dedicated to RCA for MSHCP.

DESIGN ELEMENTS

- Specific Plan Boundary
- PA # — Planning Area
- OS # — Open Space
- Portion of Proposed McElwain Road within OS 1 MSHCP
- Proposed Water Tank and Access Road
- Existing EMWD Water Tank Not A Part of Specific Plan
- Proposed Water Tanks and Booster Station
- Access Point
- Fuel Modification Zone Easement (Greer Ranch to Maintain)

Source: MHSPA, Figure ES-1

Not to Scale

EXHIBIT 4.1-1a: Public Viewpoints
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Source: Site Visit Photographs (01/10/2019)

EXHIBIT 4.1-1b: Views from Howard Way/Keller Road
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Source: Site Visit Photographs (01/10/2019)

EXHIBIT 4.1-1c: Views from I-215 Southbound Lanes
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Source: Site Visit Photographs (01/10/2019)

EXHIBIT 4.1-1d: Views from Greer Ranch
Murrieta Hills Specific Plan Amendment

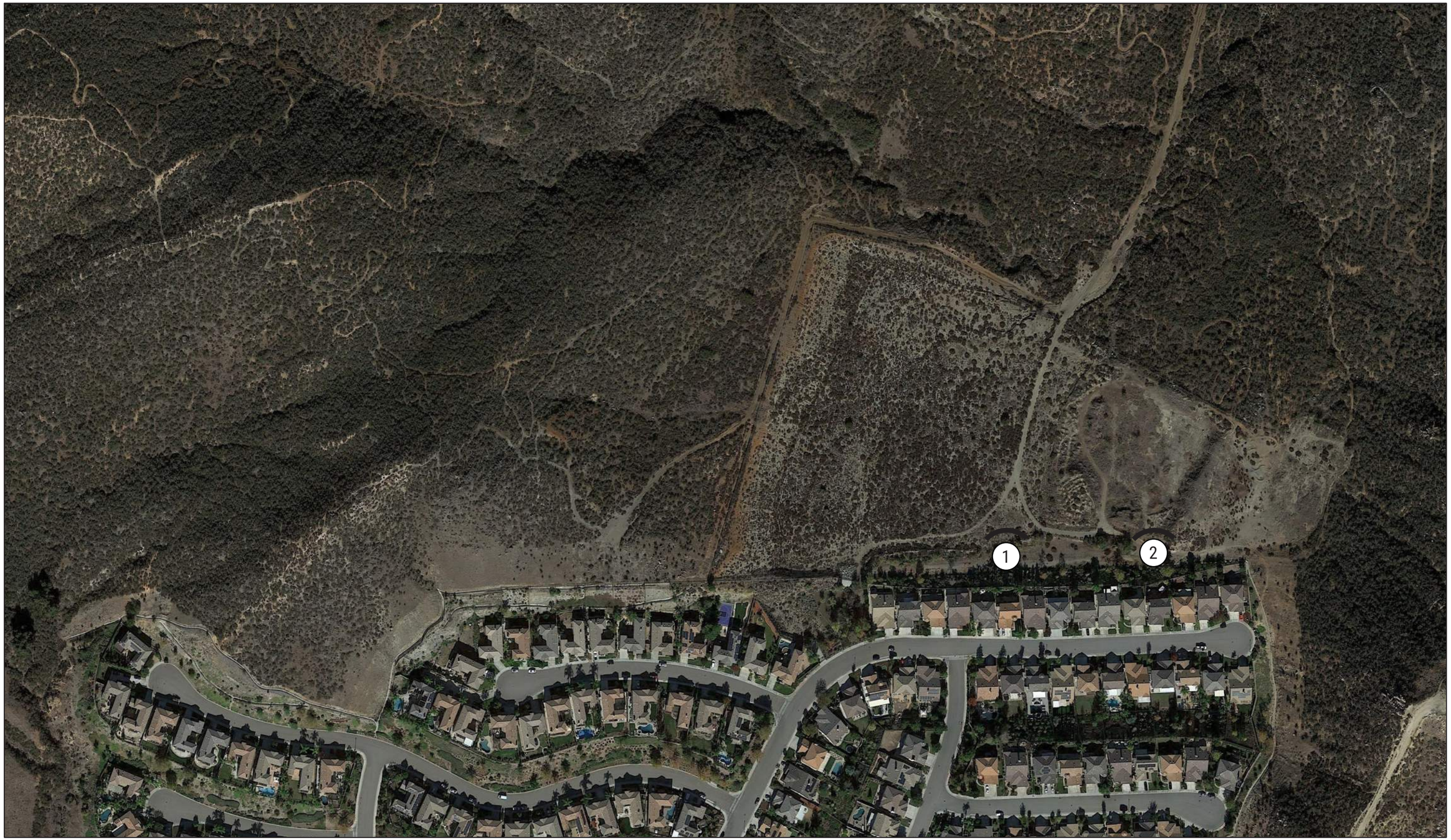
Kimley»Horn

Source: Murrieta Hills Video Rendering

Not to Scale

EXHIBIT 4.1-2: Aerial Rendering of McElwain Road Extension
Murrieta Hills Specific Plan Amendment

Kimley»Horn



1 Viewpoint Location

Field of View

Source: MBI (2019)

Not to Scale

EXHIBIT 4.1-3a: Greer Ranch Murrieta Hills Visual
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Viewpoint 1: Existing

Viewpoint 1: Proposed

Source: MBI (2019)

EXHIBIT 4.1-3b: Greer Ranch Murrieta Hills Visual
Murrieta Hills Specific Plan Amendment

Kimley»Horn

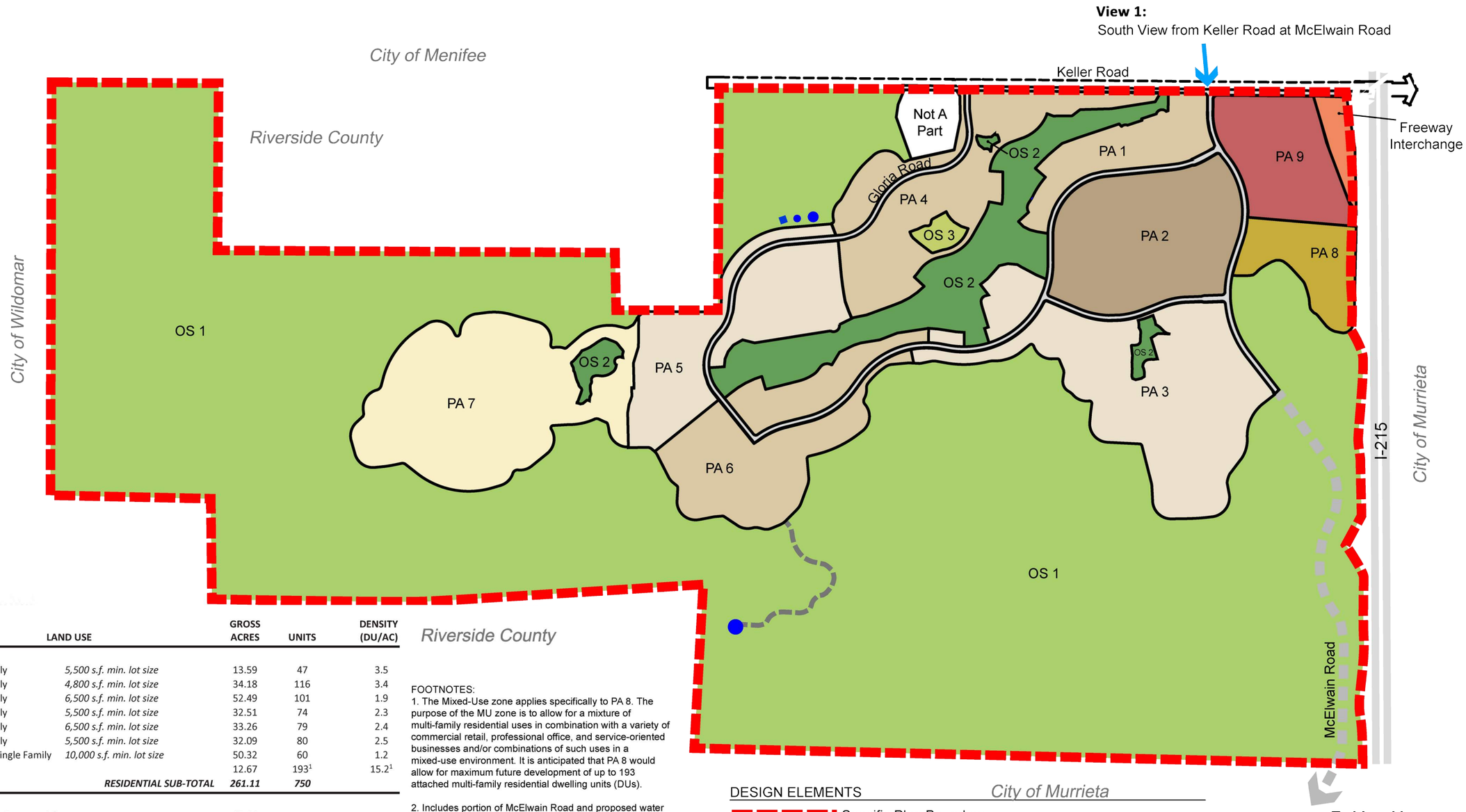
Viewpoint 2: Existing

Viewpoint 2: Proposed

Source: MBI (2019)

EXHIBIT 4.1-3c: Greer Ranch Murrieta Hills Visual
Murrieta Hills Specific Plan Amendment

Kimley»Horn



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Future Caltrans I-215 Interchange ROW			4.61	-	-
Street ROW Dedication and Slopes outside ROW			16.39		
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TOTAL			**971.8**	**750**	**0.77**

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Not to Scale

Source: MHSP, Figure 4.1-1 Public Views

EXHIBIT 4.1-4: Visual Rendering Viewpoint
Murrieta Hills Specific Plan Amendment

Kimley»Horn

Source: Murrieta Hills Video Rendering and Site Visit Photographs (01/10/2019)

EXHIBIT 4.1-5: View South at Intersection of Keller Road and McElwain Road
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.2 AIR QUALITY

4.2.1 INTRODUCTION

This section examines the existing air quality setting and evaluates potential impacts on air quality as they relate to the Murrieta Hills Specific Plan Amendment (MHSPA or Project). Information given in this section is based on resource information obtained from available public resources including, but not limited to, the *City of Murrieta General Plan 2035* (Murrieta GP), South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP), and the Southern California Association of Governments (SCAG) *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). Detailed air quality calculations are provided in Appendix 9.2.1, *Air Quality/Greenhouse Gas Assessment for the Murrieta Hills Specific Plan Amendment (Appendix A – Air Quality/Greenhouse Gas/HRA Data)*. Appendix 9.2.2 includes updated modeling data for revised grading construction quantities.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) 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?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.2.5, *Impacts and Mitigation Measures* below, impacts will be less than significant; significant and unavoidable; and less than significant with mitigation incorporated.

Note that the air quality/greenhouse gas assessment technical report for this Project (Appendix 9.2.1) analyzed two alternatives. Alternative 1 (Originally Proposed Project) would include 578 single-family units and 172 multi-family units, with 346,302 square feet of commercial retail. Alternative 2 (Environmentally Preferred Alternative) would have fewer single-family units (557 total), more multi-family units (193 total); and less commercial square footage (222,156 square feet) than Alternative 1. Analyses and data presented in this section are for Alternative 2.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of

Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.2.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1] Existing on-site and off-site visual conditions are reflected in Exhibit 4.1-1, *Public Viewpoints*.

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

South Coast Air Basin

The South Coast Air Basin (SCAB) is a 6,600-square mile area bounded by the San Gabriel, San Bernardino, and the San Jacinto Mountains to the north and east, and the Pacific Ocean to the west. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, along with the San Gorgonio Pass area of Riverside County. The distinctive climate of the SCAB is attributable to its terrain, which is a coastal plain with connecting broad valleys and low hills, and its geographical location, which is bounded by the Pacific Ocean to the west and high mountains to the north, east, and south.

The extent and severity of air pollution in the SCAB is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of air pollutants throughout the SCAB, making it an area of high pollution potential.

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

Climate & Meteorology

The Project site is currently in the unincorporated area of Riverside County but will be annexed to the City of Murrieta. Both Riverside County and the City of Murrieta are located within the SCAB. The climate of the SCAB has been classified as "Mediterranean," implying cool, dry summers and mild winters with moderate rainfall. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds. The average annual temperature varies little throughout the SCAB, averaging 75 degrees Fahrenheit (˚F). December and January are typically the coldest months at all locations while July through September are usually the hottest months of the year. Although the SCAB has a semi-arid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SCAB by off-shore winds, the ocean effect is dominant. Precipitation is typically nine to 14 inches annually in the SCAB and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the SCAB.

The City of Murrieta experiences average high temperatures of up to 91˚F during the month of August, and average low temperatures of 40˚F during the month of December. The City experiences approximately 13.32 inches of precipitation per year, with the most precipitation occurring in the month of December.

According to bestplaces.net[2], Riverside County gets an average of 12 inches of rain per year. The summer high (July) temperature is approximately 98˚F and the winter low (January) temperate is approximately 40˚F.

Local Air Quality

The SCAQMD has divided the SCAB into air monitoring areas and maintains a network of air quality monitoring stations located throughout the SCAB. The Project site is located within Source Receptor Area (SRA) 26, Temecula Valley. The closest air monitoring station to the Project site is the Lake Elsinore Monitoring Station. Local air quality data from 2015 to 2017 is provided in Table 4.2-1, *Summary of Air Quality Data*. This table lists the monitored maximum concentrations and number of exceedances of Federal/State air quality standards for each year.

[2] BestPlaces, https://www.bestplaces.net/climate/county/california/riverside, accessed March 27, 2019.

Table 4.2-1: Summary of Air Quality Data

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration[1]	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3)[2] (1-hour)	0.09 ppm for 1 hour	NA[3]	2015 2016 2017	0.100 ppm 0.092 0.104	1/0 0/0 4/0
Ozone (O_3)[2] (8-hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2015 2016 2017	0.087 ppm 0.081 0.088	20/23 19/20 47/49
Carbon Monoxide (CO)[4] (1-hour)	9 ppm for 8 hours	9 ppm for 8 hours	2015 2016 2017	0.83 ppm 1.22 1.15	0/0 0/0 0/0
Nitrogen Dioxide (NO_2)[4]	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2015 2016 2017	0.047 ppm 0.051 0.049	0/0 0/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[4,5]	No Separate Standard	35 µg/m^3 for 24 hours	2015 2016 2017	42.2 µg/m^3 31.5 27.2	NA/* NA/* NA/*
Particulate Matter (PM_{10})[4,5,6]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2015 2016 2017	90.7 µg/m^3 99.7 134.1	*/0 */0 */0

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable, * = insufficient data available to determine the value.

Notes:
1. Maximum concentration is measured over the same period as the California Standards.
2. Data collected from the Temecula Monitoring Station located at 33700 Borel Road, Winchester, California.
3. The Federal standard was revoked in June 2005.
4. Data collected from the Lake Elsinore Monitoring Station located at West Flint Street, Lake Elsinore, California.
5. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
6. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.

Source: Aerometric Data Analysis and Measurement System. (ND). Summaries from 2015 to 2017. Retrieved from CARB Website: http://www.arb.ca.gov/adam.

Air Pollutants of Concern

CRITERIA AIR POLLUTANTS

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the U.S. Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard (AAQS) is generally specified as a concentration averaged over a specific period of time, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more

health-protective standards. The following provides a summary discussion of the criteria air pollutants of primary concern.

Ozone (O_3) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_X and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas is a reactive gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that makeup ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROG and VOC are subsets of TOG.

Volatile Organic Compounds are hydrocarbon compounds that exist in the ambient air. VOC contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOC often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Oxides of Nitrogen (NO_X) are a family of gaseous nitrogen compounds and a precursor to the formation of ozone and particulate matter (PM). Nitrogen dioxide (NO_2), a major component of NO_X, is a reddish-brown gas that is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter, also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5}$- PM_{10} are deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can

form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.

- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood and other hydrocarbons. while UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, the California Air Resources Board (CARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended SO_2 particles contribute to poor visibility. These SO_2 particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). Occupational Safety and Health Administration (OSHA) regulates workplace exposure to hydrogen sulfide.

ODORS

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e., irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and, in fact, an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set AAQS. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA) and are thus not subject to National or State AAQS. TACs are not considered criteria pollutants in that the FCCA and CCAA do not address them specifically through the setting of National or State AAQS. Instead, the U.S. EPA and CARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent

amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the CARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, Diesel-exhaust particulate matter (DPM) was added to the CARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The CARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles.

At the local level, air districts have authority over stationary or industrial sources. All projects that require air quality permits from the SCAQMD are evaluated for TAC emissions. The SCAQMD limits emissions and public exposure to TACs through a number of programs. The SCAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SCAQMD requires a comprehensive health risk assessment (HRA) for facilities that are classified in the significant-risk category, pursuant to AB 2588.

SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term "sensitive receptors" refers to specific population groups, as well as the land uses where individuals reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses. The Project site is in a portion of unincorporated Riverside County, bordered by the City of Menifee to the north and City of Murrieta to the south. The Project site location is somewhat rural and largely undeveloped, but is surrounded by expanding urban and residential development. Surrounding land uses include the I-215 freeway to the east. East of the freeway is a mixture of open space, office research park, a medical center, and business park uses. A mixture of open space and office zones along with rural residential and single-family residential zones are adjacent to the south side of the Project area. A mobile home park/mobile home subdivision zone in the City of Wildomar borders the open space area on the west side of the Project site. Along the northern border of the Project site is rural residential development, open space and agricultural land. Table 4.2-2, *Sensitive Receptors* depicts the sensitive receptors surrounding the Project.

Table 4.2-2: Sensitive Receptors

Type	Name	Distance from Project Site (feet)	Direction from Project Site	Location
Residential	Residential Uses	Adjacent	North	Along Keller Road
	Residential Uses	Adjacent	South	Along Bottle Brush Way
Schools	Oak Meadows Elementary School	2,789	Northeast	28600 Poinsettia St. Murrieta, CA 92563
	Vista Murrieta High School	5,435	Southeast	28251 Clinton Keith Rd Murrieta, CA 92563
	Antelope Hills Elementary School	5,724	South	36105 Murrieta Oaks Ave. Murrieta, CA 92562
	Tovashal Elementary School	6,650	South	23801 Raphael Murrieta, CA 92562
Hospital	Loma Linda University Medical Center - Murrieta	350	East	28062 Baxter Rd Murrieta, CA 92563
	Kaiser Permanente Murrieta Medical Campus	1,010	Northeast	28150 Keller Rd Murrieta, CA 92563
Places of Worship	Menifee Hills Bible Church	4,445	North	33220 Sweetwater Canyon Rd Menifee, CA 92584
Parks	Mapleton Park	2,730	Northeast	Poinsettia St & Daffodil Way Murrieta, CA 92563
	Springbrook Park	2,665	East	Sevilla St & Albacete Ave Murrieta, CA 92563
	Antelope Hills Park	6,463	South	Carlton Oaks St Murrieta, CA 92562
	Blackmore Ranch Park	5,136	South	36012 Nutmeg St Murrieta, CA 92562
	Oak Mesa Park	5,150	South	23680 Clinton Keith Road Murrieta, CA 92562

Note:
1. Distances are measured from the exterior project boundary only and not from individual construction areas within the interior of the project site.

Source: Google Earth, 2017 and 2019.

4.2.3 REGULATORY FRAMEWORK

Air quality within the Project area is regulated by several jurisdictions including the U.S. EPA, CARB, SCAQMD, Riverside County, and City of Murrieta. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS and set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards,

which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2 is a form of NO_x), sulfur oxides (SO_2 is a form of SO_x), PM less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively) and lead (Pb). NAAQS are summarized in Table 4.2-3, *Summary of Ambient Air Quality Standards and Attainment Designations.*

The General Conformity Rule of the FCAA (42 USC §7401) implements §176(c) of the FCAA. The purpose of the General Conformity Rule is to ensure that:

- federal activities do not cause or contribute to new violations of the NAAQS;
- actions do not worsen existing violation of the NAAQS; and
- attainment of the NAAQS is not delayed.

The regulations apply to a proposed federal action and public/private entities that receive approvals or funding from Federal agencies that would cause emissions of criteria air pollutants or ozone precursors in locations designated as nonattainment or maintenance areas for the emitted pollutants. A federal agency must make a determination that a federal action conforms to the applicable implementation plan before the action is taken.

The General Conformity analysis applies only to projects in a nonattainment area or an attainment area subject to a maintenance plan and is required for each criteria pollutant for which an area has been designated nonattainment or maintenance. If a project's emissions are below the "*de minimis*" level and are less than 10 percent of the area's inventory specified for each criteria pollutant in a nonattainment or maintenance area, further general conformity analysis is not required. A conformity determination must be made if emissions from project facilities are above "*de minimis*" thresholds established for the area. A conformity determination can still be made if facilities are sized to meet only the needs of current population projections that are used in the approved State Implementation Plan (SIP) for air quality. The conformity determination must include detailed descriptions of the proposed capacity increase calculations. If it is determined that project emissions are below "*de minimis*" levels and result in less than 10 percent of the nonattainment or maintenance area emissions inventory, a general conformity analysis is not needed.

STATE

California Air Resources Board

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing the California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 4.2-3, *Summary of Ambient Air Quality Standards and Attainment Designations*. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel, and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the CCAA provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Under the CCAA, the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme.

Table 4.2-3: Summary of Ambient Air Quality Standards and Attainment Designations

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Non-Attainment	– [a]	Non-Attainment
	8-hour	0.070 ppm		0.070 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m³	Non-Attainment	–	Attainment/ Maintenance
	24-hour	50 µg/m³		150 µg/m³	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m³	Non-Attainment	12 µg/m³	Non-Attainment
	24-hour	–		35 µg/m³	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment/ Maintenance
	8-hour	9 ppm		9 ppm	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment/ Maintenance
	1-hour	0.18 ppm		0.100 ppm[b]	

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Sulfur Dioxide (SO_2)	AAM	–	Attainment	0.03 ppm	Unclassified/ Attainment
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		–	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m3	Attainment	–	Non-Attainment (Partial)
	Calendar Quarter	–		1.5 µg/m3	
	Rolling 3-Month Average	–		0.15 µg/m3	
Sulfates	24-hour	25 µg/m3	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m3)	Attainment		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent	Unclassified		

a. No federal 1-hour standard.
b. To attain this standard, the 3-year average of the 98th percentile daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
c. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect public health. Most recent standard for each averaging time listed.
d. For more information visit *https://www.epa.gov/criteria-air-pollutants/naaqs-table*
e. For more information visit *https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm*
f. ppm = parts per million
g. µg/m^3 = micrograms per cubic meter

Sources:

1. California Air Resources Board. (2016). *Ambient Air Quality Standards Chart*. Retrieved from CARB Website: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed August 12, 2019.
2. SCAQMD. (2016). *National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for the South Coast Air Basin*. Retrieved from AQMD Website: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14?. Accessed August 12, 2019.
3. U.S. EPA. (2019). Nonattainment Areas for Criteria Pollutants (Green Book). Retrieved from U.S. EPA Website: https://www.epa.gov/green-book. Accessed August 12, 2019.

Assembly Bills 1807 & 2588 – Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the CARB adopted a regulation to reduce PM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on the road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation, establishes emissions performance requirements, establishes reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

REGIONAL

South Coast Air Quality Management District

Because Southern California has one of the worst air quality problems in the nation, the SCAQMD was created by the 1977 Lewis Air Quality Management Act[3]. Four county air pollution control agencies were merged into one regional district to better address the issue of improving air quality in southern California. Under the act, revised and renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the SCAB. Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal AAQS in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements and issuing permits for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational and training programs, and fines.

The SCAQMD is also the Lead Agency in charge of developing the AQMP, with input from the SCAG and CARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB in coordination with federal agencies provides the control element for mobile sources.

[3] SCAQMD. (1993). *CEQA Air Quality Handbook.* Page 2-2.

The state and national attainment status designations for the SCAB are summarized in Table 4.2-3. The SCAB is currently designated as a nonattainment area with respect to the state ozone, PM_{10}, and $PM_{2.5}$ standards, as well as the national 8-hour ozone and $PM_{2.5}$ standards. The SCAB is designated attainment or unclassified for the remaining state and federal standards.

AIR QUALITY MANAGEMENT PLAN

The 2016 AQMP was adopted by the SCAQMD Governing Board on March 3, 2017. The purpose of the AQMP is to set forth a comprehensive and integrated program that would lead the SCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update to the SCAB's commitments towards meeting the federal 8-hour ozone standards. The AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2016 RTP/SCS and updated emission inventory methodologies for various source categories.

AIR QUALITY ANALYSIS HANDBOOK

The SCAQMD has published the California Environmental Quality Act (CEQA) Air Quality Handbook (approved by the SCAQMD Governing Board in 1993 and augmented with guidance for Local Significance Thresholds [LSTs] in 2008). The SCAQMD guidance assists local government agencies and consultants in developing environmental documents required by CEQA including providing identification of suggested thresholds of significance for criteria pollutants for both construction and operation (see discussion of thresholds below). With the help of the *CEQA Air Quality Handbook* and associated guidance, local land use planners and consultants can analyze and document how proposed and existing projects affect air quality in order to meet the requirements of the CEQA review process. The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the current *CEQA Air Quality Handbook*. Although a timeline for completion has not been identified, the SCAQMD periodically provides updated guidance on their website.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. Under federal law, SCAG is designated as a Metropolitan Planning Organization (MPO) and under state law as a Regional Transportation Planning Agency and a Council of Governments (COG).

In 2012, SCAG adopted the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The RTP is a long-range transportation plan that provides a vision for regional transportation investments over a period of 20 years or more. The SCS is a new element of the RTP that demonstrates the integration of land use, transportation strategies, and transportation investments within the RTP. This new requirement was put in place by the passage of SB 375, with the goal of ensuring that the SCAG region can meet its regional greenhouse gas (GHG) reduction targets set by the CARB. SCAG adopted the 2016-2040 RTP/SCS on April 7, 2016. The SCS exceeds the targets issued by CARB (eight percent reduction by 2020 and 13 percent reduction by 2035), resulting in an eight percent reduction by 2020 and 18 percent by 2035, and 21 percent by 2040.

LOCAL

City of Murrieta General Plan 2035

The City of Murrieta General Plan 2035 Air Quality Element (City of Murrieta, 2011) includes goals and policies that will be applied to the project related to air quality. The applicable policies related to air quality are listed below:

Goal AQ-1: ***Improved air quality through participation in regional and local efforts.***

Policy AQ 1.1: Continue to work with the Western Riverside Council of Governments (WRCOG) Regional Air Quality Task Force to implement regional and local programs designed to meet federal, state, and regional air quality planning requirements.

Policy AQ 1.2: Review and update City regulations and/or requirements, as needed, based on improved technology and new regulations including updates to the Air Quality Management Plan (AQMP), rules and regulations from South Coast Air Quality Management District (SCAQMD), and revisions to SCAQMD's CEQA Guidelines.

Policy AQ 1.3: Cooperate with local, regional, state, and federal agencies to achieve better transportation facility planning and development.

Policy AQ-1.4: Cooperate with the State and Southern California Association of Governments (SCAG) in the implementation of SB 375 – Regional Transportation Planning, Housing, CEQA and Global Warming Emission Reduction Strategies.

Policy AQ-1.5: Provide public education and/or materials to educate and encourage residents and business owners to purchase/use low toxicity household cleaning products.

Goal AQ-2: ***The relationship between land use and air quality is considered in policy decisions in order to protect public health and improve air quality.***

Policy AQ 2.1: Locate sensitive receptors (i.e., residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes) away from significant pollution sources to the maximum extent feasible.

Policy AQ 2.2: Avoid locating new homes, schools, childcare and eldercare facilities, and health care facilities within 500 feet of freeways.

Policy AQ 2.3: Consider air quality impacts from both existing and new development when making siting decisions.

Policy AQ-2.4: Consult the California Air Resources Board's (CARB) Land Use and Air Quality Handbook and current environmental health research for the safe distances to sensitive land uses including schools, hospitals, elder and childcare facilities, or residences when new or expanded industrial land uses or other stationary sources of pollution are proposed, such as gas stations or auto body shops.

Policy AQ-2.5: Work with developers and/or builders of any sensitive land uses, such as hospitals, to determine compliance with California Air Resources Board (CARB) standards and to ensure any future plans or expansions are in compliance, and encourage retrofits to the facility such as plantings or air filters to improve indoor air quality, if necessary.

Goal AQ-3: ***Reduced emissions during construction activities.***

Policy AQ 3.1: Ensure that construction activities follow current South Coast Air Quality Management District (SCAQMD) rules, regulations, and thresholds.

Policy AQ 3.2: Ensure all applicable best management practices are used in accordance with the South Coast Air Quality Management District (SCAQMD) to reduce emitting criteria pollutants during construction.

Policy AQ 3.3: Require all construction equipment for public and private projects comply with California Air Resources Board's (CARB) vehicle standards. For projects that may exceed daily construction emissions established by the South Coast Air Quality Management District (SCAQMD), Best Available Control Measures will be incorporated to reduce construction emissions to below daily emission standards established by the SCAQMD.

Policy AQ-3.4: Require project proponents to prepare and implement a Construction Management Plan, which will include Best Available Control Measures among others. Appropriate control measures will be determined on a project by project basis and should be specific to the pollutant for which the daily threshold is exceeded. Such control measures may include but not be limited to:

- Minimizing simultaneous operation of multiple construction equipment units.
- Implementation of South Coast Air Quality Management District (SCAQMD) Rule 403, Fugitive Dust Control Measures.
- Watering the construction area to minimize fugitive dust.
- Require that off-road diesel-powered vehicles used for construction shall be new low emission vehicles, or use retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by California Air Resources Board (CARB).
- Minimizing idling time by construction vehicles.

Goal AQ-4: ***Mobile source emissions are reduced by providing a balance of jobs and housing that serve the needs of the community.***

Policy AQ 4.1: Cooperate with local, regional, state, and federal agencies to reduce vehicle miles traveled (VMT) and consequent emissions through job creation.

Policy AQ 4.2: Improve jobs/housing balance by encouraging the development, expansion, and retention of business.

Policy AQ 4.3: Improve access of businesses to local institutions that provide education and job training to prepare local residents to fill the jobs local industries create.

Policy AQ 4.4: Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.

Goal AQ-5: ***Air quality is improved through an efficient circulation system, reduced traffic congestion, and reduced vehicle miles traveled.***

Policy AQ-5.1: Encourage employers to implement transportation demand management (TDM) measures, such as the following programs to reduce trips and vehicle miles traveled:

- Transit subsidies
- Bicycle facilities
- Alternative work schedules
- Ridesharing
- Telecommuting and work-at-home programs
- Employee education
- Preferential parking for carpools/vanpools

Policy AQ-5.2: Re-designate truck routes away from sensitive land uses including schools, hospitals, elder and childcare facilities, or residences, where feasible.

Policy AQ-5.3: Promote use of fuel-efficient and low-emissions vehicles, including Neighborhood Electric Vehicles.

Policy AQ-5.4: Encourage the use of lowest emission technology buses in public transit fleets.

Policy AQ-5.5: Provide a preference to contractors using reduced emission equipment for City construction projects as well as for City contracts for services (e.g., garbage collection).

Goal AQ-6: ***Stationary source pollution (point source and area source) are minimized through existing and future regulations and new technology.***

Policy AQ-6.1: The City shall continue to minimize stationary source pollution through the following:

- Ensure that industrial and commercial land uses are meeting existing South Coast Air Quality Management District (SCAQMD) air quality thresholds by adhering to established rules and regulations.
- Encourage the use of new technology to neutralize harmful criteria pollutants from stationary sources.
- Reduce exposure of the City's sensitive receptors to poor air quality nodes through smart land use decisions.

Policy AQ-6.2: Encourage and support the use of innovative ideas and technology to improve air quality.

Policy AQ-6.3: Encourage non-polluting industry and clean green technology companies to locate to the City.

Policy AQ-6.4: Work with the industrial business community to improve outdoor air quality through improved operations and practices.

Policy AQ-6.5: New multi-family residential buildings and other sensitive land uses in areas with high levels of localized air pollution should be designed to achieve good indoor air quality through landscaping, ventilation systems, or other measures.

Policy AQ 6-6: Encourage green building techniques that improve indoor air quality, energy efficiency and conservation in buildings, and utilization of renewable energy sources.

Goal AQ-7 ***Particulate matter and fugitive dust emissions are reduced throughout the City.***

Policy AQ-7.1: Adopt incentives, regulations, or procedures to reduce particulate matter.

Policy AQ-7.2: Collaborate with transportation agencies, utilities, and developers to minimize fugitive dust and emissions from construction and maintenance activities.

Policy AQ 7.3: Cooperate with local, regional, state, and federal jurisdictions and/or agencies to better control fugitive dust from stationary, mobile, and area sources.

Policy AQ 7.4: Consider the suspension of all grading operations, not including dust control actions, at construction projects when the source represents a public nuisance or potential safety hazard due to reduced visibility on streets surrounding the property.

4.2.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER SCAQMD

Under CEQA, the SCAQMD is an expert commenting agency on air quality and related matters within its jurisdiction or impacting its jurisdiction.

The SCAQMD reviews projects to ensure that they would not:

1) Cause or contribute to any new violation of any air quality standard;
2) Increase the frequency or severity of any existing violation of any air quality standard; or
3) Delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

The SCAQMD *CEQA Air Quality Handbook* provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries. Exceedance of the SCAQMD thresholds could result in a potentially significant impact. The Lead Agency will adopt the thresholds set forth in the SCAQMD Handbook.

If the Project results in emissions in excess of the established thresholds shown in Table 4.2-4, *South Coast Air Quality Management District Air Quality Significance Thresholds*, a significant air quality impact may occur. Additional analysis is warranted to fully assess the significance of impacts and potential mitigation measures may be necessary. The quantifiable thresholds shown below are currently recommended by the SCAQMD and are used to determine the significance of air quality impacts associated with implementation of the MHSPA.

Table 4.2-4: South Coast Air Quality Management District Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	Construction (lb/day)	Operation (lb/day)
NO_x	100	55
ROG	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
CO	550	550
Lead	3	3
a. Mass emissions refer to the total weight (e.g., pounds) of emissions as opposed to the concentration in air (e.g., parts per million, micrograms per cubic meter).		
Source: SCAQMD. (1993). CEQA Air Quality Handbook.		

LSTs were developed in response to the SCAQMD Governing Board's environmental justice (EJ) initiatives (EJ initiative I-4) in recognition of the fact that criteria pollutants such as CO, NO_x, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts as well as regional impacts. The goal of significance thresholds is to ensure that no source creates, or receptor endures, a significant adverse impact from any project. The evaluation of localized air quality impacts determines the potential of the Project to violate any air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. LSTs represent the maximum emissions or air concentrations from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or State AAQS, at any nearby sensitive or worker receptor. LSTs are defined separately for construction and operational activities. The Project is located in SRA 26 (Temecula Valley). Therefore, the LSTs for this SRA were selected for the LST assessment.

Based on the SCAQMD guidance on applying California Emissions Estimator Model (CalEEMod) to LSTs, the Project will disturb approximately 14 acres of land per day.[4] LST thresholds increase as acreage and distance increase. Therefore, the LST thresholds for five acres was conservatively utilized for the construction LST analysis. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest residential properties are located on the north side of Keller Road, the shortest distance available (25 meters) was used. However, the majority of construction activities would occur further away. Greer Ranch is also located south of the project, more than 400 meters away from the major construction zone. This analysis conservatively uses the 25-meter threshold. The applicable LST thresholds are shown in Table 4.2-5, *SRA 26 Localized Significance Thresholds for Construction*.

[4] SCAQMD. (ND). *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds.* Retrieved from AQMD Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf. Accessed August 12, 2019. CalEEMod calculates construction emissions (off-road exhaust and fugitive dust) based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment. Based on the SCAQMD's acreage rates and the project's modeled equipment from the peak day (6 tractors, 6 graders, 4 dozers, and 6 scrapers), the project would disturb 14 acres per day.

Table 4.2-5: SRA 26 Localized Significance Thresholds for Construction

Source	Pollutant (pounds/day)[1]			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Localized Significance Threshold[1]	*371*	*1,965*	*13*	*8*

Source: The Localized ST was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_x, CO, PM_{10}, and $PM_{2.5}$. The LST was conservatively based on the anticipated five acres of disturbance per day (actual daily disturbance would be greater based on the amount of equipment modeled) and a distance of 25 meters to sensitive receptors, and the source receptor area (SRA 26). Accessible at http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

SCAQMD Localized CO

CO hot-spots are localized violations of the state or federal CO standard, and are related to increases in on-road vehicle congestion. These potential impacts are localized in nature, occurring near the emissions source. The CO hot-spot thresholds are represented by the most restricted state or federal CO AAQS:

- 1-hour CO standard: 20 ppm; and
- 8-hour CO standard: 9 ppm.

SCAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hot-spot. The screening criteria identify when site-specific CO dispersion modeling is not necessary. The largest contributor to CO emissions during project operations is typically from motor vehicles. A CO hot-spot represents a condition where high concentrations of CO may be produced by motor vehicles accessing a congested traffic intersection under heavy traffic volume conditions. If the CO contributed by the project in combination with CO produced by non-project traffic exceeds the above standards, then the project would have a significant impact.

SCAQMD Odor-Based Significance Thresholds

Projects that produce objectionable odors could constitute a significant air quality impact to existing uses. The SCAQMD cites District Rule 402 as the determinant for odor-related issues in a CEQA context. It states that, "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan? (see Impact 4.2-1);
- 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? (see Impact 4.2-2);
- Expose sensitive receptors to substantial pollutant concentrations? (see Impact 4.2-3); and
- Result in other emissions (such as those leading to odors adversely affecting a substantial number of people? (see Impact 4.2-4).

METHODOLOGY AND ASSUMPTIONS

The above standards of significance are assessed as the basis for determining the significance of impacts related to air quality. Additional detail about the implementation of the above standards of significance and specific calculation methodology for each portion of the evaluation is provided in the appropriate subsection. If necessary, mitigation measures are proposed to reduce impacts to less than significant levels. Additional Project information and air quality analysis assumptions are provided in Section 3.0, *Project Description* and in Appendix 9.2.

PROJECT DESIGN FEATURES

- The Project has reduced air emissions by reducing the total development area in comparison to the currently approved MHSP, which reduces the area required for grading;
- The Project has reduced air emissions by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses); and
- Consistent with General Plan Policy AQ 2.2, the Project has been redesigned to avoid placing residential uses within 500 feet of the I-215 freeway.

4.2.5 IMPACTS AND MITIGATION MEASURES

Impact 4.2-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Level of Significance: Significant and Unavoidable Impact

The Project site is located within the SCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the FCCA, to reduce emissions of criteria pollutants for which SCAB is in nonattainment. In order to reduce such emissions, the SCAQMD prepared the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state and federal air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the CARB, SCAG, and the U.S. EPA. The 2016 AQMP's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 RTP/SCS; updated emission inventory methodologies for various source categories; and SCAG's latest growth forecasts.

The SCAQMD's CEQA Handbook identifies two key indicators of consistency with the AQMP:

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

According to the SCAQMD's *CEQA Air Quality Handbook*, the purpose of the consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with federal and State AAQS.

With respect to the first criterion, based on the air quality modeling analysis conducted for the Project summarized later in this EIR section and provided in Appendix 9.2, the Project will result in emissions of pollutants exceeding the SCAQMD's regional significance thresholds. The consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, therefore an analysis of a project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency.

Localized concentrations of NO_X will exceed the SCAQMD thresholds for project operations. Because ROG are not a criteria pollutant, there is no ambient standard or localized threshold for ROG. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established. However, NO_X is a criteria pollutant, and Project implementation will potentially result in an increase in the frequency or severity of existing air quality violations.

Concerning the second criterion, the 2016 AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts are defined in consultation with local governments and with reference to local general plans. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Therefore, the SCAQMD's second criterion for determining project consistency focuses on whether the project exceeds the assumptions used in preparing the forecasts presented in the 2016 AQMP.

In the case of the 2016 AQMP, several sources of data form the basis for the projections of air pollutant emissions including the Riverside County GP, SCAG's *Growth Management* Chapter of the *Regional Comprehensive Plan* (RCP), and SCAG's RTP/SCS. The RTP/SCS also provides socioeconomic forecast projections of regional population growth. Most of the Project site is designated Rural Mountainous, 10-acre minimum lot size (RM) in the Riverside County GP, with smaller portions designated Rural Community-Estate Density Residential, two-acre minimum lot size (RC-EDR) and Rural Community-Low Density Residential, one-acre to half-acre lot size (RC-LDR). All of the Project site is zoned by Riverside County as Rural Residential (R-R).

The Project proposes annexation into the City of Murrieta and changing the land use designations to Single-Family Residential (SFR), Multiple-Family Residential (MFR), Commercial (C), and Parks and Open Space (P/OS). Thus, the proposed Project is not consistent with the types, intensity, and patterns of land use envisioned for the site vicinity according to the Riverside County General Plan. Therefore, the population, housing, and employment forecasts adopted by SCAG and incorporated into the 2016 AQMP are not consistent with the proposed Project. The annexation into the City of Murrieta and changing the land uses to allow for a greater population density than what was anticipated in the 2016 AQMP, therefore the Project would exceed the buildout assumptions in the AQMP.

MITIGATION MEASURES

Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable.

Refer to Mitigation Measures (MM) AQ-1 to AQ-12 beginning on page 4.2-34.

Impact 4.2-2: 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?

Level of Significance: Significant and Unavoidable Impact

CONSTRUCTION

Construction Emissions Methodology

Construction criteria pollutant emissions were calculated by using a combination of emission models and emission factors. These models and factors sources included CalEEMod 2016.3.2, CARB 2011 Off-Road Emissions Inventory Model, and EMFAC2014. Each model calculates emissions for a different type of source. Details regarding the source types and models used, equipment inventory, assumptions, and all data used to calculate construction-related air quality emissions are available in Appendices 9.2.1 and 9.2.2.

Construction Emissions Summary

Construction activities will include grading; paving; construction of single-family buildings, multi-family buildings, and commercial retail buildings; and architectural coating. Site grading during all three phases will disturb approximately 294 acres. Phase 1 will require approximately 1,335,130 cubic yards of cut and 917,783 cubic yards of fill. The remaining 417,347 cubic yards of soil would be stockpiled on-site for use in future phases. Phase 2 will require 1,194,335 cubic yards of cut and 1,695,580 cubic yards of fill, requiring 401,116 cubic yards of soil from Phase 1. Phase 3 will require approximately 11,967 cubic yards of cut and 47,229 cubic yards of fill. Cut and fill soil would not be imported or exported from off-site locations. Earthwork from all three phases result in 119,160 cubic yards of additional fill. In order for the site to balance, this soil will come from the Project's trenching and undercut activities.[5]

Project construction equipment will include concrete/industrial saws, rubber-tired dozers, and tractors/loaders/backhoes during demolition; graders, rubber-tired dozers, scrapers, and tractors/loaders/backhoes during grading; cranes, forklifts, tractors, and welders during building construction; and pavers, rollers, tractors, and paving equipment during paving; and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the CalEEMod. Table 4.2-6, *Project Construction Emissions* presents the anticipated daily short-term construction emissions. Project construction emissions are presented in pounds per day and are sorted by pollutants and emissions sources. For each phase of construction, the table provides the emissions per pollutant in pounds per day prior to mitigation implementation ("Unmitigated Emissions"). It then provides the emissions per pollutant in pounds per day after mitigation is implemented ("Mitigated Emissions"). For Phases 1 and 2, "Mitigated Emissions" are added to Blasting and Rock Crushing emissions for a total daily emission for each pollutant in pounds per day ("Phase (1 or 2) Maximum Daily Emissions"). The total daily emission for Phases 1 and 2 and "Mitigated Emissions" for Phase 3, for each pollutant (pounds/day), is then compared to the SCAQMD Threshold, and noted whether or not the threshold is exceeded. The Project's construction emissions throughout all three phases will not exceed SCAQMD thresholds.

[5] Earthwork volumes conservatively represent those associated with the original MHSP No. SPM-4, which is the worst-case scenario. The MHSPA will have less earthwork, resulting in comparatively lower emissions.

As an example, Project construction in Phase 1 will emit 168.14 pounds of NO_x per day without mitigation; this amount exceeds the SCAQMD Threshold of 100 pounds/day. Following implementation of mitigation measures, daily emission of NO_x in pounds/day is reduced to 21.92. "Mitigated Emissions" are combined with "Blasting" and "Rock Crushing" emissions for a total daily NO_x emission of 69.72 pounds, which amount does not exceed the "SCAQMD Threshold" of 100 pounds/day.

Table 4.2-6: Project Construction Emissions

Emissions Source	Pollutant (pounds/day)					
	ROG[3]	NO_X	CO	SO_2[4]	PM_{10}	$PM_{2.5}$
Phase 1						
Unmitigated Emissions[1]	16.11	168.14	104.56	0.22	43.67	21.30
Mitigated Emissions[1, 2, 5]	10.74	21.92	113.84	0.22	14.37	5.96
Blasting[6]	0.00	41.27	162.64	4.86	0.03	0.00
Rock Crushing[7]	6.86	6.53	22.90	0.07	34.94	4.44
Phase 1 Maximum Daily Emissions	**17.60**	**69.72**	**299.38**	**5.15**	**49.34**	**10.4**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***
Phase 2						
Unmitigated Emissions[1, 2]	19.62	100.86	94.95	0.23	40.69	18.45
Mitigated Emissions[1, 2, 5]	16.01	24.93	112.17	0.23	14.07	5.85
Blasting[6]	0.00	38.45	151.55	4.52	0.04	0.00
Rock Crushing[7]	6.86	6.53	22.90	0.07	32.62	4.20
Phase 2 Maximum Daily Emissions	**22.87**	**69.91**	**286.62**	**4.82**	**46.73**	**10.05**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***
Phase 3						
Unmitigated Emissions[1]	9.04	58.17	63.69	0.16	25.78	14.63
Mitigated Emissions[2]	9.04	58.17	63.69	0.16	10.60	6.29
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Emissions were calculated using CalEEMod, as recommended by the SCAQMD.
2. The reduction/credits for construction emission mitigations are based on mitigation included in the CalEEMod model and as typically required by the SCAQMD. The mitigation includes the following: properly maintain mobile and other construction equipment; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour (mph).
3. Both ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.
4. SO_2 is the component of greatest concern and is used as the indicator for the larger group of gaseous sulfur oxides (SO_X)
5. In addition to the standard SCAQMD dust control rules noted above, Phase 1 and Phase 2 mitigation also includes Tier 4 Final engines. Refer to MM AQ-3 on page 4.2-35.
6. Calculated with EPA AP-42, Section 11.9.
7. Calculated with EPA AP-42, Sections 11.19.2 and 13.2.4 for emissions from processing equipment and feed hopper drops. Also includes exhaust emissions from generators calculated using emissions factors and load factors from CalEEMod.

Source: MBI. (2018). *Air Quality Greenhouse Gas Assessment for Murrieta Hills Specific Plan Amendment*. Santa Ana, CA. (EIR Appendix 9.2.1).

Construction Localized Emissions Summary

As discussed earlier, based on the SCAQMD guidance on applying CalEEMod to LSTs, the Project will disturb approximately 14 acres of land per day. The LST thresholds for five acres was conservatively utilized for the construction LST analysis. The nearest residential properties are located on the north side of Keller Road, approximately 25 meters or more away from the closest active construction zone . Table 4.2-7, *Localized Significance of Construction Emissions*, shows the localized unmitigated and mitigated construction-related emissions. The emissions in Table 4.2-7 represent the worst-case scenario and are based on peak earthwork volumes anticipated for the original MHSP No. SPM-4. Emissions associated with the MHSPA will be comparatively lower.

Table 4.2-7: Localized Significance of Construction Emissions

Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1				
Total Unmitigated On-Site Emissions	167.94	101.97	42.88	21.09
Total Mitigated On-Site Emissions	11.41	101.97	13.63	5.76
Blasting	41.27	162.64	0.03	0.00
Rock Crushing	6.53	22.90	34.94	4.44
Phase 1 Maximum Daily Emissions	**59.21**	**287.51**	**48.60**	**10.20**
Localized Significance Threshold[1]	*371*	*1,965*	*13*	*8*
Thresholds Exceeded?	***No***	***No***	***Yes***	***Yes***
Phase 2				
Total Unmitigated On-Site Emissions	*100.83*	*86.77*	*40.46*	*19.39*
Total Mitigated On-Site Emissions	*11.41*	*86.77*	*13.86*	*5.80*
Blasting	38.45	151.55	0.04	0.00
Rock Crushing	6.53	22.90	32.62	4.20
Phase 2 Maximum Daily Emissions	**56.39**	**261.22**	**46.52**	**10.00**
Localized Significance Threshold[1]	*371*	*1,965*	*13*	*8*
Thresholds Exceeded?	***No***	***No***	***Yes***	***Yes***
Phase 3				
Total Unmitigated On-Site Emissions	*31.50*	*43.53*	*19.36*	*10.98*
Total Mitigated On-Site Emissions	*31.50*	*43.53*	*8.31*	*4.92*
Localized Significance Threshold[1]	*371*	*1,965*	*13*	*8*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Source: The LST was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The LST was based on five acres of disturbance per day (actual disturbance daily disturbance would be greater based on the amount of equipment modeled) and a distance of 25 meters or less to sensitive receptors, and the source receptor area (SRA 26). Accessible at http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

Table 4.2-7 shows that the PM_{10} and $PM_{2.5}$ emissions would exceed the conservative five-acre screening thresholds on a peak day of Project construction in Phases 1 and 2. To determine if the Project would result in significant concentrations of these two criteria pollutants at nearby sensitive receptors, air pollution dispersion modeling was conducted.

Localized construction emissions were estimated using the U.S. EPA AERSCREEN model to determine the worst-case concentrations of PM_{10} and $PM_{2.5}$ at the nearest off-site sensitive receptors. AERSCREEN is the recommended screening model based on the AERMOD dispersion model. The model produces estimates

of worst-case concentrations without the need for hourly meteorological data. According to the U.S. EPA Support Center for Regulatory Atmospheric Modeling (SCRAM) website, AERSCREEN is intended to produce concentration estimates that are equal to or greater than the estimates produced by AERMOD with a fully developed set of meteorological and terrain data.[6] Maximum (worst-case) on-site PM_{10} and $PM_{2.5}$ construction emissions were used for Phase 1 and Phase 2.

Table 4.2-8, *Construction Emissions Dispersion Modeling Results* shows construction-related emissions compared to the ambient air quality standards for construction designated by the SCAQMD[7]. As shown in Table 4.2-8, pollutant concentrations for PM_{10} and $PM_{2.5}$ would not exceed SCAQMD thresholds. Therefore, the Project would result in a less than significant localized construction impacts.

Table 4.2-8: Construction Emissions Dispersion Modeling Results

Source	Pollutant			
	PM_{10}		$PM_{2.5}$	
	24-Hour	Annual	24-Hour	Annual
Phase 1 Maximum Modeled Concentration (µg/m^3)	0.6066	0.1011	0.1125	0.0188
Phase 2 Maximum Modeled Concentration (µg/m^3)	0.0714	0.0119	0.0705	0.0118
SCAQMD Standard (µg/m^3)	*10.4*	*1.0*	*10.4*	*1.0*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from demolition, grading, and construction is expected to be short-term and will cease upon Project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (PM smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. Fine PM ($PM_{2.5}$) is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surface by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and SO_X combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

[6] U.S. EPA, SCRAM. (2017). *Air Quality Dispersion Modeling - Screening Models.* Retrieved from U.S. EPA Website: https://www.epa.gov/scram/air-quality-dispersion-modeling-screening-models. Accessed August 14, 2019.

[7] SCAQMD. (2019). *South Coast AQMD Air Quality Significance Thresholds. Retrieved from AQMD Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. Accessed September 20, 2019.*

MMs AQ-1 and AQ-2 (see page 4.2-35) will implement dust control techniques (i.e., daily watering), limitations on construction hours, and adherence to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, employ or contract a dust control supervisor, etc.), to reduce PM_{10} and $PM_{2.5}$ concentrations. These are standard dust control measures that the SCAQMD requires for all projects. In addition, the Project is required to comply with the standard construction practices outlined in MMs AQ-3 through AQ-11 (beginning on page 4.2-35) to further reduce short-term construction emissions. Total PM_{10} and $PM_{2.5}$ emissions will be below the SCAQMD threshold. Therefore, PM impacts during construction will be less than significant.

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions[8], which are ozone precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. Architectural coatings were also quantified with CalEEMod based upon the size of the buildings. The highest concentration of ROG emissions will be generated during the application of architectural coatings on the buildings. As required by law, all architectural coatings for the Project structures will comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating. Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. Project construction will not result in an exceedance of the SCAQMD threshold for ROG emissions during any phase of construction (Table 4.2-6). Therefore, impacts will be less than significant in this regard.

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. The Project will adhere to all standard SCAQMD regulations, such as maintaining all construction equipment in proper tune, shutting down equipment when not in use for extended periods of time, and implementing SCAQMD Rule 403. In addition, the Project will be required to implement MMs AQ-3 through AQ-5 (see page 4.2-35) to reduce NO_x emissions below SCAQMD significance thresholds. MM AQ-3 (see page 4.2-35) will require that all Phase 1 construction equipment have Tier 4 Final compliant engines; MM AQ-4 (see page 4.2-35) requires construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction; and MM AQ-5 (see page 4.2-36) requires construction equipment to be turned off when not in use for more than 30 minutes. Phase 2 and 3 NO_x emissions will not exceed SCAQMD thresholds and therefore will not require Tier 4 Final Certification. Therefore, impacts are less than significant when MMs AQ-3 through AQ-5 (see page 4.2-35) are applied.

OPERATIONS

Operational Emissions Methodology

Similar to the Construction Emissions methodology, operational criteria pollutant emissions were calculated by using a combination of emission models and emission factors. These models and factors sources included CalEEMod 2013.2.2, CARB 2011 Off-Road Emissions Inventory Model, and EMFAC2014.

[8] ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.

Operational Emissions Summary

Table 4.2-9, *Project Operations Emissions*, presents the anticipated mobile source emissions. As shown, emissions generated by vehicle traffic associated with the Project will exceed established SCAQMD regional threshold for NO_X. Area source emissions from the Project will not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$. When mobile emissions are combined with area source emissions, ROG emissions will be significant. Area source emissions will be significant due to the magnitude of the development associated with Project implementation. Further, energy source emissions from the Project will not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Table 4.2-9: Project Operations Emissions

Source	Estimated Emissions (pounds/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources[2]	36.86	11.29	66.42	0.07	1.20	1.20
Energy Sources	0.66	5.61	2.47	0.04	0.45	0.46
Mobile Sources	25.76	187.21	260.82	1.45	128.70	34.84
Total Proposed Emissions	*63.28*	*204.11*	*329.72*	*1.56*	*130.35*	*36.49*
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Is Threshold Exceeded? (Significant Impact)	***Yes***	***Yes***	***No***	***No***	***No***	***No***

Notes:
1. Based on CalEEMod modeling results, worst-case seasonal emissions for energy and mobile emissions have been modeled.
2. The Project does not include wood-burning hearths, which are also prohibited per SCAQMD Rule 445 (Wood-Burning Devices). Therefore, mitigated values were used for Area Source Emissions.

Source: MBI. (2018). *Air Quality Greenhouse Gas Assessment for Murrieta Hills Specific Plan Amendment*. Santa Ana, CA. (EIR Appendix 9.2.1).

Operational emissions from the Project will exceed SCAQMD threshold for ROG when mobile and area sources are combined. It should be noted that construction of the Project is estimated to occur over three phases from 2023 through 2031. As such, emissions related to construction activities will overlap with Project operations. MMs AQ-1 through AQ-11 (beginning on page 4.2-34) will be incorporated to reduce construction-related emissions to a less than significant level. However, with construction and operational activities overlapping, overall emissions will be significant and unavoidable. Therefore, the Project will result in a significant and unavoidable impact.

However, it should be noted that the Project includes provisions for non-vehicular travel (i.e., bike lanes and pedestrian sidewalks), is in close proximity to I-215, and incorporates appropriate VMT reduction measures as noted in Sections 4.7, *Greenhouse Gas Emissions* and 4.13, *Transportation*. In addition, the Project represents a substantial reduction in density from the currently approved MHSP, by roughly a 50 percent reduction in residential units and a reduction in overall development area (see Section 5, *Alternatives to the Proposed Project* for additional discussion).

CRITERIA POLLUTANT HEALTH IMPACTS

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (*Sierra Club v. County of Fresno [Friant Ranch, L.P.]* [2018] Cal.5th, Case No. S219783).

The Friant Ranch project was a 942-acre Specific Plan that involved a commercial master planned community of approximately 2,500 dwelling units and extensive commercial supporting development. The anticipated air quality impacts resulting from this development included significant and unavoidable emissions of multiple criteria pollutants (including significant emissions of both primary O_3 precursors [NO_X and ROGs]) at levels that exceeded the daily thresholds of significance. As noted above and shown in Table 4.2-9, the project's operational emissions will exceed the SCAQMD's ROG and NO_X significance thresholds, resulting in a significant and unavoidable impact.

The SCAQMD has set its CEQA significance thresholds for NO_X and ROG (VOC) at 10 tons per year (expressed as 55 pounds per day) based on the FCAA, which defines a major stationary source (in extreme ozone nonattainment areas such as the SCAB) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program[9] was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based NAAQS. The NAAQS establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

NO_X and ROG are precursor emissions that form ozone in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. Breathing ground-level ozone can result in health effects that include: reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Table 4.2-8 shows that a large proportion of the project's NO_X and ROG emissions are from mobile sources. Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. CARB (a branch of the California EPA) is primarily responsible for controlling pollution from motor vehicles. The air districts must adopt rules to achieve and maintain the State and Federal AAQS within their jurisdictions.

According the SCAQMD's 2016 AQMP, ozone, NO_X, and ROG have been decreasing in the SCAB since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled in the SCAB continue to increase, NO_X and ROG levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_X emissions from electric utilities have also decreased due to the use of cleaner fuels and renewable energy. The 2016 AQMP demonstrates how the SCAQMD's control strategy to meet the 8-hour ozone standard in 2023 would lead to sufficient NO_X emission reductions to attain the 1-hour ozone standard by 2022. In addition,

[9] Code of Federal Regulation (CFR) [i.e., PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S).

since NO_X emissions also lead to the formation of $PM_{2.5}$, the NO_X reductions needed to meet the ozone standards will likewise lead to improvement of $PM_{2.5}$ levels and attainment of $PM_{2.5}$ standards.

The SCAQMD's air quality modeling demonstrates that NO_X reductions prove to be much more effective in reducing ozone levels and will also lead to significant improvement in $PM_{2.5}$ concentrations. NO_X-emitting stationary sources regulated by the SCAQMD include Regional Clean Air Incentives Market (RECLAIM) facilities (e.g., refineries, power plants, etc.), natural gas combustion equipment (e.g., boilers, heaters, engines, burners, flares) and other combustion sources that burn wood or propane. The 2016 AQMP identifies robust NO_X reductions from new regulations on RECLAIM facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_X emissions levels achievable but there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The AQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies.

The 2016 AQMP also emphasized that beginning in 2012, continued implementation of previously adopted regulations will lead to NO_X emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_X from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_X reductions from stationary sources achieved in the decades prior to 2008.

Part of the control process of the SCAQMD's duty to greatly improve the air quality in the SCAB is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook. The single threshold of significance used to assess direct project and cumulative impacts has improved air quality as evidenced by the track record of the air quality in the SCAB dramatically improving over the course of the past decades. As stated by the SCAQMD, the thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for the Project.

Toxic Air Contaminants (TAC) Trends. In 1984, as a result of public concern for exposure to airborne carcinogens, CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile and area sources, such as cars, trucks, stationary products, and consumer products. According to the Ambient and Emission Trends of Toxic Air Contaminants in California journal article[10] which was prepared for CARB, results show that between 1990-2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly (between 1990 and 2012). The seven TACs studied include those that are derived from mobile sources: diesel particulate matter (DPM), benzene, and 1,3-butadiene; those that are derived from stationary sources: perchloroethylene and hexavalent chromium; and those derived from photochemical reactions of emitted VOCs: formaldehyde and acetaldehyde. TACs data was gathered at monitoring sites from both the Bay Area and South Coast Air Basins. Several of the sites in the SCAB include Reseda, Compton, Rubidoux, Burbank, and Fontana. The decline in ambient

[10] Ralph Propper, Patrick Wong, Son Bui, Jeff Austin, William Vance, Alvaro Alvarado, Bart Croes, and Dongmin Luo, *Ambient and Emission Trends of Toxic Air Contaminants in California. American Chemical Society: Environmental Science & Technology.* 2015.

concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk.

Mobile Source TACs. CARB introduced two programs that aimed at reducing mobile emissions for light and medium duty vehicles through vehicle emissions controls and cleaner fuel. In California, light-duty vehicles sold after 1996 are equipped with California's second-generation On-Board Diagnostic system. The On-Board Diagnostic II system monitors virtually every component that can affect the emission performance of the vehicle to ensure that the vehicle remains as clean as possible over its entire life and assists repair technicians in diagnosing and fixing problems with the computerized engine controls. If a problem is detected, the On-Board Diagnostic II system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase Check Engine or Service Engine Soon. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem. CARB has recently developed similar On-Board Diagnostic requirements for heavy-duty vehicles over 14,000 pounds. CARB's phase II Reformulated Gasoline regulation, adopted in 1996, also led to a reduction of mobile source emissions. Through such regulations, benzene levels declined 88 percent from 1990-2012. 1,3-Butadiene concentrations also declined 85 percent from 1990-2012 as a result of the use of reformulated gasoline and motor vehicle regulations[11].

In 2000, CARB's Diesel Risk Reduction Plan recommended the replacement and retrofit of diesel-fueled engines and the use of ultra-low-sulfur (<15ppm) diesel fuel. As a result of these measures, DPM concentrations have declined 68 percent since 2000, even though the state's population increased 31 percent and the amount of diesel vehicles miles traveled increased 81 percent. With the implementation of these diesel-related control regulations, CARB expects a DPM decline of 71 percent for 2000-2020.

Cancer Risk Trends. Based on information available from CARB, overall cancer risk throughout the Basin has had a declining trend since 1990. In 1998, following an exhaustive 10-year scientific assessment process, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The SCAQMD initiated a comprehensive urban toxic air pollution study, called MATES-II (for Multiple Air Toxics Exposure Study). DPM accounts for more than 70 percent of the cancer risk. In 2008 the SCAQMD prepared an update to the MATES-II study, referred to as MATES-III. MATES-III estimates the average excess cancer risk level from exposure to TACs is an approximately 17 percent decrease in comparison to the MATES-II study. Nonetheless, the SCAQMD's most recent in-depth analysis of the toxic air contaminants and their resulting health risks for all of Southern California was from the *Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV,"* which shows that cancer risk has decreased more than 55 percent between MATES III (2005) and MATES IV (2015)[12].

Criteria Pollutant Health Risk. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (April 6, 2015) (Brief), the SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality. The SCAQMD

[11] Ibid.
[12] South Coast Air Quality Management District, *The Multiple Air Toxics Exposure Study IV.* 2015.

staff provides comments on as many as 25 or 30 such documents each month. Therefore, this analysis relies on SCAQMD expertise, thresholds, and guidance to disclose the Project's air quality impacts.

The SCAQMD discusses that it may be infeasible to quantify health risks caused by individual projects, due to various factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk and it does not necessarily mean anyone will contract cancer as a result of the project. The Brief also cites the author of the CARB methodology, which reported that a $PM_{2.5}$ methodology is not suited for small projects and may yield unreliable results. Similarly, SCAQMD staff does not currently know of a way to accurately quantify O_3-related health impacts caused by NO_X or ROG (VOC) emissions from relatively small projects, due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

Conversely, for extremely large regional projects, the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NO_X and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to O_3.

The Brief makes it clear that SCAQMD does not believe that there must be a quantification of a project's health risks in all CEQA documents prepared for individual projects. Any attempt to quantify the proposed Project's health risks would be considered unreliable and misleading. Also, the Project does not generate anywhere near 6,620 pounds per day of NO_X or 89,190 pounds per day of ROG (VOC) emissions, which SCAQMD stated was a large enough emission to quantify O_3-related health impacts. Therefore, the Project's emissions are not sufficiently high enough to use regional modeling program to correlate health effects on a basin-wide level. Notwithstanding, as previously noted, a site-specific localized impact analysis that does correlate potential project health impacts on a local level to immediately adjacent land uses is included above.

Although it may be misleading and unreliable to attempt to specifically and numerically quantify the Project's health risks, this analysis provides extensive information concerning the Project's potential health risks. While the Project is expected to exceed the SCAQMD's numeric regional mass daily thresholds for NO_X and ROG, this does not in itself constitute a significant health impact to the population adjacent to the Project and within the Basin.

The SCAQMD's numeric regional thresholds are based in part on Section 180(e) of the FCAA – it should be noted that the numeric regional mass daily thresholds have not changed since their adoption as part of the *CEQA Air Quality Handbook* published by SCAQMD in 1993 (over 20 years ago). The numeric regional mass daily thresholds are also intended to provide a means of consistency in significance determination within the environmental review process. Notwithstanding, simply exceeding the SCAQMD's numeric regional mass daily thresholds does not constitute a particular health impact to an individual receptor. The reason for this is that the mass daily thresholds are in pounds per day emitted into the air whereas health effects are determined based on the concentration of emissions in the air at particular receptor (e.g., parts per million by volume of air, or micrograms per cubic meter of air). State and federal AAQS

were developed to protect the most susceptible population groups from adverse health effects and were established in terms of parts per million or micrograms per cubic meter for the applicable emissions.

Furthermore, as discussed previously, air quality trends for both emissions of NO_X, VOCs, and O_3 (which is a byproduct of NO_X and VOCs) have been trending downward within the air basin even as development has increased over the last several years. Therefore, although the Project would exceed the SCAQMD's numeric thresholds for emissions of NO_X and ROG, this does not in itself constitute a basin-wide increase in health effects related to these pollutants.

As noted in the SCAQMD Brief, the SCAQMD has acknowledged that for criteria pollutants it would be extremely difficult, if not impossible to quantify health impacts for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form. Furthermore, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (April 13, 2015), San Joaquin Valley Air Pollution Control District has acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts. The San Joaquin Valley Air Pollution Control District notes, "…the Air District is simply not equipped to analyze and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area…even for projects with relatively high levels of emissions of criteria pollutant precursor emissions."

As noted above, the Project does not generate anywhere near 6,620 pounds per day of NO_X or 89,190 pounds per day of VOC emissions. Project Operations would generate 204.11 pounds per day of NO_X emissions and 63.28 pounds per day of ROG emissions and would not exceed other criteria pollutant thresholds. Therefore, the Project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, as previously noted, the analysis above includes a localized impact analysis that correlate potential health impacts on a local level to immediately adjacent land uses. Unfortunately, current scientific, technological, and modeling limitations prevent the relation of expected adverse air quality impacts to likely health consequences. For this reason, discussion above explains in meaningful detail why it is not feasible to provide such a numerical analysis, but why health-based impacts are nonetheless anticipated to be less than significant.

Information on health impacts related to exposure to O_3 and particulate matter emissions published by the U.S. EPA and CARB have been summarized above and discussed in the Regulatory Framework section. Health studies are used by these agencies to set the Federal and State AAQS. None of the health-related information can be directly correlated to the pounds/day or tons/year of emissions estimated from a single project.

The Project's exceedance of the SCAQMD's NO_x and ROG mass emissions thresholds will contribute to the formation of ozone in the atmosphere that could potentially contribute to the SCAB's current ozone air quality violation, thus contributing to potential associated health effects in the region. However, ozone is not formed at the location of emission and the quantity of precursor emissions is not proportional to local ozone concentrations. The emission of NO_X and ROG do not directly cause health effects; it is the resulting concentration of criteria pollutants, which is influenced by sunlight, chemical reactions, and transport

(i.e., regional impacts), that are not feasible to model at the Project level.[13] In addition, current SCAQMD and CARB regulations will reduce the emissions below what is shown in Table 4.2-9. However, due to the uncertainty in the relationship between project-level mass emissions and regional ozone formation as well as limitations with currently available technical tools, the resulting health effects associated with the Project cannot be identified. Given this is speculative, it is not considered a significant environmental impact.

As discussed above, neither the SCAQMD nor any other air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions. Information on health impacts related to exposure to ozone and particulate matter emissions published by the U.S. EPA and CARB have been summarized above and discussed in the Regulatory Framework section. Health studies are used by these agencies to set the Federal and State AAQS. None of the health-related information can be directly correlated to the pounds/day or tons/year of emissions estimated from a single, proposed project. Therefore, without thresholds and standards there is no way to ascertain if there is a significant environmental impact.

Operations Localized Emissions Summary

According to the SCAQMD localized significance threshold methodology, LSTs will apply to the operational phase of a Project only if the Project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). The Project does not include such uses. Therefore, in the case of the Project, the operational phase LST protocol does not need to be applied.

Feasible mitigation measures are proposed to lessen the severity of impacts; however, the residual significance of this impact would be significant and unavoidable.

MITIGATION MEASURES

MM AQ-1: Prior to issuance of any Grading Permit, the City Engineer and the Building Official shall confirm that the Grading Plan, Building Plans, and specifications that, in compliance with then-current SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the SCAQMD's Rules and Regulations. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Implementation of the following measures will reduce short-term fugitive dust impacts on nearby sensitive receptors:

[13] As noted in the San Joaquin Valley Air Pollution Control District (SJVAPCD) Amicus Curiae Brief for *Sierra Club v. County of Fresno,* the computer models used to simulate and predict and attainment date for ozone or particulate matter NAAQS are based on regional inputs, such as regional inventories of precursor pollutants (NO_X, SO_X, and VOCs) and atmospheric chemistry and meteorology. The models simulate future ozone or PM levels based on predicted changes in precursor emissions region wide. The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the NAAQS attainment date. Rather, the air district modeling and planning strategy is regional in nature and based on the extent to which all of emission-generating sources (current and future) must be controlled in order to reach attainment.

- All active portions of the construction site shall be watered every three hours during daily construction activities and when dust is observed migrating from the Project site to prevent excessive amounts of dust.
- Pave or apply water every three hours during daily construction activities or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas. More frequent watering shall occur if dust is observed migrating from the site during site disturbance.
- Any on-site stockpiles of debris or on-site haul roads, dirt, or other dusty material shall be enclosed, covered, or watered three times daily, or non-toxic soil binders shall be applied.
- All grading and excavation operations shall be suspended when wind speeds exceed 25 mph.
- Disturbed areas shall be replaced with ground cover or paved immediately after construction is completed in the affected area.
- Track-out devices such as gravel bed track-out aprons (three inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) shall be installed to reduce mud/dirt track-out from unpaved truck exit routes. Alternatively, a wheel washer shall be used at truck exit routes.
- On-site vehicle speed shall be limited to 15 mph on unpaved roads.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site.
- Reroute construction trucks away from congested streets or sensitive receptor areas.

MM AQ-2: All trucks that are to haul excavated or graded material on-site shall comply with State Vehicle Code Section 23114 (*Spilling Loads on Highways*), with special attention to Sections 23114(b)(F), (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads. Prior to the issuance of grading permits, the Project Applicant shall demonstrate to the City of Murrieta City Engineer how the Project operations subject to that specification during hauling activities shall comply with the provisions set forth in Sections 23114(b)(F), (e)(4) as amended.

MM AQ-3: Prior to issuance of a Grading Permit, the Project Applicant shall indicate on construction plans, to the satisfaction of the Development Services Director, that all Phase 1 and Phase 2 construction equipment meets U.S. EPA Tier 4 Final non-road compression-ignition engine standards or better.

MM AQ-4: Project Applicant shall require by contract specifications that construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in Project construction documents, which shall be reviewed by the City of Murrieta prior to issuance of a grading permit.

MM AQ-5: Project Applicant shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, be turned off when not in use for more than 30 minutes. Diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds shall be turned off when not in use for more than five minutes. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta.

MM AQ-6: Project Applicant shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta.

MM AQ-7: Project Applicant shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to facilitate smooth traffic flow. Contract specifications shall be included in the Project construction documents, which shall be approved by the City of Murrieta.

MM AQ-8: Prior to issuance of building or grading permits, whichever is issued earlier, notification shall be mailed to property owners of all land within 300 feet of a Project site within the Specific Plan providing a schedule for construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager that will be available on-site to monitor construction activities. The construction manager shall be responsible for complying with all Project requirements related to PM_{10} generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contact information for the community liaison and construction manager will be located at the construction office, City Hall, the police department, and a sign on site.

MM AQ-9: Project Applicant shall require by contract specifications that the architectural coating (paint and primer) products used will have a VOC rating of 10 grams per liter or less. Such products are considered "super-compliant" by the SCAQMD. Contract specifications shall be included in the Project construction documents, which shall be reviewed and approved by the City of Murrieta. More information about super-compliant architectural coatings, including a list of super-compliant coatings manufactures, can be found on the SCAQMD's website at:

http://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings.

MM AQ-10: Project Applicant shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the Project construction documents, which shall be reviewed and approved by the City of Murrieta.

MM AQ-11: Project Applicant shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the

Project construction documents, which shall be reviewed and approved by the City of Murrieta.

MM AQ-12: The Project Applicant or its designee shall submit a weekly report to the City that demonstrates compliance with MM AQ-1 through MM AQ-11 and MM AQ-13.

Impact 4.2-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

Carbon Monoxide Hot-Spots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.). The SCAQMD requires a quantified assessment of CO hot-spots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service (LOS) D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot-spots are typically produced at intersections.

The City Murrieta is located in the SCAB, which is designated as a serious/maintenance area for the Federal CO standards and an attainment area for state standards. However, CO emissions have continued to decline and the SCAB was re-designated as attainment in 2007, and is no longer addressed in the SCAQMD's AQMP. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for the SCAQMD's 2003 AQMP. The 2003 AQMP is the most recent AQMP that addresses CO concentrations. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the SCAB and will likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the Project, since it represents a worst-case scenario with heavy traffic volumes within the SCAB.

As a reference, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles, CA experienced the highest CO concentration (4.6 ppm), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day (vpd). Since CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots will not be experienced at any intersections within the City of Murrieta near the Project site. Following Project buildout, the intersection with the highest volume will be the Scott Road/Antelope Road intersection which will experience a peak P.M. volume of 5,974 vehicles (approximately 60,000 daily vehicles), far below the 100,000 experienced at the Wilshire Boulevard/Veteran Avenue intersection. Therefore, impacts will be less than significant in this regard.

Diesel Particulate Matter

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about five percent of total DPM. It should be noted that CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan (DRRP), the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road On-Line Reporting System (DOORS). The PERP and DOORS programs allow owners or operators of portable engines and certain other types of equipment to register their units in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

Toxic Air Contaminants

Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC known to contain carcinogenic compounds by CARB in 1998. Construction of the Project will result in the short-term generation of DPM emissions from the use of off-road diesel equipment and from construction material deliveries using on-road heavy-duty diesel trucks.

The dose to which receptors are exposed is the primary factor affecting health risk from TACs. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. According to the Office of Environmental Health Hazard Assessment (OEHHA), HRAs, which determine the health risk relative to exposure of sensitive receptors to TAC emissions, dose should be based on a 24 hours per day, 7 days per week, 365 days per year, 30-year exposure period (i.e., chronic lifetime) when assessing TACs (such as DPM) that have cancer or chronic non-cancer health effects.[14]

To prevent future residents from being exposed to TAC, CARB recommends avoiding the construction of new sensitive land uses such as residences within 500 feet of a freeway, urban roads with 100,000 vpd, or rural roads with 50,000 vpd. The Project site is located adjacent to the I-215 freeway and the nearest proposed sensitive land use are the up to 193 multi-family residential units proposed for construction during Phase 2 (in Planning Area [PA] 8). City GP Policy AQ 2.2 similarly has a policy of avoiding placing sensitive receptors within 500 feet of a freeway.

An HRA was prepared for the Project to evaluate potential health risks associated with TAC including DPM coming from I-215 near the Project site. This analysis was prepared in accordance with the requirements of the SCAQMD and guidance from the OEHHA to determine if significant health risks are likely to occur from the Project.

To determine whether or not a proposed project would cause a significant effect on the environment involving generation of air toxic emissions, the impact of the project must be determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. While the final determination of impact significance is within the purview of the Lead Agency pursuant to the State CEQA Guidelines, the SCAQMD recommends that the following thresholds be used by lead agencies in determining whether a proposed project is significant. If the Lead Agency finds that the

[14] California OEHHA (2015). *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments.* Accessible at https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

proposed project has the potential to exceed these thresholds, the project should be considered significant. The thresholds for air toxic emissions are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of one in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to air toxic emissions. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulative impact. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer risk that is in addition to any cancer risk borne by a person not exposed to these air toxics.

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). A REL is a concentration at or below which adverse health effects are not likely to occur. A hazard index less of than one means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than one are considered less than significant.

As shown in Table 4.2-10, *Cancer Health Risk*, after incorporation of MM AQ-13 (see page 4.2-40), the highest calculated carcinogenic risk or Maximum Individual Cancer Risk (MICR) from DPM from I-215 on the Project site is 8.58 per million for the residential 30-year exposure and 2.36 per million for the worker 25-year exposure. The health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 30-year residential and 25-year worker exposure scenario per OEHHA and SCAQMD guidance. Therefore, impacts related to cancer risk and PM_{10} concentrations from diesel truck traffic along I-215 will be less than significant with implementation of MM AQ-13 (see page 4.2-40).

Table 4.2-10: Cancer Health Risk

Sensitive Receptor[1]	Distance West from I-215 (feet)[2]	Unmitigated Residential Maximum Individual Cancer Risk (Risk per Million)[1,3]	Mitigated Residential Maximum Individual Cancer Risk (Risk per Million)[1,3]	Worker Maximum Individual Cancer Risk (Risk per Million)[1,4]	Exceeds Significance Threshold of 10 after mitigation?
PMI (R_1676)	100	33	8.58	2.36	No
R_959	500	10	2.62	0.72	No

Notes:
1. The point of maximum impact, sensitive receptor R_1676 (UTM NAD83 Zone 11N X= 484076.94, Y= 3720105.18) shows the worst-case emissions and the maximum individual cancer risk on the Project site. Sensitive receptor R_959 (UTM NAD83 Zone 11N X= 483976.94, Y= 3719555.18) was selected because of its unmitigated cancer risk of 10, which is the threshold of significance for cancer risk, and sensitive receptors farther away to the west will have a cancer risk of less than 10.
2. The distances west from I-215 are based off AERMOD modeling results, the HARP2 Risk Analysis tool, and Google Earth (2018).
3. Refer to MM AQ-13, below.
4. The conservative maximum individual cancer risk for workers at the point of maximum impact shows a health risk impact less than the threshold of 10, therefore, mitigation is not needed for commercial buildings with workers.

Source: MBI. (2018). *Air Quality Greenhouse Gas Assessment for Murrieta Hills Specific Plan Amendment*. Santa Ana, CA. (EIR Appendix 9.2.1).

Based on the Project-specific HRA (contained in Appendix 9.2.1, *Air Quality/Greenhouse Gas Assessment* and summarized above in Table 4.2-10), health risk impacts to sensitive receptors within PA 8 could be mitigated through various Project design features noted in MM AQ-13 below. However, in order to ensure consistency with City of Murrieta GP Policy AQ 2.2, the Project avoids placement of residential units within 500 feet of I-215, which does not require the physical design solutions noted in MM AQ-13 below. The Project Applicant is proposing a Mixed-Use development for PA 8 that will allow for multi-family residential uses beyond 500 feet from the freeway, and a mix of retail, professional office, and service-oriented businesses use within 500 feet of the freeway. The mitigation measures in Appendix 9.2.1 have therefore been modified with the PA 8 Mixed-Use planning area and the exclusion of homes, schools, childcare and eldercare facilities, and health care facilities use within 500 feet of the freeway.

MITIGATION MEASURES

MM AQ-13: PA 8 has been planned to exclude residential or other sensitive land uses within 500 feet of the freeway as part of a Mixed-Use land use designation, consistent with City of Murrieta GP Policy AQ 2.2. Should the City's GP Policy be changed, or the City otherwise allow for sensitive uses within 500 feet of the freeway, the following mitigation measures shall be reflected on PA 8 development applications including building permits and landscaping plans. The following techniques to reduce cancer risk shall be implemented in the proposed project:

a) **Residential HVAC within 500 feet of I-215 Freeway**. Residential development proposed within 500 feet of the I-215 Freeway shall install a sealed HVAC system in conjunction with a MERV 13 or higher rated filter. The sealed air system will be designed so that all ambient air introduced into the interior living space would be filtered through MERV 13 or higher rated filters to remove DPM and other particulate matter. The MERV 13 or higher rated filter is designed to remove approximately 74 percent of particulates of 0.3 microns or larger in size from the ambient air that is introduced to the system. Therefore, a 74 percent reduction of particulate matter is anticipated with respect to this measure. The installation of the filters shall be confirmed by the City's Building Official prior to issuance of certificate of occupancy. Additionally, the following measures shall be implemented:

   i) The potential health impacts shall be disclosed to prospective residents within Planning Area 8 regarding living in close proximity of I-215 and the reduced effectiveness of air filtration system when windows are open and/or when residents are outdoor (e.g., in the common areas);

   ii) The filters would need to be changed semi-annually and the building or leasing operator and/or the Homeowners Association of the multi-family buildings would be required to provide a report to the City's building official or designee, semi-annually, to ensure compliance;

   iii) Information shall be provided to residents on where the MERV filters can be purchased upon lease signing;

   iv) Information shall be provided to residents on the potential increase in energy costs for running the HVAC system to prospective residents; and

v) Information shall be provided to residents on the recommended schedules (e.g., once a year or every six months) for replacing the enhanced filtration units.

b) **Installation of Air Intakes for Residential HVAC units**. For all residential buildings proposed within 500 feet of the I-215 freeway, residential building air intakes shall be installed on the façade furthest away from the I-215 freeway. This will ensure that air drawn into the building has lower possible particulate concentrations.

c) **PA 8 Perimeter Landscaping**. The landscaping plan shall be augmented to include the use of a tiered vegetation scheme along the eastern project boundaries of Planning Area 8, with a preference for Evergreens over deciduous species. Tree selection shall match the tree's water requirements with the irrigation anticipated for the area.

Impact 4.2-4: Would the Project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Level of Significance: Less Than Significant Impact

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project does not include any uses identified by the SCAQMD as being associated with odors.

CONSTRUCTION

The primary source of odor anticipated from the construction of the Project will be exhaust emissions from the diesel equipment and haul (soil import/export) trucks. However, as noted in the Impact 4.2-3 discussion above, emissions from diesel construction equipment and vehicles will be temporary and will not be expected to cause any odor issues that will affect a substantial number of people. Therefore, the odors impact related to construction will be less than significant.

OPERATIONS

Project implementation will result in the development of residential, commercial and park land uses. Residential development and park land do not typically result in a source of nuisance odors associated with operation. The commercial development has not been specified, however, likely uses may include restaurants, convenience grocery, gas station, and other services. None of these likely uses are included on the CARB's list of common sources of odor complaints. The Project does not propose any specific new sources of odor that could affect sensitive receptors. Therefore, the Project will not create or result in objectionable odors that may affect a substantial number of people. Therefore, a less than significant impact will occur.

MITIGATION MEASURES

No mitigation is required.

4.2.6 CUMULATIVE IMPACTS

The SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions, nor does it provide separate methodologies or thresholds of significance to be used to assess

cumulative construction impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts. Therefore, individual development projects that generate construction-related or operational emissions that exceed the SCAQMD recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is nonattainment.

SHORT-TERM CONSTRUCTION EMISSIONS

SCAQMD thresholds for criteria pollutants are established for individual development projects, and it is assumed that some of the projects that will be implemented under the Specific Plan could individually exceed the SCAQMD thresholds. Based on the program-level construction analysis above, construction - related emissions associated with future potential development projects in the Project area will not exceed thresholds and therefore will not be "cumulatively considerable." Implementation of MMs AQ-1 to AQ-13 (beginning on page 4.2-34) will further reduce construction-related air quality impacts to a less than significant level. Construction of future development and infrastructure projects under the Specific Plan will be required to comply with the applicable SCAQMD rules and regulations, SCAQMD AQMP, and the City of Murrieta plans and policies. These measures call for the maintenance of construction equipment, the use of non-polluting and non-toxic building equipment, and minimizing fugitive dust.

LONG-TERM OPERATIONAL EMISSIONS

New development under the Specific Plan, combined with other anticipated future development in the region, will contribute to a cumulative annual increase in regional air pollutant emissions. Table 4.2-9 depicts the estimated mobile and stationary source emissions associated with the potential development from Project implementation. As shown in Table 4.2-9, the emissions from development of the Project area exceed the SCAQMD thresholds for ROG and NO_X, resulting in a significant impact. In accordance with SCAQMD methodology, any project that cannot be mitigated to a level of less than significant is also significant on a cumulative basis. Due to the exceedance of the operational thresholds, the Project will potentially conflict with the 2016 AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants. Both of these pollutants are precursors for ozone for which SCAQMD is currently an extreme nonattainment area. Operational impacts associated with the Project will be cumulatively considerable. Therefore, the Project's contribution to regional pollutant concentrations will be cumulatively considerable. Notwithstanding the significance of the Project's air quality impacts, Project impacts are substantially less than what is allowed under the currently approved Specific Plan (see Section 5, *Alternatives to the Proposed Project*).

4.2.7 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the Project, significant unavoidable impacts will occur in the following areas:

- **Project-Related Operational Emissions.** Despite implementation of mitigation measures, the Project's operational emissions will remain above SCAQMD thresholds for ROG and NO_X resulting in a significant and unavoidable impact.
- **AQMP Consistency.** Although the Project's long-term influence will be consistent with the 2016 AQMP and SCAG's goals and policies, the Projects exceedance of operation ROG and NO_X

thresholds will potentially result in a long-term impact on the region's ability to meet state and federal air quality standards. Although construction emissions will not exceed SCAQMD thresholds, impacts associated with AQMP compliance will be significant and unavoidable due to Project implementation. Furthermore, the proposed Project would require a General Plan amendment and zone change, which was not previously considered during the SCAG's growth forecasts. The annexation into the City of Murrieta and changing the land uses to allow for a greater population density than what was anticipated in the 2016 AQMP, therefore the Project would exceed the buildout assumptions in the AQMP.

- **Cumulative Emissions.** As stated above, operational activities will create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for NO_x and ROG. Implementation of MM AQ-1 will (see page 4.2-34) reduce impacts; however, a significant and unavoidable impact will remain.

4.2.8 REFERENCES

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4.3 BIOLOGICAL RESOURCES

4.3.1 INTRODUCTION

This section examines effects on biological resources that may result from implementation of the Murrieta Hills Specific Plan Amendment (MHSPA or Project). The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts of the Project, and recommends measures to reduce or avoid significant impacts anticipated from Project construction and operation. In addition, existing laws and regulations relevant to biological resources are described. In some cases, compliance with these existing laws and regulations will serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Project.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following significance thresholds are evaluated in this section:

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

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

c) Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

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

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

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

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As discussed in Section 4.3.5, *Impacts and Mitigation Measures* below, impacts are less than significant or less than significant with mitigation incorporated.

The setting, context, and impact analysis in this section are based primarily on the biological resource studies that are contained in Appendix 9.3, *Biological Resources Reports*, including: (1) *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis* (HANS), September 2019, prepared by HELIX Environmental Planning Inc. (HELIX); (2) *Murrieta Hills Project Determination of Biologically Superior or Equivalent Preservation*, September 2019, prepared by HELIX; (3) *Murrieta Hills*

Project General Biological Resources Assessment, September 2019, prepared by HELIX; (4) *Minor Amendment Request for Inclusion of Warm Springs Parkway and McElwain Road as Covered Activities Under the Multiple Species Habitat Conservation Plan*, September 2017, prepared by HELIX; (5) *Memorandum - Murrieta Hills Fuel Modification Clearing Adjacent to Riverine Resources*, Part 1 dated March 2019 and Part 2 dated July 2019, both parts prepared by HELIX; and (6) the August 2019 *RCA Joint Project Review (JPR) 09-02-17-01*, prepared by the Western Riverside County Regional Conservation Authority (RCA). These studies are in Appendix 9.3 and include biological and habitat surveys and research of existing data pertaining to the study area and evaluate the Project site as well as the vicinity of the Project (study area) including off-site infrastructure improvements impact areas ("off-site access area"),[1] to develop a baseline for current conditions of the study area.

Field surveys were conducted to identify any plant communities, listed plant species, listed wildlife species, and wildlife habitats present on the Project site, as well as off-site for the Keller Road drainage outfall (less than 0.1 acre), located north of Keller Road, west of Zeiders Road. The off-site access area for the McElwain Road extension was not surveyed due to a lack of right-of-entry from the property owner. Therefore, mitigation measures require surveys and studies of the off-site access area once right-of-entry is acquired. See Mitigation Measures (MM) BIO-2 through 4 (see pages 4.3-46 to -47), MM BIO-7 (see page 4.3-54), and MM BIO-8 (see page 4.3-54). In addition to the field surveys, literature reviews were conducted to determine if any recent records of sensitive biological resources have been recorded on or in the vicinity of the Project site. The natural inventories included resources identified in the California Natural Diversity Database (CNDDB); California Department of Fish and Wildlife (CDFW) Special Animals List; sensitive plant species habitats and blooming periods taken from Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP); soils classifications obtained from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS); the California Native Plant Society (CNPS) online database; and HELIX in-house database were searched to obtain a list of sensitive animal and plant species with potential to occur on the property.

Information from the literature reviews and databases was used to generate a list of special-status plant and animal species that may have the potential to occur within the Project site and adjacent areas. For the purposes of this assessment, special-status species are defined as plants or animals that:

- Are designated as either rare, threatened, or endangered by CDFW or the U.S. Fish and Wildlife Service (USFWS), and are protected under either the California or Federal Endangered Species Act (ESA);
- Are candidate species being considered or proposed for listing under these same acts;
- Are considered Species of Special Concern by CDFW;
- Are fully protected by the California State Fish and Game Code (FGC), Sections 3511, 4700, 5050, or 5515; or
- Are classified as List 1, 2, 3, or 4 by CNPS[2].

[1] The "off-site access area" as used here and in the technical studies refers to the McElwain Road extension. An additional, very small, off-site area would occur along the north side of Keller Road, associated with drainage improvements. This acreage is noted in the applicable tables that follow.

[2] For an explanation of CNPS status codes, see Appendix C: *Explanation of Status Codes for Plan and Animal Species* of the *Murrieta Hills Project General Biological Resources Assessment* located in EIR Appendix 9.3.3.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project is proposed for annexation into the City of Murrieta. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Existing regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

Off-site improvements or additions are included in the scope of the Project and include the extension of McElwain Road; drainage improvements on the north side of Keller Road, west of Zeiders Road; and utility improvements within Keller Road and Zeiders Road.

For the I-215/Keller Road interchange, a separate project, the developer is dedicating the necessary right-of-way (ROW) on the southwest corner of the intersection of Keller Road and I-215 to aid in facilitating the construction of the new interchange.

BIOLOGICAL FIELD SURVEYS

HELIX conducted biological resources assessments of the Project site in winter 2005, spring 2006, fall 2007, and spring/summer 2008. Rare plant surveys were conducted in May and June 2006, April and June 2008, and May 2012. Burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow billed cuckoo (*Coccyzus americanus occidentalis*) presence/absence surveys were conducted in spring and summer 2006; least Bell's vireo and burrowing owl surveys were conducted in 2008 and 2012; and a burrowing owl survey was conducted again in 2018. A jurisdictional delineation was conducted in 2007; updated in 2007, 2008, 2012, 2013, and 2018; and verified by CDFW in 2016, and Regional Water Quality Control Board (RWQCB) and U.S. Army Corps of Engineers (USACE) in 2018. Additional site surveys were conducted in 2006, 2007, 2008, 2012, 2013, 2016, 2018, and 2019 to evaluate the Riparian/Riverine resources that occur on the property.

Despite the age of some of these surveys, they remain valid since the site has not experienced any new developments or undergone significant land use changes since they were conducted. Any relevant studies and/or surveys will be updated as required by the Project's mitigation measures prior to the commencement of construction. Furthermore, a site visit was conducted by HELIX in March 2019 to photo-document areas mapped as streambed and characterized as "unvegetated drainages" that occur in fuel modification zones (Appendix 9.3.5). A follow-up memo was completed in July 2019 address proposed fuel modification planned in proximity of the Riverine Resources for Project and provide an assessment of potential impacts to certain Riverine Resources (Appendix 9.3.6). During all of HELIX's surveys, focused and incidental observations of plant and animal species were noted. See Table 4.3-1, *Murrieta Hills Survey Summary* for a summary of the surveys conducted for the Project site.

Table 4.3-1: Murrieta Hills Survey Summary

Survey	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Biological Resources Assessments	X	X	X	X											
Sensitive/Rare Plant		X		X				X							X*
Riparian/Riverine Resources		X	X	X				X	X			X		X	X*
Jurisdictional Delineation			X	X				X	X			X		X	X*
Least Bell's vireo		X		X				X							
Southwestern willow flycatcher		X													
Western Yellow-billed cuckoo		X													
Burrowing Owl		X		X				X						X	

* Keller Road drainage off-site area only
Sources: (1) HELIX. (2019). *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis*; (2) HELIX. (2019). *Murrieta Hills Project Determination of Biologically Superior or Equivalent Preservation*.; (3) HELIX. (2019). Murrieta Hills Project General Biological Resources Assessment.

VEGETATION MAPPING

The vegetation communities were mapped in accordance with the MSHCP. The MSHCP vegetation map incorporates 50 Vegetation Community classifications; however, for purposes of MSHCP planning and analysis, the 50 classifications were collapsed to 14[3].

- Montane Coniferous Forest
- Woodland and Forests
- Coastal Sage Scrub
- Riversidean Alluvial Fan Sage Scrub
- Desert Scrub
- Chaparral
- Playas and Vernal Pools
- Grassland
- Riparian Scrub, Woodland Forest
- Meadows and Marshes
- Cismontane Alkali Marsh

[3] Riverside County. (ND). *MSCHP Volume 1, Section 2, Table 2-1: Summary of Collapsed and Uncollapsed Vegetation Communities Classifications*. Retrieved from Riverside County Website: https://rctlma.org/Portals/0/mshcp/volume1/sec2.html#2.1.3. Accessed September 3, 2019.

- Water
- Developed/Disturbed Land
- Agricultural Land

Vegetation Communities may be considered within four broad categories: sensitive upland, wetland, forest, and agriculture. Sensitive upland communities include chaparral, coastal sage scrub, desert scrub, grassland and Riversidean alluvial fan sage scrub. Wetland communities include meadows and marshes, playas and vernal pools, riparian scrub/woodland/forest, cismontane alkali marsh and water. Forest communities include montane coniferous forest, and woodlands and forests.[4]

Plants were identified according to *The Jepson Manual: Higher Plants of California* for the general biological resource assessment.

FIRE PROTECTION PLAN AND FUEL MODIFICATION ZONE

A Fire Protection Technical Report (FPTR) was prepared by Dudek in August 2019, which can be found in Appendix 9.11.1. This report details measures for fire protection which meet or exceed the most recent Murrieta Fire Code or provides compensating measures resulting in same practical effect. The Project will be required to meet the applicable codes that are in place at time of construction, unless they are less restrictive than those identified in the FPTR or have been mitigated through alternative materials and methods. The Project site fire risk analysis resulted in the determination that wildfire has occurred and will likely occur near the Project site again. However, the Project will include ignition-resistant landscapes and structures and firefighters will have needed defensible space and access with implementation of specified measures. Project areas will include Fuel Modification Zones (FMZs) that will be suitable to protect the Project from anticipated wildfires that may burn in adjacent areas.

A two-part FMZ Memo was provided by HELIX in 2019, which can be found in Appendices 9.3.5 and 9.3.6. This memo addresses proposed fuel modification planned in proximity of the Riverine Resources for the Project and provides an assessment of potential impacts to certain Riverine Resources.

FMZs are designed to provide buffers at perimeter areas of projects or between structures and wildland fuels to reduce fuel available to wildfire. Fuel modification or thinning completed in accordance with the Project's FPTR includes the following three general classifications: Zone 1A, Zone 1, and Zone 2.

- Zone 1A is the first 20 feet (rear yard) from the structure to the lot line for those lots adjacent to natural open space around or within the development footprint. Homeowners will be responsible for ensuring that rear-yard landscaping is compliant with the FPTR.
- Zone 1 is all public and private areas located between the lot line and 50 feet outward. These areas may be located on public slopes, private open-space lots, public streets, and/or private yards. All highly flammable native vegetation, especially plant species found on the Prohibited List (Appendix F of FPTR; EIR Appendix 9.11.1) shall be removed. This zone will be planted with drought-tolerant, less flammable plants from the Murrieta Hills Project Plant Palette (Appendix E of FPTR; EIR Appendix 9.11.1).

[4] Riverside County. (ND). *MSCHP Volume 1, Section 9.1: Overall Conservation and Impact Estimates of Vegetation Communities*. Retrieved from Riverside County Website: https://rctlma.org/Portals/0/mshcp/volume1/sec9.html#9.1. Accessed September 3, 2019.

- Zone 2 is all public and private areas located between the outside edge of Zone 1 and 100 feet outward. These areas may be located on public slopes, private open-space lots, public streets, and/or private yards. Zone 2 represents a 50 percent thinning zone.
- Internal Oak-Dominated Open Space (sometimes referred to as Zone 3) is the linear nature park (LNP) which will be maintained as an FMZ through annual maintenance of non-jurisdictional areas so that vegetation does not exceed a height of four inches. There are areas within the LNP that are jurisdictionally protected by the CDFW and will be left unmaintained. Should mortality of oaks and or willow trees occur in these jurisdictional areas, the tree(s) will be removed or chipped on site to avoid the accumulation of dead fuels. Non-jurisdictional woodlands within the LNP that will also be preserved include variable density oak trees that will be maintained in a park-like condition with raised canopies and removal of understory ladder fuels[5] (vegetation).

Within any FMZ, all plant material listed in the FPTR's prohibited plant list will be prohibited. These plant prohibitions apply to both public and private (residential yards) areas and will be enforced by the HOA in accordance with the requirements of the FPTR (Appendix 9.11.1).

4.3.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

Note that for the biological analyses, the Project site is described as 973.69 acres in size. This is due to including 1.9 acres of land located around the reservoir located just off-site adjacent to the north-central portion of the Project site and all of the Keller Road ROW. The Project also includes an 18.5-acre off-site access area for the required circulation improvements that will connect the Project to Clinton Keith Road via McElwain Road, along with a small (less than 0.1 acre) off-site impact area along Keller Road for an

[5] Plant material that can carry a fire burning in low-growing vegetation to taller vegetation is called ladder fuel. Examples of ladder fuels include low-lying tree branches and shrubs, climbing vines, and tree-form shrubs underneath the canopy of a large tree.

outfall structure. McElwain Road has been added as an MSHCP Covered Activity through Minor Amendment No. 2017-01 (RCA 2018).[6]

JURISDICTIONAL DELINEATION

HELIX biologists Jack Easton and Doug Allen conducted a jurisdictional delineation in 2007. The assessment was updated with data collected by HELIX biologist Rob Hogenauer in 2007, 2008, and 2012, and with information collected by Mr. Larry Sward in 2013. The delineation was updated and finalized in 2016 by Mr. Sward. The delineation was verified in the field by CDFW on June 29, 2016, by the RWQCB on May 30, 2018, and the USACE on July 12, 2018. The area for the off-site Keller Road outfall structure was delineated by Mr. Hogenauer on May 15, 2019. The off-site access area for the McElwain Road extension has not yet been formally delineated due to a lack of right-of-entry by the property owner.[7] Per MM BIO-8 (see page 4.3-54), a jurisdictional delineation of the McElwain Road off-site access area will be conducted.

Areas were determined to be non-wetland Waters of the U.S. (WUS) if there was evidence of regular surface flow (e.g., bed and bank) but neither the vegetation nor soils criterion was met. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 Code of Federal Regulations (CFR) Section 329.11 as "the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas."[8] The USACE has issued further guidance on the OHWM, which was also used for this delineation. This additional OHWM guidance includes: the prioritization of physical characteristics which are reliable indicators of the OHWM; a list of physical characteristics to be considered during OHWM determination; the allowance for the use of alternative means to determine the OHWM if physical characteristics are inconclusive; the exclusion of extraordinary water event data such as major flooding and storm surges, from OHWM consideration; required documentation of all physical characteristics used for OHWM, CWA, and/or RHA jurisdiction; and the complete documentation of information that substantiates USACE's decision, at least using the standardized jurisdictional determination information sheet provided to districts.[9] The OHWM widths were measured to the nearest foot at various locations along each channel.

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. Jurisdictional boundaries include watercourses having a surface or subsurface flow that supports riparian vegetation" (14 California Code of Regulations [CCR] Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and

[6] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment*. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
[7] HELIX. (2019). *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis*. La Mesa, CA: HELIX. EIR Appendix 9.3.1.
[8] U.S. CFR (2018). Title 33, Section 329.11. Retrieved from https://www.govinfo.gov/content/pkg/CFR-2017-title33-vol3/pdf/CFR-2017-title33-vol3-sec329-11.pdf. Accessed on August 15, 2019.
[9] USACE. (2005). *Regulatory Guidance Letter: Ordinary High Water Mark Identification.* Pages 1 – 4. Washington, DC: Don T Riley. Retrieved from USACE Website: https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll9/id/1253. Accessed August 3, 2019.

alluvial fan sage scrub). Streambed widths were measured to the nearest foot at various locations along the channels.[10]

An aerial photograph and topography-based delineation of the off-site access area for the McElwain Road extension indicates that the proposed road alignment crosses at least two ephemeral drainages. However, inspections of the site itself were not permitted by the current landowner. Per MM BIO-8 (see page 4.3-54), a jurisdictional delineation of the McElwain Road off-site access area will be conducted.

LEAST BELL'S VIREO

Surveys for the least Bell's vireo were conducted in 2006, 2008, and 2012. HELIX biologist Deborah Leonard performed a habitat assessment in 2006, which determined that the property included habitat with potential to support the least Bell's vireo. These areas consisted of riparian scrub vegetation dominated by shrubby willows (*Salix* spp.) and mule fat (*Baccharis salicifolia*). A small patch of coast live oak woodland was also surveyed since it is immediately adjacent to the riparian scrub. The rest of the riparian habitat on-site consists of coast live oak riparian woodland and forest that do not have the vegetative components or structure necessary for the vireo.

The 2006 survey consisted of eight individual surveys conducted between May 18 and July 31, 2006, by HELIX biologists Ms. Leonard, Kathy Pettigrew, and Shelby Howard. The 2008 protocol surveys were conducted between June 20 and July 30, 2008, by HELIX biologists Mr. Hogenauer and Zsolt Kahancza. The 2012 protocol surveys were conducted between April 29 and July 12, 2012, by Mr. Hogenauer. The amount of potential suitable habitat has decreased significantly since the elimination of the nursery on-site, which was providing summer nuisance flows that contributed to riparian vegetation along the main drainage. Upon review of historic aerial imagery using Google Earth, it appears that nursery operations ceased in 2012.

SOUTHWESTERN WILLOW FLYCATCHER AND WESTERN YELLOW-BILLED CUCKOO

Ms. Pettigrew performed a habitat assessment in 2006, which determined that the Project site included habitat with potential to support the southwestern willow flycatcher, but does not include habitat with potential to support western yellow-billed cuckoo. The survey area for the southwestern willow flycatcher included the areas surveyed for the vireo. The survey was conducted by HELIX permitted biologists Ms. Howard and Ms. Pettigrew with HELIX biologists Ms. Leonard, Roger Ditrick, and Heather Haney as supervised individuals.

It should be noted that the amount of potential suitable habitat has decreased significantly since the elimination of the nursery on-site, which was providing summer nuisance flows that contributed to riparian vegetation along the main drainage. The limited riparian habitat remaining on-site is not considered potential suitable for the southwestern willow flycatcher.

FAIRY SHRIMP

There are three species of sensitive fairy shrimp that occur in western Riverside County: Riverside fairy shrimp (*Streptocephalus woottoni*), Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*), and vernal

[10] HELIX. (2019). *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis*. La Mesa, CA: HELIX. EIR Appendix 9.3.1.

pool fairy shrimp (*Branchinecta lynchi*).[11] The Project site was surveyed for habitat (such as vernal pools or ephemeral ponds) that could support fairy shrimp. Indicators of potential fairy shrimp habitat that were searched for included basins, ruts, cracked mud, algal mats, and drift lines. No potential suitable habitat occurs within the Project study area or off-site areas for these species, and no focused surveys were conducted or are required.

RIPARIAN/RIVERINE PLANTS

The MSHCP lists 23 sensitive plant species that have potential to occur in Riparian/Riverine and Vernal Pool habitats. These species are:

- California black walnut (*Juglans californica* var. *californica*),
- Engelmann oak (*Quercus engelmannii*),
- Coulter's matilija poppy (*Romneya coulteri*),
- San Miguel savory (*Satureja chandleri*),
- spreading navarretia (*Navarretia fossalis*),
- graceful tarplant (*Holocarpha virgata* ssp. *elongata*),
- California Orcutt grass (*Orcuttia californica*),
- prostrate navarretia (*Navarretia prostrata*),
- San Diego button-celery (*Eryngium aristulatum* var. *parishii*),
- Orcutt's brodiaea (*Brodiaea orcuttii*),
- thread-leaved brodiaea (*Brodiaea filifolia*),
- Fish's milkwort (*Polygala cornuta* var. *fishiae*),
- lemon lily (*Lilium parryi*),
- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*),
- ocellated Humboldt lily (*L. humboldtii* ssp. *ocellatum*),
- Mojave tarplant (*Deinandra mohavensis*),
- vernal barley (*Hordeum intercedens*),
- Parish's meadowfoam (*Limnanthes gracilis* var. *parishii*),
- slender-horned spineflower (*Dodecahema leptoceras*),
- Santa Ana River woolly-star (*Eriastrum densifolium* spp. *sanctorum*),
- Brand's phacelia (*Phacelia stellaris*),
- mud nama (*Nama stenocarpum*), and
- smooth tarplant (*Centromadia pungens*).[12]

[11] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* La Mesa, CA: HELIX. EIR Appendix 9.3.3.
[12] Ibid.

Rare plant surveys performed for the Project included surveying for Riparian/Riverine-associated plant species shown above. The 2007 wetland delineation and Riparian/Riverine habitat assessment discussed above also included searching for the aforementioned species. If these species occur, then they are required to be mapped and avoided. If avoidance is not feasible, then a Determination of Biologically Equivalent or Superior Preservation (DBESP) is required to quantify impacts and establish mitigation for the impacted species. None of the 23 species was observed on the property, or in the Keller Road outfall area, during the Riparian/Riverine and Vernal Pool habitat assessment and rare plant surveys. A DBESP analysis was prepared for this Project to provide information necessary for the City of Murrieta to determine if the Project meets the MSHCP conservation objectives (Appendix 9.3.2). Based on the DBESP assessment, the Project is consistent with 6.1.2 of the MSCHP, which is discussed in Section 4.3.5.

SOILS

The MSHCP lists nine sensitive soil types as occurring within the MHSPA area. One of the MSHCP sensitive soils, Auld clay, occurs on the Project site. This soil itself is not considered sensitive, but rather the sensitivity is related to its potential as habitat for sensitive plants. The potential rare plant habitat is addressed in the rare plant (Narrow Endemic Plant Species Survey Area [NEPSSA] and Criteria Area Species Survey Area [CASSA]) portions of this document.

In general, six soil types are mapped on the Project site. The Projects site is primarily (70 percent) mapped as Cajalco rocky fine sandy loam. Other soils mapped on the Project site, in approximate decreasing order of occurrence, include Las Posas loam, Cajalco fine sandy loam, Honcut loam, Auld clay, and Las Posas rocky loam.[13] The McElwain Road extension off-site access area is primarily mapped as Cajalco fine sandy loam, Cajalco rocky fine sandy loam, and Cienba rocky sandy loam. The off-site improvement areas, north of Keller Road, are primarily mapped as Cajalco fine sandy loam, Las Posas loam, and Honcut loam.[14] No clay soils are mapped on the off-site access areas.

VEGETATION COMMUNITIES

A total of 12 vegetation communities, plus developed land, occur on the Project site and within the off-site Keller Road outfall and McElwain Road extension access areas; Table 4.3-2, *Existing Vegetation Communities* and Exhibit 4.3-1, *Vegetation Communities*. These communities consist of southern willow scrub, mule fat scrub, southern cottonwood-willow riparian woodland, basin, coast live oak woodland, chaparral, Riversidean sage scrub, coastal sage scrub/chaparral ecotone, non-native grassland, field cropland, exotic (eucalyptus woodland), disturbed, and developed. There are 12.27 acres of Riparian/Riverine habitat and 964.6 acres of upland habitat on-site along with 0.11 acre of Riparian/Riverine habitat and 18.5 acres of upland habitat in the off-site access areas. The Riparian/Riverine habitats mentioned above include 3.17 acres and 0.11 acre of unvegetated streambed, respectively.[15]

[13] Ibid.
[14] USDA NRCS. (2019). Web Soil Survey. Available at https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 3, 2019.
[15] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment*. La Mesa, CA: HELIX. EIR Appendix 9.3.3.

Table 4.3-2: Existing Vegetation Communities

Classification*		On-Site Acreage†	Off-Site Acreage†
Collapsed	**Uncollapsed**		
Riparian scrub	Southern willow scrub	1.54	-
Riparian scrub	Mule fat scrub	0.47	0.03
Riparian woodland	Southern Cottonwood-willow riparian Woodland	0.07	-
Woodland and forests	Coast live oak woodland	13.01	-
Chaparral	Chaparral	701.7	9.9
Coastal sage scrub	Riversidean sage scrub	66.6	1.2
Coastal sage scrub/Chaparral‡	Coastal sage scrub/Chaparral‡	32.0	-
Grassland	Non-native grassland	4.4	1.1
Agricultural land	Field cropland	96.7	-
Developed/Disturbed land	Exotic (Eucalyptus Woodland)	0.3	-
Developed/Disturbed land	Disturbed	55.3	4.7
Developed/Disturbed land	Developed	1.6	1.6
TOTAL		**973.69**	**18.53****

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 5: Existing Vegetation Communities. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
*Collapsed and uncollapsed vegetation communities are terms from MSHCP Table 2-1 and are equivalent to Generalized Category and Specific Sub-Category, respectively.
†Acreage is rounded to the nearest 0.1 except for wetland and Riparian/Riverine habitat that are rounded to the nearest 0.01.
‡Coastal sage scrub/Chaparral is not an MSHCP vegetation community; however, each community that forms this ecotone has an MSHCP vegetation classification.

SOUTHERN WILLOW SCRUB

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat. This habitat occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. The herbaceous understory consists of curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium* var. *canadense*), and western ragweed (*Ambrosia psilostachya*). Frequent flooding maintains this early successional community, preventing succession to a riparian woodland or forest. In the absence of periodic flooding, competition between the willows would intensify as these individuals grow and resources become increasingly scarce. A small percentage of these individuals would survive and form the tree stratum, while most would die or exist as suppressed juveniles in the lower stratum.

On-site, southern willow scrub is scattered among the many drainages located throughout the property. Plant species observed in the willow scrub on-site include arroyo willow (*Salix lasiolepis*), Goodding's black willow (*S. gooddingii*), mule fat, salt cedar (*Tamarix ramosissima*), and curly dock.[16]

MULE FAT SCRUB

The mule fat scrub is a poorly developed, shrubby riparian scrub community dominated by mule fat and interspersed with shrubby willows. This habitat occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. Similar to southern willow scrub, this early

[16] Ibid.

successional community is maintained by frequent flooding, the absence of which would lead to a riparian woodland or forest (Holland, as cited in HELIX 2019c).

On the Project site, mule fat scrub is scattered in a few small pockets along the drainages that occur on-site. Some of the small pockets of mule fat scrub are not mapped. Plants species observed in the mule fat scrub on-site include mule fat, arroyo willow, willow herb (*Epilobium* spp.), and salt cedar.

SOUTHERN COTTONWOOD-WILLOW RIPARIAN WOODLAND

Southern cottonwood-willow riparian woodland is a tall, open, broad-leafed winter-deciduous riparian forest dominated by western cottonwood (*Populus fremontii*) and willows. This habitat occurs along streams. On the Project site, there are two small patches of this habitat dominated by western cottonwood.

COAST LIVE OAK WOODLAND

Coast live oak woodland is an evergreen oak woodland dominated by coast live oak (*Quercus agrifolia*), which reaches 30 to 80 feet in height. In general, the shrub layer is poorly developed but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), laurel sumac (*Malosma laurina*), or blue elderberry (*Sambucus nigra* ssp. *caerulea*) (Holland, as cited in HELIX 2019c). Coast live oak woodland lacks the diversity (cottonwood, willow, sycamore, etc.) present in riparian forest.

On the Project site, coast live oak woodland primarily occurs near the banks of largest drainages within the Salt Creek and Warm Springs Creek watersheds as well as adjacent upland areas. Plant species observed in this community on-site include coast live oak, laurel sumac, poison oak (*Toxicodendron diversilobum*), bromes, giant wild rye (*Elymus condensatus*), and spiny redberry (*Rhamnus crocea*).

CHAPARRAL

This habitat is represented on the Project site in three of the chaparral subcategories (undifferentiated [mixed], chamise [*Adenostoma fasciculatum*], and red shank [*Adenostoma sparsifolium*]) shown in the MSHCP. The sub-associations are described together here as they differ only by the dominant species.

Chaparral consists of broad-leaved sclerophyll shrubs usually between one to three meters tall with occasional patches of bare soil or sage scrub, often with an accumulation of litter. Chaparral is well adapted to repeated fires as many species respond by stump sprouting. Chaparral is the dominant plant on-site covering a large portion of the property. On the Project site, chaparral is dominated by chamise with patches dominated by Hoary-leaved ceanothus (*Ceanothus crassifolius*), red shank, and black sage (*Salvia mellifera*). The chamise and mixed chaparrals dominate the property, with a small patch of redshank chaparral occurring near the center of the property. Other plants found in the chaparral include laurel sumac, blue elderberry, California buckwheat (*Eriogonum fasciculatum*), and scrub oak (*Quercus berberidifolia*).

RIVERSIDEAN SAGE SCRUB

Riversidean sage scrub is a subcategory of coastal sage scrub, a dominant shrub community of California. On-site, it is dominated by low-growing shrubs, primarily California buckwheat, but also includes California sagebrush (*Artemisia californica*), deerweed (*Acmispon glaber*), bromes, and oats (*Avena* spp.). The sage

scrub occurs in a mosaic with chaparral. Having a large quantity of non-native grasses and forbs, disturbed Riversidean sage scrub areas occur in a mosaic with the Riversidean sage scrub areas.

Small amounts of shrub habitat occur on the Project site that do not technically meet the classification criteria for either the coastal sage scrub or chaparral category. These areas, called ecotone, occur as a blending border between the chaparral and sage scrub. The ecotone areas are mapped as coastal sage scrub/chaparral. The Project site contains small patches of sage scrub primarily around disturbed areas.

COASTAL SAGE SCRUB/CHAPARRAL ECOTONE

Coastal sage scrub/Chaparral ecotone is a community that comprises species of each of these communities (described above) but does not specifically match either community. The ecotone community occurs where the two communities are adjacent to one another. This can also be a transitional community as sage scrub gradually is maturing in a chaparral habitat.

NON-NATIVE GRASSLAND

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. Characteristic species include oats, red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*B. diandrus*), ryegrass (*Lolium* sp.), short-pod mustard (*Hirschfeldia incana*), and other mustards (*Brassica* spp.). The non-native grassland on-site occurs in small patches throughout the site in a mosaic with sage scrub and chaparral.

Aerial photography shows that the areas currently containing non-native grassland were once disturbed for agricultural purposes. The majority of the previously disturbed areas now contains sage scrub. A few small patches of grassland similar in species composition to the sage scrub occur in a mosaic with the sage scrub and are not mapped. Species on-site include short-pod mustard, bromes, and oats.

FIELD CROPLAND

Also referred to as agriculture, field cropland is cultivated habitat that has been cleared, disked, or planted with crops. On the Project site, cropland is limited to the disked area in the northeast portion of the site. The disked area in the northeast contains scattered patches with trees or rock outcroppings that are not disked. Trees in this area include coast live oak, Peruvian pepper (*Schinus molle*), and eucalyptus (*Eucalyptus* spp.).

EXOTIC (EUCALYPTUS WOODLAND)

Eucalyptus woodland is a non-native woodland, often planted in as a windrow, or for shade or other purposes. Due to the eucalyptus' allopathic nature, this community typically has little to no understory and is composed entirely of eucalyptus trees.

DISTURBED

Disturbed habitat is generally made up of areas that exhibit signs of recent disturbance. They usually support little vegetation; however, when there is vegetation present it consists of mostly non-native weed species.

Disturbed habitat on-site includes a large area on the southeast portion of the Project site that was cleared of vegetation circa 1990 and then cleared again and graded circa 2005. Additional disturbed habitat

includes unimproved roads that cross the property, off-highway vehicle trails, areas of dumped trash, and the former nursery located near the center of the property. Plant species observed in the disturbed areas include non-native trees such as eucalyptus, Peruvian pepper, athel tamarisk (*Tamarix aphylla*), and olive (*Olea europaea*). The disturbed areas also contain bromes, mustards, and various other plant species similar to the non-native grassland and sage scrub understory.

DEVELOPED

Developed areas consist of areas that have been paved or contain other man-made structures. Developed areas on the Project site include several small structures associated with the abandoned Wright homestead located near the center of the Project site, along with a former landscape nursery site located in the central-west portion of the Project site.

JURISDICTIONAL DELINEATION

No vernal pools were observed or are expected to occur on the Project site. The Project site straddles two major watersheds: Salt Creek as part of the larger Santa Ana River watershed, and Warm Springs Creek, part of the broader Murrieta Creek and Santa Margarita River watershed. The Project site is situated at the top or very near the top of these watersheds.

The off-site access area for the McElwain Road extension has not yet been formally delineated due to a lack of right-of-entry. The McElwain Road off-site area was assessed for potential waters via binoculars, aerial photographs, and topographic maps. The off-site area for the Keller Road outfall structure was formally delineated. Data presented regarding waters in the off-site area for McElwain Road are estimates. A general biological assessment and jurisdictional delineation of the McElwain Road off-site area will be conducted once right-of-entry is acquired, in accordance with MM BIO-3 (see page 4.3-46) and MM BIO-8 (see page 4.3-54).

Federal Jurisdiction

Areas under USACE jurisdiction within the Project area consist of approximately 2.15 acres and consist entirely of non-wetland WUS; Table 4.3-3, *Waters of the U.S* and Exhibit 4.3-2, *Waters of the U.S*. The original jurisdictional delineation report included more jurisdictional habitat due to the original property size being much larger and a now abandoned plant nursery that contributed significant runoff into the drainages. The current numbers reflect the reduced property size. A small amount of non-wetland WUS is anticipated to occur in the southern off-site access area for the McElwain Road extension. The drainages in the off-site areas are estimated to total approximately 0.08 acre and are included in the calculations presented below. This includes the less than 0.01 acre from the off-site Keller Road outfall structure.

Table 4.3-3: Waters of the U.S.

Jurisdictional Areas	Area (acres)	Length[1] (feet)
Non-Wetland		
Streambed-on-site	2.13	49,875
Streambed-off-site[2]	0.02	500
TOTAL	**2.15**	**50,375**

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 6: Waters of the U.S. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
[1]Length of drainages provided for overall drainage length. If two or more habitats exist alongside each other, length is only provided by one of the habitats.
[2]Includes the Keller Road off-site outfall structure, which is less than 0.01 acre.

State Jurisdiction

Areas under CDFW jurisdiction within the Project area total approximately 12 acres, including 1.54 acres of southern willow scrub, 0.47 acre of mule fat scrub, 7.02 acres of coast live oak woodland, 0.07 acre of riparian woodland, and 3.21 acres of streambed. All of the CDFW areas are considered Riparian/Riverine; Table 4.3-4, *CDFW Jurisdictional Habitats* and Exhibit 4.3-3, *Riparian/Riverine and CASSA Plant Location Map*. Areas that were identified as swales are not considered CDFW jurisdictional or Riparian/Riverine because they lacked any evidence of flow. The original jurisdictional delineation report included more jurisdictional habitat due to the original property size being much larger and a now abandoned plant nursery that contributed significant runoff into the drainages. The current numbers are for the reduced property size. Additionally, a small amount of streambed is expected to occur in the southern off-site access area for the McElwain Road extension. The drainages in the off-site area are estimated to total approximately 0.04 acre and are included in the calculations presented below. This includes the less than 0.01 acre from the off-site Keller Road outfall structure.

Table 4.3-4: CDFW Jurisdictional Habitats

Habitat	Area (acres)	Length[1] (feet)
Coast Live Oak Woodland	7.02	4,242
Mule Fat Scrub	0.47	474
Riparian Woodland	0.07	56
Southern Willow Scrub	1.54	2,076
Streambed	3.21	43,546
TOTAL	**12.31**	**50,394**

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 7: California Department of Fish and Wildlife (CDFW) Jurisdictional Habitats. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
[1]Length of drainages provided for overall drainage length. When two or more habitats exist alongside each other, the linear length is divided among the habitats.

RIPARIAN/RIVERINE AND VERNAL POOL HABITAT ASSESSMENT

The identification of Riparian/Riverine habitat is based on potential for the habitat to support, or be a tributary to habitat that supports, Riparian/Riverine Covered Species, which are identified in MSHCP Section 6.1.2 found here: https://www.rctlma.org/Portals/0/mshcp/volume1/sec6.html.

As noted above, the Riparian/Riverine resources are the same at the CDFW jurisdictional areas. The Riparian/Riverine habitat on the property totals approximately 12 acres, including 1.54 acres of southern willow scrub, 0.47 acres of mule fat scrub, 0.07 acre of southern coast live oak riparian woodland, 7.02 acres of coast live oak woodland, and 3.21 acres of streambed; Table 4.3-4.

As stated above in the jurisdictional delineation discussion, the evaluation of the off-site area (McElwain Road extension) was based on an assessment via binoculars, aerial photographs, and topographic maps. It is anticipated that a small amount of riverine habitat (estimated at 0.04 acre of streambed) occurs within the off-site access area. This includes the less than 0.01 acre from the Keller Road outfall structure.

Birds

The least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo are found in riparian habitats, such as southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, and arroyo willow riparian forest, that typically feature dense cover. A portion of the riparian habitat on-site was determined to have potential to support least Bell's vireo and southwestern willow flycatcher. Habitat for least Bell's vireo, southwestern willow flycatcher and western yellow-billed cuckoo does not occur within the off-site access areas.

The habitat assessment conducted in 2006 concluded that habitat with potential to support least Bell's vireo and southwestern willow flycatcher occurs on the Project site. Western yellow-billed cuckoo habitat does not occur on the Project site. Protocol least Bell's vireo and southwestern willow flycatcher surveys were conducted in 2006, and the least Bell's vireo surveys were repeated in 2008 and 2012. All surveys were negative for the presence of least Bell's vireo and southwestern willow flycatcher.

The southwestern willow flycatcher is restricted to dense riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods (*Populus* spp.), or smaller spring-fed or boggy areas with willows or alders (*Alnus* spp.). It breeds in relatively dense riparian habitats.

The study area has riparian woodland that has low potential for southwestern willow flycatcher. The southern cottonwood-willow riparian forest that has the most potential to support southwestern willow flycatcher is being avoided/preserved through open space preservation in the LNP. The Project site does propose impacts to adjacent riparian habitat that has minimal potential to support this species. Surveys were conducted for southwestern willow flycatcher in 2006 with negative results.

The riparian habitat has been further reduced on the site as a result of the removal of the nursery, which contributed nuisance flows that resulted in more expansive riparian habitat. The Project site no longer supports even marginal habitat for this species. Southwestern willow flycatchers were not observed during the least Bell's vireo surveys conducted on the Project site. Southwestern willow flycatcher is not expected to occur on the Project site.

Both the bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*) occur primarily in and adjacent to open water habitats, with the falcon possibly occurring in riparian areas. No suitable habitat occurs on-site for the bald eagle. Riparian habitats that may provide foraging habitat for falcon occur on-site, but potential nesting habitat for the falcon does not occur.

Invertebrates

In southern California, vernal pool fairy shrimp is known only from western Riverside County up to an elevation of 1159 meters.[17] This species exists in vernal pools and other ephemeral basins often located in patches of grassland and agriculture interspersed in Diegan coastal sage scrub and chaparral. Riverside fairy shrimp occurs in Riverside, Orange, and San Diego counties, as well as in northern Baja California, Mexico (Baja). This species is typically found in deeper vernal pools and other ephemeral basins that hold water for long periods of time (30 or more days). Santa Rosa Plateau fairy shrimp are limited to the Santa Rosa Plateau.

[17] Riverside County. (ND). *MSHCP Volume 2, Invertebrates/Crustaceans*. Retrieved from Riverside County Website: https://www.rctlma.org/Portals/0/mshcp/volume2/crustaceans.html. Accessed September 3, 2019.

No vernal pools or ephemeral basins occur on the Project site. The Project site does include a 4.4-acre patch of clay soils located on the south-southwest edge of the agricultural field in the northeastern area of the Project site. The clay soils have been disturbed from years of disking and dry farming. The clay soils area, along with the rest of the Project site, does not include vernal pools, ephemeral basins, or similar habitat that could support fairy shrimp. Due to a lack of habitat, none of the sensitive fairy shrimp species is expected to occur. No fairy shrimp surveys are required as fairy shrimp habitat does not occur on the Project site, within the Keller Road outfall area, or within the off-site access area for the McElwain Road extension.

Fish

The Santa Ana sucker (*Catostomus santaanae)* is restricted to the Santa Ana River watershed with year-round flows. The streams on the property lack surface flow for most of the year. This species is not expected to occur on the Project site or within the off-site access areas.

Amphibians

No appropriate habitat for the three amphibian species (arroyo toad [*Bufo californicus*], mountain yellow-legged frog [*Rana muscosa*], or California red-legged frog [*Rana aurora draytonii*]*)* listed under MSHCP 6.1.2 occurs on the Project site, and none of these species has any potential to occur on-site or in the off-site access areas. The Project site lies outside of the MSHCP arroyo toad survey area and no surveys are required.

Riparian/Riverine Plant Species

Twenty-three plant species are identified in the MSHCP as potentially occurring in Riparian/Riverine and Vernal Pool habitats. While some similar plant species were found, none of the 23 sensitive plant species defined by the MSHCP were observed on the Project site, or in the Keller Road outfall area, during the Riparian/Riverine and Vernal pool habitat assessment and rare plant surveys.

The McElwain Road extension off-site area was not surveyed for the 23 sensitive plant species because access was not granted by the landowner to conduct surveys. A full biological assessment of the McElwain Road off-site access area for MSHCP Section 6.1.2 resources will be conducted once right-of-entry is acquired. See MM BIO-7 (see page 4.3-54). Species that were observed are identified in Appendix A of the *Murrieta Hills Project General Biological Resources Assessment* (EIR Appendix 9.3.3).

Many oak trees were observed on the Project site, but none were identified as Engelmann oak, which is one of the 23 MSHCP sensitive plant species. Shrub and tree species such as California black walnut and Coulter's matilija poppy were not found on the Project site, or in the Keller Road outfall area. A number of the species, including California Orcutt grass, spreading navarretia, thread-leaved brodiaea, graceful tarplant, prostrate navarretia, San Diego button-celery, Orcutt's brodiaea, Fish's milkwort, lemon lily, San Jacinto Valley crownscale, Mojave tarplant, Brand's phacelia, Santa Ana River woolly-star, vernal barley, and Parish's meadowfoam, occur in habitats that do not occur on the Project site (e.g., vernal pools) , or in the Keller Road outfall area, or have distributions well outside of the Project site. The remaining species have a distribution that includes the Project site or occurs in habitats found on the Project site, or in the Keller Road outfall area and are discussed in greater detail below.

Mud nama is restricted to muddy embankments of marshes and swamps and within lake margins and riverbanks (CNPS, as cited in HELIX 2019c). Three populations are known from Riverside County, with two occurring along the San Jacinto River (Dudek, as cited in HELIX 2019c). This species was not observed during the rare plant or other surveys conducted on the property, or in the Keller Road outfall area, and is presumed to be absent from the Project site.

San Miguel savory is associated with rocky and metavolcanic substrates in coastal sage scrub, chaparral, riparian woodland, and grassland habitats. This perennial shrub is visible year-round and was not observed during the intensive 2006 rare plant survey or during any of the subsequent surveys conducted on the Project site, or in the Keller Road outfall area, and is presumed to be absent from the Project site.

Smooth tarplant is found in southwestern California and northwestern Baja, and occurs in San Bernardino, Riverside, and San Diego counties. This species occurs in open spaces within a variety of habitats, including alkali scrub and playas, riparian woodland, watercourses, and grasslands with alkaline affinities (Dudek and CNPS, as cited in HELIX 2019c). This species was not observed during the rare plant or other surveys conducted on the Project site, or in the Keller Road outfall area, and is presumed to be absent from the Project site.

Ocellated Humboldt lily is associated with riparian corridors in coniferous forest and chaparral habitats. Within western Riverside County, ocellated Humboldt lily is restricted to canyons along the east slope of the Santa Ana Mountains and the north slope of the Palomar Mountains. The riparian habitat on-site is not associated with coniferous forest. Some chaparral does occur adjacent to the riparian habitat on the Project site. This species was not observed during the rare plant or other surveys conducted on the Project site, or in the Keller Road outfall area, and is presumed to be absent from the Project site.

Slender-horned spineflower is typically found in mature alluvial scrub with sandy soils but is also found in rocky soils and open chamise chaparral. Ideal habitat is thought to be benches or terraces that receive overbank flow every 50 to 100 years. Potential habitat for this species occurs in some of the chaparral that is adjacent to the large drainages on the Project site. This species was not observed during the rare plant or other surveys conducted on the Project site, or in the Keller Road outfall area, and is presumed to be absent from the Project site.

MULTIPLE SPECIES HABITAT CONSERVATION PLAN

Narrow Endemic Plant Species

The MSHCP requires that the Project conduct special assessments for six Narrow Endemic plant species. Rare plant surveys conducted in 2006, 2008, and 2012 for the Project site and in 2019 for the off-site Keller Road outfall area were all negative for NEPSSA plant species. The McElwain Road extension off-site access area was not surveyed as part of the above NEPSSA surveys because access was not granted by the landowner to conduct surveys. A general full biological assessment of the McElwain Road off-site access area for MSHCP Section 6.1.3 resources will be conducted once right-of-entry is acquired. See MM BIO-4 (see page 4.3-47). No NEPSSA plant species occur on the Project site or Keller Road outfall off-site area, nor does the Project site contain suitable habitat for any of these Narrow Endemic plant species. An analysis of each NEPSSA species is provided below.

- Munz's onion: Munz's onion is restricted to clay and cobbly clay soils associated with Altamont, Auld, Bosanko, Claypit, and Porterville series soils. Munz's onion occurs in scattered locations at

Estelle Mountain, Gavilan Plateau, hills of Lake Elsinore to Paloma Valley, and Skunk Hollow/Lake Skinner area. A small area of Auld clay soils is mapped on-site in the southwestern portion of the Project site previously disturbed by dry farming/discing activities, and clay soil inclusions were noted during Project surveys. Focused surveys were negative for this species.

- San Diego ambrosia: San Diego ambrosia is associated with river terraces, vernal pools, and alkali playas on Garretson gravelly fine sandy loams and Las Posas loams in close proximity to Willows series soils. The only known extant populations of this species in Riverside County are in the Alberhill area of Lake Elsinore and Skunk Hollow. No Garretson gravelly fine sandy loams occur on-site, although a small area of Garretson gravelly very fine sand loam does occur in the southwestern portion of the site, and a small area of Las Posas loam is mapped in the central portion of the site. This species was surveyed for but not observed. The potential for this species to occur on-site, or in the Keller Road outfall area, is remote.
- Many-stemmed dudleya: Many-stemmed dudleya is restricted to clay and cobbly clay soils associated with Altamont, Auld, Bosanko, Claypit, and Porterville series soils. This species occurs in scattered locations primarily in the Temescal Canyon, Gavilan Plateau, and Alberhill areas and the Santa Ana Mountains. A small area of Auld clay soils was mapped on the site, and clay soil inclusions were noted during Project surveys. Focused surveys were negative for this species.
- Spreading navarretia: Primary habitat for spreading navarretia is vernal pools/depressions and ditches in areas that once supported vernal pools. Riverside County supports the largest remaining populations, which are associated with the largest areas of available habitat in the U.S. The closest known population is along the San Jacinto River just west of I-215. No vernal pools occur on-site or are known from the vicinity. There is no potential for this species to occur on-site, or in the Keller Road outfall area.
- California Orcutt grass: California Orcutt grass is restricted to vernal pools, which do not occur on-site. It is known from the Santa Rosa Plateau, Skunk Hollow, and Upper Salt Creek in Riverside County and also occurs in San Diego County. There is no potential for this species to occur within the Project boundaries or off-site access areas.
- Wright's trichocoronis: According to the MSHCP reference document, the middle section of the San Jacinto River and Salt Creek in the Hemet area represent the two core areas for Wright's trichocoronis. This species is limited to alkali soils, which are not present on-site or off-site.

Based on the Project surveys conducted, the Project site does not contain suitable habitat for any of these Narrow Endemic plant species, and none were located on the Project site or within the off-site Keller Road outfall area. As previously stated, the McElwain Road extension off-site access area was not surveyed due to a lack of right-of-entry. A general biological assessment/survey of the McElwain Road off-site access area will be conducted once right-of-entry is acquired. See MM BIO-3 and MM BIO-4 (see pages 4.3-46 to 4.3-47).

Burrowing Owl Habitat Assessment and Survey

No sign of current or past use by burrowing owl was observed on the Project site or off-site Keller Road outfall area[18], from surveys conducted in 2006, 2008, 2012, and 2018. As previously stated, the McElwain Road extension off-site access area was not surveyed due to a lack of right-of-entry; however, this off-site area has a minimal potential to support burrowing owls. A general biological assessment/survey of the McElwain Road off-site access area will be conducted once right-of-entry is acquired. See MM BIO-2 and MM BIO-3 (see page 4.3-46). A pre-construction burrowing owl survey will be conducted within 30 days prior to initiation of on-site Project activities in accordance with the MSHCP's survey guidelines. See MM BIO-1 (see page 4.3-46). If burrowing owls have colonized the Project site prior to the initiation of construction, the Project Applicant should immediately inform the RCA and the Wildlife Agencies, and may include preparation of a *Burrowing Owl Protection and Relocation Plan*, prior to initiating ground disturbance.

Criteria Area Species

The Project site area is located within a CASSA requiring habitat assessment and surveys for seven CASSA Area 4 species: Davidson's saltscale (*Atriplex serenana var. davidsonii*), Parish's brittlescale (*Atriplex parishii*), thread-leaved brodiaea, smooth tarplant, Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*), little mousetail (*Myosurus minimus ssp. apus*), and round leaved filaree (*California macrophylla*). While the off-site areas are within a NEPSSA, they do not occur within the CASSA.

Rare plant surveys for CASSA plant species concluded that two individual **round-leaved filaree** occur on the Project site. These two individuals were observed during the initial rare plant survey in 2006. The Project site was surveyed in 2008 and 2012 for CASSA plant species and none were observed on-site, including the round-leaved filaree. The location of the original sighting of the round-leaved filaree was given extra attention during the 2008 and 2012 surveys, and based on the data collected over three separate years of rare plant surveys, the minor potential population of round-leaved filaree located on the Project site does not have long-term conservation value.

An analysis of each of the CASSA species is provided below.

- **Round-leaved filaree**: As noted above, two round-leaved filaree individuals were observed during the 2006 survey in the northeast quarter of the Project site near the agricultural land. The individuals were observed in a disc of clay soil near the mapped Auld clay soils. Low rainfall (approximately 66 percent of normal) in spring 2006 caused unusual growing conditions that may have resulted in the plants of the genus Erodium (of which this species is formerly of) occurring in smaller numbers. This suggests that it is possible that a slightly larger number of individuals of round-leaved filaree could exist at this location in a normal rainfall year. However, no individuals of this species were observed during rare plant surveys in 2008 with a recorded rainfall of 88 percent of normal, or in 2012 with a rainfall of 63 percent of normal. It is a possibility that the unusually high rainfalls of 2005 (242 percent of average) resulted in a larger that normal growth for round-leaved filaree in 2006.

[18] Note: The off-site Keller Road outfall area was included as part of the buffer survey area during the burrowing owl surveys. From HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment*. La Mesa, CA: HELIX. EIR Appendix 9.3.3.

Round-leaved filaree is known primarily from five records in the Gavilan Hills, one record at Lake Mathews, one at Diamond Valley Lake, one along Temescal Wash near Lee Lake, one in French Valley, and one in the foothills of the Agua Tibia Mountains. No core areas have been identified for this species (Dudek, as cited in HELIX 2019a). Two of the known populations occur on Bosanko clay soils, while the two individuals were observed on Cajalco rocky fine sandy loam. As the species is typically observed on clay soils, they were most likely on a clay disc inclusion with the Cajalco soil.

- **Davidson's saltscale**: Davidson's saltscale is known to occur in cismontane southwestern California from Ventura (Ojai), western Orange (Seal Beach, San Joaquin Freshwater Marsh, Newport Backbay), and in western Riverside counties (Dudek 2003). In Riverside County, it is found in the Domino-Traver-Willows soils series in association with alkali vernal pools, annual grassland, playa, and scrub components of alkali vernal plains, none of which occurs on the Project site, or in the Keller Road outfall area.
- **Parish's brittlescale**: Known from San Diego and Riverside counties as well as Baja California, Mexico (Baja), Parish's brittlescale occurs in association with vernal pools, alkali playas, and chenopod scrub, none of which occurs on the Project site, or in the Keller Road outfall area.
- **Thread-leaved brodiaea**: Twelve populations of thread-leaved brodiaea are known from Riverside County, with the San Jacinto River and Santa Rosa Plateau areas containing core populations. This species also occurs in San Diego County and is restricted to clay lens soils in annual grasslands and vernal pools. No thread-leaved brodiaea was observed during focused surveys of the Project site, or in the Keller Road outfall area.
- **Smooth tarplant**: Smooth tarplant is found in southwestern California and northwestern Baja California, Mexico (Baja) and occurs in San Bernardino, Riverside, and San Diego counties. This species occurs in a variety of habitats, including alkali scrub and playas, riparian woodland, watercourses, and grasslands with alkaline affinities (Dudek 2003; CNPS 2007). No alkali soils are present on the Project site, or in the Keller Road outfall area.
- **Coulter's goldfields**. Three core populations of Coulter's goldfields are known from Riverside County with the San Jacinto Wildlife Area and southern shores of Mystic Lake supporting the largest remaining population throughout its range. The other two core areas occur along the middle segment of the San Jacinto River and alkali flats between Alberhill and Lake Elsinore. This species also occurs in San Luis Obispo, Santa Barbara, Ventura, Los Angeles and San Diego counties and Baja in marshes, swamps, playas, and vernal pools, none of which occurs on the Project site, or in the Keller Road outfall area.
- **Little mousetail**: Little mousetail occurs in scattered locations from Orange and San Bernardino counties south to coastal San Diego County from sea level to 1,500 meters elevation. This species occurs in association with vernal pools and within alkali vernal pools and annual grassland components of alkali vernal plains. No alkali soils are present on the Project site, or in the Keller Road outfall area.

Based on the surveys conducted, the Project site does not contain suitable habitat for any of these CASSA plant species, except for the round-leaved filaree, which is discussed above. As previously stated, the McElwain Road extension off-site access area was not surveyed due to a lack of right-of-entry. A general

biological assessment/survey of the McElwain Road off-site access area will be conducted once right-of-entry is acquired. See MM BIO-3 (see page 4.3-46). The Project off-site areas are not within the CASSA.

OTHER SENSITIVE SPECIES

A six-quadrangle (Lake Elsinore, Wildomar, Romoland, Murrieta, Winchester and Bachelor Mountain) search of the CNDDB was conducted along with an in-house database for sensitive plants and animals that have potential to occur in the Project area that were not addressed through the MSHCP surveys.

Plants

There are 31 other sensitive plant species, in addition to the aforementioned species, none of which are listed at the state or federal level, which were determined to have potential to occur in the Project vicinity; Table 4.3-5, *Status of MSHCP, Listed, and Sensitive Plant Species*.

Five of the other sensitive (non-listed) plant species occur within the Project study area: Parry's spineflower (*Chorizanthe parryi* var. *parryi*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Palmer's grapplinghook (*Harpagonella palmeri*), paniculate tarplant (*Deinandra paniculata*), and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*). Three of the sensitive species are widespread on the Project site and were observed primarily in sage scrub or sage scrub/chaparral ecotone habitats.

Approximately 4,536 individual Parry's spineflower, a CNPS list 1B.1 sensitive plant, occur on the Project site. The plants are scattered throughout the property, with the majority (80 percent) occurring on the western portion of the Project site.[19]

Approximately 26,400 individual long-spined spineflower, a CNPS list 1B.2 sensitive plant, occur on the Project site. The plants are primarily scattered throughout the central and western portions of the Project site.[20]

Approximately 745 individual Palmer's grapplinghook, a CNPS list 4.2 sensitive plant, occur on the property. The plants are scattered and primarily occur in the west and central portions of the Project site.[21]

Approximately 50 individual paniculate tarplant, a CNPS list 4.2 sensitive plant, were observed in a disturbed grassy area adjacent to the disturbed habitat west of the former nursery in 2006. During the 2008 surveys, less than a dozen paniculate tarplant were observed in the same area and were mixed with a much larger population of fasciculate tarplant (*Deinandra fasciculata*).[22]

Approximately 100 individual Robinson's pepper-grass, a CNPS list 4.3 sensitive plant, were observed in the sage scrub/chaparral ecotone habitat located along the west side of the drainage located west of the former nursery in 2006. This population was searched for during the 2008 rare plants surveys and was not observed.[23]

[19] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment*. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
[20] Ibid.
[21] Ibid.
[22] Ibid.
[23] Ibid.

Table 4.3-5: Status of MSHCP, Listed, and Sensitive Plant Species

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Plants				
Bottle liverwort (*Sphaerocarpos drewei*)	Not covered	--/-- CNPS List 1B.1	Openings in chaparral, and coastal sage scrub.	Not expected. Not observed during rare plant survey.
Campbell's liverwort (*Geothallus tuberosus*)	Not covered	--/-- CNPS List 1B.1	Mesic soil, in wetlands, vernal pools, grassland, chaparral and coastal scrub.	Not expected. Not observed during rare plant survey. Limited habitat occurs on-site.
Chaparral nolina (*Nolina cismontana*)	Not covered	--/-- CNPS List 1B.1	Chaparral and coastal scrub.	Not expected. Not observed during rare plant survey. Though habitat present, species is conspicuous and would have been seen if present.
Chaparral sand verbena (*Abronia villosa aurita*)	Not covered	--/-- CNPS List 1B.1	Sandy soils, require bare ground, not tolerant of weeds.	Not expected. Not observed during rare plant survey. Though appropriate habitat on-site, species is conspicuous and would have been seen if present.
Jaeger's milk vetch (*Astragalus pachypus* var. *jaegeri*)	MSHCP Covered	--/-- CNPS List 1B.1	Sandy soils, chaparral, woodland, scrub, grassland.	Not expected. Not observed during rare plant survey.
Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)	Not covered	--/-- CNPS List 1B.1	Chaparral, woodland, and scrub, sandy or gravelly.	Low. Not observed during rare plant survey. Habitat is present on-site.
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	MSHCP Covered (once 10 distinct populations are conserved)	--/-- CNPS List 1B.1	Openings in chaparral and sage scrub, sandy, or rocky soil.	**Present** and widespread on-site. Total population approximately 4,536 individuals on-site.
Rainbow manzanita (*Arctostaphylos rainbowensis*)	MSHCP Covered (once 10 distinct populations are conserved)	--/-- CNPS List 1B.1	Chaparral.	Not expected. Not observed on-site, though species conspicuous year-round.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Tecate cypress (*Hesperocyparis forbesii*)	Not covered	--/-- CNPS List 1B.1	Coniferous forest often associated with chaparral, north facing slopes and clay or gabbro soils.	Not expected. Not observed on-site and species is conspicuous year-round.
Felt-leaved monardella (*Monardella hypoleuca* spp. *lanata*)	Not covered	--/-- CNPS List 1B.2	Chaparral and woodland.	Low. Not observed during rare plant survey. Habitat is present on-site.
Gander's ragwort (*Senecio ganderi*)	Not covered	--/SR CNPS List 1B.2	Chaparral, burn and gabbroic outcrops.	Not expected. Not observed during rare plant survey.
Hammitt's clay-cress (*Sibaropsis hammittii*)	MSHCP Covered	--/-- CNPS List 1B.2	Mesic sites in grassland often surrounded by chaparral.	Not expected. Not observed during rare plant surveys. Limited habitat occurs on-site.
Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*)	MSHCP Covered	--/-- CNPS List 1B.2	Rocky, chaparral, scrub, grassland.	Low. Not observed during rare plant survey. Habitat present on-site.
Long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*)	MSHCP Covered	--/-- CNPS List 1B.2	Chaparral, sage scrub, grassland, often in clay soils.	**Present** in large numbers; multiple populations on-site. One population estimated at 10,000 individuals, with a total of approximately 26,400 individuals on-site.
Parry's tetracoccus (*Tetracoccus dioicus*)	Not covered	--/-- CNPS List 1B.2	Chaparral and coastal scrub.	Low. Not observed during rare plant survey. Potential habitat occurs on-site.
San Bernardino aster (*Symphyotrichum defoliatum*)	Not covered	--/-- CNPS List 1B.2	Vernal mesic grassland, seeps, meadows, marshes, and swamps	Not expected. Not observed during rare plant surveys. Limited potential habitat occurs on-site.
Santa Lucia dwarf rush (*Juncus luciensis*)	Not covered	--/-- CNPS List 1B.2	Vernal pools, meadows, streamsides.	Not expected. Not observed during rare plant surveys. No vernal pool habitat on-site.
Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	Not covered	--/-- CNPS List 1B.2	Woodland, chaparral, mesic.	Not expected. Not observed during rare plant survey. Typically occurs at 1,800 feet above mean sea level or higher.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Nevin's barberry (*Berberis nevinii*)	CASSA	--/-- CNPS List 1B.2	Chaparral, woodland, scrub, riparian scrub, sandy or gravelly soil.	Not expected. Not observed on-site during rare plant survey. Species visible year-round.
Sticky-leafed dudleya (*Dudleya viscida*)	Forest Service (FS)	--/-- CNPS List 1B.2	Chaparral, scrub, coastal bluffs, rocky.	Low to not expected. Not observed during rare plant survey. Habitat does occur on-site. Property not on Forest Service land.
Wiggins' cryptantha (*Cryptantha wigginsii*)	Not covered	--/-- CNPS List 1B.2	Coastal scrub on clay soils.	Not expected. Not observed during rare plant survey. Limited amount of clay soil on-site.
Intermediate monardella (*Monardella hypoleuca* ssp. *intermedia*)	Not covered	--/-- CNPS List 1B.3	Chaparral, woodland, lower coniferous forest often on steep slopes.	Not expected. Not observed during rare plant survey.
Ramona horkelia (*Horkelia truncata*)	Not covered	--/-- CNPS List 1B.3	Clay, woodland and chaparral.	Low to not expected. Not observed during rare plant survey. Small amount of suitable habitat on-site.
Salt spring checkerbloom (*Sidalcea neomexicana*)	Not covered	--/-- CNPS List 2.2	Alkaline mesic soils, chaparral, coastal and desert scrub, playas.	Not expected. Not observed during rare plant survey.
White rabbit tobacco (*Pseudognaphalium leucocephalum*)	Not covered	--/-- CNPS List 2B.2	Riparian woodland, coastal scrub, chaparral with sandy gravelly soils.	Not expected. Not observed during rare plant survey.
California ayenia (*Ayenia compacta*)	Not covered	--/-- CNPS List 2B.3	Desert scrub	Not expected. Not observed during rare plant survey. No habitat on-site.
Palmer's grapplinghook (*Harpagonella palmeri*)	MSHCP Covered	--/-- CNPS List 4.2	Clay soil, chaparral, sage scrub, and grassland.	**Present.** Several populations totaling approximately 745 individuals in scattered locations on-site.
Paniculate tarplant (*Deinandra paniculata*)	Not covered	--/-- CNPS List 4.2	Scrub and grassland, vernally mesic.	**Present.** One population of 50 individuals observed on-site west of the nursery.
Payson's jewel-flower (*Caulanthus simulans*)	MSHCP Covered	--/-- CNPS List 4.2	Chaparral and coastal scrub in disturbed or frequent burn areas with rocky slopes.	Not expected. Not observed during rare plant survey.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Plummer's mariposa lily (*Calochortus plummerae*)	MSHCP Covered	--/-- CNPS List 4.2	Coastal scrub, chaparral, grassland, and woodland on granitic or alluvial soil.	Not expected. Not observed during rare plant surveys.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	Not covered	--/-- CNPS List 4.3	Openings in chaparral and sage scrub, typically dry sites.	**Present.** One population of 100 individuals observed west of the former nursery.

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 8: Status of MSHCP, Listed, and Sensitive Species. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
*Refer to Appendix C of EIR Appendix 9.3.3 for a listing and explanation of status, sensitivity, and MSHCP codes.
**Includes on-site Project area and off-site access area for the Keller Road drainage outfall. The McElwain Road extension off-site access area was not surveyed due to a lack of right-of-entry.

Animals

There are 40 sensitive animals historically known to occur in the vicinity of the study area beyond those addressed through the MSHCP, three of which are listed at the state or federal level; Table 4.3-6, *Status of MSHCP, Listed, and Sensitive Animal Species*. Seven of the 40 sensitive species were observed in the study area, none of which are either a state or federal listed species.

The coastal California gnatcatcher (*Polioptila californica californica*), federally designated as threatened and a California state species of concern, was observed on the site. San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Cooper's hawk (*Accipiter cooperii*), and red-diamond rattlesnake (*Crotalus ruber*) are California state species of concern and were observed in the study area. The unlisted species, white-tailed kite (*Elanus leucurus*), a CDFW fully protected species, and California horned lark (*Eremophila alpestris actia*), a CDFW watch list species, are present in the study area. All of these species are fully covered under the MSHCP and require no mitigation other than to show MSHCP compliance through specific habitat assessments, applicable biological surveys, and the provision of an MSHCP compliance analysis. Of the remaining 33 species, there are two species that are listed at the federal and/or state level: Stephens' kangaroo rat (*Dipodomys stephensi*) and Quino checkerspot butterfly (*Euphydryas editha quino*). Both are federally listed as endangered, with the Stephens' kangaroo rat also being state listed as threatened and the Quino checkerspot butterfly being a California state species of concern. Both of these species are covered species under the MSHCP. Compliance with the MSHCP, including payment of associated fees, mitigates potential impacts to Stephens' kangaroo rat and Quino checkerspot butterfly.[24]

Coastal California gnatcatchers were incidentally observed during the burrowing owl, rare plant, and least Bell's vireo surveys. The coastal California gnatcatchers observed were seen moving through the edges of the chaparral that border the field cropland in the northeastern portion of the Project site. The chaparral on the edge of the field cropland includes a high percentage of sage scrub species, which is preferred habitat for the gnatcatchers.

[24] Ibid., page 30.

Table 4.3-6: Status Of MSHCP, Listed, And Sensitive Animal Species

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Invertebrates				
Quino checkerspot butterfly (*Euphydryas editha quino*)	MSHCP Covered, Planning Species	Federally Endangered (FE)/ California Special Concern (CSC)	Open areas, sparse vegetation, flowers. Host plants include *Plantago* spp., *Antirrhinum coulterianum*, *Cordylanthus rigidus*.	Moderate. Species known to occur in area. Host plants and nectar sources found on property.
Amphibians				
Western spadefoot (*Scaphiopus hammondii*)	MSHCP Covered	--/CSC	Grassland, sage scrub, or occasionally chaparral. Standing water, puddles, vernal pools, needed for reproduction.	Low. Limited habitat on-site.
Reptiles				
Coast horned lizard (*Phrynosoma coronatum blainvillei*)	MSHCP Covered	--/CSC	Grassland, scrub, chaparral, woodland.	High. Species observed on nearby sites. Habitat present on-site.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	Not covered	--/CSC	Coastal and desert scrub, chaparral, washes. A generalist.	Moderate. Habitat for species occurs on-site.
Coast range newt (*Taricha torosa torosa*)	Not covered	--/CSC	Grassland, woodland associated with ponds, slow-moving streams.	Low. Some habitat occurs on-site, but species uncommon in area.
Orange-throated whiptail (*Cnemidophorus hyperythrus*)	MSHCP Covered	--/CSC	Chaparral, sage scrub, grassland, woodland, riparian areas.	High. Property contains appropriate habitat.
Red-diamond rattlesnake (*Crotalus ruber*)	MSHCP Covered	--/CSC	Heavy brush, boulders, can use a variety of habitats. Prey density a determining factor.	**Present**. Habitat occurs on-site, and species observed.
Two-striped garter snake (*Thamnophis hammondii*)	Not covered	--/CSC	Stream course with adjacent dense vegetation.	Moderate. Property contains preferred habitat.
Western pond turtle (*Clemmys marmorata pallida*)	MSHCP Covered, Planning Species	--/CSC	Slow-moving streams, ponds, reservoirs, other water bodies deeper than 6 feet with logs or other submerged cover.	Low. No deep pools on-site. Species could use property for migration.
Coastal western whiptail (*Cnemidophorus tigris stejnegeri*)	MSHCP Covered	--/--	Open rocky areas with sparse vegetation usually scrub or grassland.	High. Habitat occurs on-site. Species locally common.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Rosy boa (*Lichanura trivirgata*)	Not covered	--/--	Rocky chaparral hillsides, canyons, desert scrub.	Moderate. Property contains habitat for species.
San Bernardino ringneck snake (*Diadophis punctatus modestus*)	Not covered	--/--	Moist habitats. woodlands, farms, grassland, chaparral.	Moderate. Habitat occurs on the property.
San Diego banded gecko (*Coleonyx variegatus abbotti*)	MSHCP Covered	--/--	Deserts scrub to chaparral; micro-habitat desert species.	Low. Chaparral and potential microhabitats occur on-site.
San Diego ringneck snake (*Diadophis punctatus similis*)	Not covered	--/--	Moist habitats. woodlands, farms, grassland, chaparral.	Moderate. Habitat occurs on the property.
Birds				
Coastal California gnatcatcher (*Polioptila californica californica*)	MSHCP Covered, Planning Species	Federally Threatened (FT)/CSC	Coastal sage and other low scrub.	**Present**. Multiple pairs occur through property.
Bell's sage sparrow (*Amphispiza belli belli*)	MSHCP Covered, Planning Species	--/CSC	Evenly spaced sage scrub.	Moderate. Habitat occurs on the property.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	MSHCP Covered	--/CSC	Scrub, desert thickets, and areas with large branching cacti.	Low. Property contains limited amounts of cacti.
Cooper's hawk (*Accipiter cooperii*)	MSHCP Covered	--/CSC	Forest and woodland habitats. Would forage in grasslands.	**Present**. Species observed on-site.
Ferruginous hawk (*Buteo regalis*)	MSHCP Covered	--/CSC	Large areas of open grassland or shrub with elevated nest sites.	Low to moderate. Habitat occurs on-site. Species uncommon.
Golden eagle (*Aquila chrysaetos*)	MSHCP Covered	--/CSC	Open country, prefers mountains or hills.	Low to moderate. Habitat occurs on-site. Species uncommon.
Grasshopper sparrow (*Ammodramus savannarum*)	Planning Species; additional conservation required to become adequately covered	--/CSC	Grassland with some shrubs and patchy bare ground.	Low to moderate. A few areas with suitable habitat occur on-site.
Loggerhead shrike (*Lanius ludovicianus*)	MSHCP Covered, Planning Species	--/CSC	Open ground, short vegetation, pastures, agriculture.	Moderate. Habitat for species occurs on-site.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
Long-eared owl (*Asio otus*)	Not covered	--/CSC	Oak woodland, riparian areas, or other dense trees.	Moderate. Habitat for species occurs on-site.
Northern harrier (*Circus cyaneus*)	MSHCP Covered	--/CSC	Meadows, grassland, scrub, rarely in woodland. Roosts on ground.	Low to moderate. Some potential habitat occurs on-site.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	MSHCP Covered, Planning Species	--/CSC	Hillsides, with grassland, sage scrub, or chaparral.	**Present**. Species observed on- site.
Tricolored blackbird (*Agelaius tricolor*)	MSHCP Covered	-State Threatened (ST)/CSC	Grassland, cropland with nearby water.	Low to moderate. Some habitat occurs on-site.
White-faced ibis (*Plegadis chihi*)	MSHCP Covered, Planning Species	--/CSC	Shallow marshes, spoils banks, meadows, marshes.	Not expected. No habitat observed on the property.
California horned lark (*Eremophila alpestris actia*)	MSHCP Covered	--/--	Grassland, agriculture fields, and disturbed fields.	**Present**. Species observed in northeast portion of site.
White-tailed kite (*Elanus leucurus*)	MSHCP Covered	--/--	Grassland, agriculture with nearby woodland for nesting.	**Present**. Several observed on the property.
Mammals				
Stephen's kangaroo rat (*Dipodomys stephensi*)	MSHCP Covered, Planning Species	FE/ST	Open areas with sparse perennial cover and loose soil.	Low to not expected. Limited habitat occurs on-site.
American badger (*Taxidea taxus*)	Not covered	--/CSC	Upland grasslands, meadows, field.	Low. Small amount of habitat occurs on-site.
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	Not covered	--/CSC	Grassland and chaparral ecotone, sage scrub.	Low. Limited grassland on-site.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	MSHCP Covered; property not in survey area	--/CSC	Fine sandy soils with sparse vegetation.	Low. Minimal habitat occurs on-site.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	MSHCP Covered	--/CSC	Primarily open scrub with short grasses.	**Present**. Species observed in several locations on-site.

Species	MSHCP Designation*	Sensitivity Status*	Habitat	Status**
San Diego desert woodrat (*Neotoma lepida*)	MSHCP Covered	--/CSC	Scrub and desert, rock outcrops, or areas of dense cover.	High. *Neotoma* sp. observed on-site. Habitat on-site.
San Diego pocket mouse (*Chaetodipus fallax fallax*)	MSHCP Covered	--/CSC	Sage scrub and grassland, sandy soils.	Low. Limited sandy soils on-site.
Southern grasshopper mouse (*Onychomys torridus ramona*)	Not covered	--/CSC	Grassland and sparse sage scrub.	Low to not expected. Only known in Riverside County between Diamond Valley Lake and Lake Skinner.
Western mastiff bat (*Eumops perotis californicus*)	Not covered	--/CSC	Rocky areas, cliff faces, known to roost in buildings.	Low. Limited roosting areas on-site.
Bobcat (*Lynx rufous*)	MSHCP Covered, Planning Species	--/--	Rocky and brushy areas near water.	High to expected. Site contains habitat. Species relatively common.
Western yellow bat (*Lasiurus xanthinus*)	Not covered	--/--	Desert grassland and scrub with an associated water feature.	Low. Site not typical habitat of species, which is uncommon in area.

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 9: Status of MSHCP, Listed, and Sensitive Animal Species. La Mesa, CA: HELIX. EIR Appendix 9.3.3.
*Refer to Appendix C of EIR Appendix 9.3.3 for a listing and explanation of status, sensitivity, and MSHCP codes.
**Includes on-site Project area and off-site access area for the Keller Road drainage outfall. The McElwain Road extension off-site access area was not surveyed due to a lack of right-of-entry.

4.3.3 REGULATORY FRAMEWORK

FEDERAL

Federal Endangered Species Act of 1973

The Federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as "threatened" or "endangered" and provides regulatory protection for listed species. The FESA provides a program for conservation and recovery of threatened and endangered species, and conservation of designated critical habitat that the USFWS has determined is required for the survival and recovery of these listed species.

Section 4 requires Federal agencies to, among other things, prepare recovery plans for newly listed species unless the USFWS determines such a plan would not promote the conservation of the species.

Section 7 requires Federal agencies, in consultation with, and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or

result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering FESA. Regulations governing interagency cooperation under Section 7 are found at 50 CFR Part 402. The opinion issued at the conclusion of consultation would include a statement authorizing a take that may occur incidental to an otherwise legal activity.

Section 9 lists those actions that are prohibited under FESA. Take of a species listed in FESA is prohibited. Section 9 of FESA prohibits take (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) of listed species of fish, wildlife, and plants without special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or shelter. "Harass" is further defined as actions that create the likelihood of injury to listed species, resulting in significantly disrupting normal behavior patterns which include, but are not limited to, breeding, feeding, and shelter.

Section 10 provides a means whereby a non-Federal action with a potential to result in the take of a listed species could be allowed under an incidental take permit. Application procedures are found at 50 CFR Parts 13 and 17 for species under the jurisdiction of USFWS and 50 CFR Parts 217, 220, and 222 for species under the jurisdiction of NMFS.

Clean Water Act/Rivers and Harbors Act

Section 401 requires that a project proponent for a Federal license or permit that allows activities resulting in a discharge to WUS must obtain a state certification that the discharge complies with other provisions of Clean Water Act (CWA). The RWQCBs administer the certification program in California.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into WUS, commonly referred to as the National Pollutant Discharge Elimination System (NPDES) Permit process, described further below.

Section 404 establishes a permit program, administered by the USACE, regulating the discharge of dredged or fill material into WUS, including wetlands. The extent of WUS is generally defined as the portion that falls within the limits of the OHWM, which typically corresponds to the two-year flood event. Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas are defined by USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[c](4); 40 CFR 230.3[o](iv)).[25] Implementing regulations by USACE are found at 33 CFR Parts 320-330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines and were developed by the U.S. Environmental Protection Agency (U.S. EPA) in conjunction with USACE (40 CFR Parts 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

The Rivers and Harbors Act regulates placement of obstacles or structures within navigable water ways, including the area vertically beneath the ocean floor.

[25] U.S. EPA (2019). *How Wetlands are Defined and Identified under CWA Section 404.* Retrieved from U.S. EPA Website: https://www.epa.gov/cwa-404/how-wetlands-are-defined-and-identified-under-cwa-section-404. Accessed February 17, 2020.

Migratory Bird Treaty Act (16 U.S.C. 701 through 719(c))

The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law also applies to the removal of nests occupied by migratory birds during the breeding season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

STATE

California Environmental Quality Act (Pub. Res. Code §21000 et seq.) (14 CCR. §15000 et seq. ["CEQA Guidelines"])

Section 15380. Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(b) provides that a species not listed on the federal or state list of protected species may be considered endangered, rare or threatened if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California FGC dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

California Endangered Species Act (California State FGC §2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under the CESA. For projects that affect both a State and Federally listed species, compliance with FESA would satisfy the CESA if the CDFW determines that the Federal incidental take authorization is "consistent" with the CESA under California State FGC §2080.1. For projects that would result in a take of a State-only listed species, the Project proponent must apply for a take permit under §2081(b).

Section 2080. Section 2080 of the California State FGC states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission [State Fish and Game Commission] determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the California Native Plant Protection Act (CNPPA) [citation omitted], or the California

Desert Native Plants Act [citation omitted]." Pursuant to §2081 of the California State FGC, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any State-listed endangered, threatened, or candidate species as long as they do not have state Fully Protected status. These otherwise prohibited acts may be authorized through permits or a memorandum of understanding (MOU) if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and, (4) the project proponent ensures adequate funding to implement the measures required by the CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Fully Protected Species. The State of California first began to designate species as "Fully Protected" prior to the creation of the CESA. Lists of Fully Protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, mammals, amphibians and reptiles, birds, and mammals. Most Fully Protected species have since been listed as threatened or endangered under the CESA and/or FESA. The regulations that implement the Fully Protected species Statute (FGC §3511, 4700, 5050, 5515) provide that Fully Protected species may not be taken or possessed at any time. Furthermore, the statute prohibits any state agency from issuing incidental take permits for Fully Protected species, except for scientific research or relocation of the bird species for the protection of livestock pursuant to Section 670.7 of Title 14 of the CCR or Section 2835 of the FGC.

Sections 1600 through 1617. Under these sections of the California State FGC, the project proponent is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California State FGC, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. The CDFW also has jurisdiction over dry washes that carry water ephemerally during storm events.

Preliminary notification and project review generally occur during the environmental review process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

Sections 3503 and 3503.5. Under these sections of the California State FGC, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to California State FGC Section 3800.

Sections 3511, 4700, 5050, and 5515. Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California State FGC provide that designated Fully Protected species may not be taken or possessed without a permit. Incidental takes of these species are not authorized by law.

California Native Plant Protection Act (California State FGC 1900 through 1913)

CNPPA requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the CNPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this Act and sections of CEQA that apply to rare or endangered plants.

Regional Water Quality Control Board

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB also regulates waters of the State under the Porter-Cologne Act Water Quality Control Act (Porter-Cologne Act) (see below). The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts on wetlands and/or waters of the State. The RWQCB also has jurisdiction over waters deemed isolated or not subject to Section 404 jurisdiction under the *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the State and prospective dischargers are required to obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the State fall under the jurisdiction of the appropriate RWQCB. Under the Act, the RWQCB must prepare and periodically update basin plans. Each basin plan sets forth water quality standards for surface water and groundwater as well as actions to control nonpoint and point sources of pollution, thereby achieving and maintaining these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to water quality certification or a waiver under Section 401 of the CWA.

REGIONAL

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a comprehensive multi-jurisdictional habitat conservation effort that includes Riverside County and multiple cities in western Riverside County, including the City of Murrieta. The MSHCP was adopted on June 17, 2003, by the Riverside County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004.

The MSHCP focuses on the conservation of 146 species, rather than addressing sensitive species on an individual basis, and proposes the conservation and permanent preservation of approximately 500,000 acres of the 1.26 million-acre Plan Area. The MSHCP also provides a mechanism to fund and implement the reserve system. Of the 500,000 acres, 347,000 acres were in Public/Quasi-Public ownership at the time the MSHCP was adopted. Achievement of the 500,000-acre goal depends on conservation of an additional 153,000 acres within the Plan Area. According to the WRCRCA's Goals and Progress webpage,

to date (no date provided, accessed September 4, 2019), the RCA has acquired 45,270 acres or 27 percent of the 153,000-acre goal.[26]

The overall goal of the MSHCP is to maintain biological and ecological diversity within a rapidly urbanizing region and allowing Riverside County and its cities to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the state and federal ESAs. Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The City is the Lead Agency/Permittee, as this property is being annexed to the City.

MSHCP GEOGRAPHIES

At the heart of the MSCHP are the areas of core habitat and linkages. The core habitat and linkages comprise the area to which the MSCHP criteria are applied and from which the 153,000 acres are being acquired. The MSHCP identified 20 core areas, 10 non-contiguous habitat blocks, and 28 linkages between areas of habitat as the system of conserved land that would meet the goals of the MSHCP for habitat preservation and species protection. Core areas have the right resources to provide live-in habitat and support the life history requirements of one or more species covered by the MSHCP. Some linkages between the core areas are large enough to provide live-in habitat but most are constrained by existing patterns of development and while they provide for movement between core areas, the options for assembling larger live-in habitat areas are limited.[27]

The MSHCP Plan Area is divided according to the boundaries of 16 County of Riverside Area Plans. The Area Plan framework for the criteria-based approach was selected to structure implementation strategies around established planning boundaries. An Area Plan Subunit is a portion of and Area Plan for which biological issues and considerations and target acreages have been specified. For each Area Plan, a Conceptual Reserve Design was roughly sketched onto a vegetation map with Planning Species occurrence data and Biological Issues and Considerations highlighted. USGS quarter sections (i.e., approximate 160-acre Cells) were then overlain on the Conceptual Reserve Design such that each Cell is an area in real space with a legal description but without being tied to a specific County assessor's legal parcel. Cells were then either aggregated into a Cell Group or retained as individual Cells depending upon the level of Conservation and configuration of the particular Cell or Cell Group. Each Cell was assigned a quadrat cell identification number and each Cell Group was assigned a letter code. Cells and Cell Groups were then aggregated into Area Plan Subunits and each Area Plan Subunit was named and numbered.[28]

PROJECT MSCHP GEOGRAPHIES

The Project is within Subunit 2, Lower Sedco Hills, in the Sun City/Menifee Valley Area Plan of the MSHCP. The Project is entirely within MSHCP criteria cells as part of Cell Group C. The Subunit and associated Cell Group C have specific planning species, biological concerns, and conservation criteria (Table 4.3-7).

[26] WRCRCA. (ND). *Goals and Progress*. Retrieved from WRCRCA Website: http://www.wrc-rca.org/about-rca/goals-and-progress/. Accessed September 4, 2019.
[27] WRCRCA. (ND). *Goals and Progress*. Retrieved from WRCRCA Website: http://www.wrc-rca.org/about-rca/goals-and-progress/. Accessed September 4, 2019.
[28] Riverside County. (ND). *MSCHP, Volume 1, Section 3.0: Conservation Planning Process/Description and Area Plan Criteria of the MSCHP Conservation Area*. Retrieved from Riverside County Website: https://www.rctlma.org/Portals/0/mshcp/volume1/sec3.html. Accessed September 4, 2019.

Table 4.3-7: Conservation Criteria for MSHCP Cells of the Murrieta Hills Property

Cell		Acre(s)	Cell Group Conservation Criteria
Group	Number		
C	5252, 5253, 5254, 5255, 5355, 5356, 5357, 5358	Approx. 974	Conservation within this Cell Group would contribute to assembly of Proposed Linkage 8 and Proposed Constrained Linkage 16. Conservation within this Cell Group would focus on chaparral, woodlands, and forest, a small area of coastal sage scrub, and grassland. Areas conserved within this Cell Group would be connected to coastal sage scrub and chaparral habitat proposed for conservation to the south in Cell Groups H' and I' and Cell 5460, all in the Southwest Area Plan. Conservation within this Cell Group would range from 60 to 70 percent, focusing on the Cell Group's southern, central, and eastern portions.

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 10: Conservation Criteria for MSHCP Cells on the Murrieta Hills Property. La Mesa, CA: HELIX.

Planning species are covered species identified for which a given portion of the MSHCP Conservation Area habitat is specifically targeted to conserve.

Cell Group C, Subunit 2 planning species include:

- Bell's sage sparrow, coastal California gnatcatcher, grasshopper sparrow, Southern California rufous-crowned sparrow, and Quino checkerspot butterfly

Cell Group C, Subunit 2 biological concerns are ensuring that the Project:

- Contribute to lower Sedco Hills portion of a habitat connection between the new Core Area in Antelope Valley and the Estelle Mountain/Lake Mathews Reserve area.
- Conserve existing populations and habitat of the coastal California gnatcatcher.
- Maintain wetlands for purposes of connection and wildlife dispersal, as well as wetland species conservation.
- Maintain Core and Linkage Habitat for Quino checkerspot butterfly.

Cell Group C, Subunit 2 conservation criteria ensure that the Project:

- Contains a portion of Proposed Constrained Linkage 16
- Contains a portion of Proposed Linkage 8

The Projects site comprises approximately 974 acres of the approximately 1,300-acre Cell Group C. The proposed development occurs in the north-central and northeast portion of Cell Group C, and as such leaves a viable swath of habitat from west to east that would contribute to the assembly of additional foraging and live-in habitat within Proposed Linkage 8 and Proposed Linkage 16. Conservation will focus on chaparral, woodlands, forest, grassland, and sage scrub. Proposed Cell Group C conservation will connect with habitats proposed for conservation in Cell Groups H and I to the south, Cell Group Y to the east, and Cell 5354 to west. A portion of this land (approximately 190 acres along the southwest corner of Cell Group C) is currently owned by WRCRCA. The McElwain Road extension has been added to the

MSHCP as a Covered Activity, and as a result, will be required to show MSHCP compliance through specific habitat assessments, applicable biological surveys, and the provision of an MSHCP compliance analysis.

PROPOSED LINKAGE 8

Proposed Linkage 8 is a part of one of two east-west linkages that connect Core Habitat on the east and west sides of the MSHCP area. Linkage 8 provides live-in and dispersal habitat for over 50 pairs of coastal California gnatcatcher. Linkage 8 is designed to provide habitat not only for the Subunit 2 planning species mentioned above, but also for Linkage 8 planning species such as the southwestern willow flycatcher, least Bell's vireo, Stephens' kangaroo rat, western pond turtle, loggerhead shrike, and bobcat.

Grassland within Linkage 8 provides foraging habitat for a number of raptor species such as the red-tailed hawk (*Buteo jamaicensis*), white-tailed kite, and great-horned owl (*Bubo virginianus*). This area has a low ratio of edge area (Core or Linkage perimeter) to total habitat acreage that contributes to maintaining the high-quality habitat in the linkage. Proper treatment of edge conditions (state of habitat, vegetation communities, and movement functions along and/or through the Core or Linkage perimeter), such as limiting domestic predators, lighting, urban runoff and toxics, is necessary to ensure that Linkage 8 maintains high-quality habitat (Dudek, as cited in HELIX 2019c).

Section 3.1.4 of the MSHCP states that movement corridors are often linear and facilitate movement by providing adequate cover and a lack of physical barriers. Corridors do not provide live-in habitat. By contrast, linkages provide permanent live-in habitat and movement and are capable of sustaining a full range of community/ecosystem processes. For simplicity, the MSHCP has referred to all corridors and linkages as "linkages." Proposed Linkage 8 is designed to provide live-in habitat for the coastal California gnatcatcher and, therefore, its design is as a linkage and not a corridor.[29]

The MSHCP conservation areas have target species but are designed as an interconnected reserve system to protect habitat for all of the 146 MSHCP covered species. Hundreds of other species not covered by the MSHCP, some sensitive (e.g., American badger [*Taxidea taxus*] and long-eared owl [*Asio otus*]) and some not sensitive (e.g., California buckwheat and California ground squirrel [*Otospermophilus beecheyi*]) are known to occur in western Riverside County. These plants and animals compose the ecosystem and food chain that are essential for the survival of the target and covered species.[30]

PROPOSED CONSTRAINED LINKAGE 16

Proposed Constrained Linkage 16 is designed to connect the east side of Linkage 8 to Proposed Core 2 to the east. This linkage is constrained by urban development and agriculture use along its entire length, along with being intersected by I-215. Management of edge conditions in this linkage is critical to maintain habitat in and movement through the linkage. Proposed Constrained Linkage 16 connects to Linkage 8 west of I-215 in the northeast portion of the property. The majority of Proposed Constrained Linkage 16 is located east of I-215, not on the Project site.[31]

[29] Ibid.
[30] Ibid.
[31] Ibid.

PROPOSED CONSERVATION

The target conservation for Cell Group C is for 60 to 70 percent focusing on the south, central, and eastern portion of the group. The literal interpretation of the Cell criteria would result in conservation of approximately 780 to 910 acres, focusing on a strip that runs from the southwest to the east primarily along the southern edge of Cell Group C. The Project proposes to conserve approximately 608 acres within Cell Group C along with creating an approximately 37-acre LNP. The LNP is not part of the MSHCP conservation area. The approximately 608 acres represent approximately 62 percent of the Project site, which is within the target of 60 to 70 percent conservation for Cell Group C.[32]

SITE SPECIFIC APPLICATION

The Project is within Cell Group C, Subunit 2, Lower Sedco Hills, in the Sun City/Menifee Valley Area Plan of the MSHCP; Exhibit 4.3-4, *MSHCP Criteria Map.* The site is required to show MSHCP compliance through specific habitat assessments, applicable biological surveys, and the provision of an MSHCP compliance analysis. The off-site access areas for the Keller Road outfall and the McElwain Road extension are not within the MSHCP conservation area, Criteria Cells, or a Cell Group.

The portions of the McElwain Road extension which fall in a criteria cell have been added to the MSHCP as a Covered Activity through Minor Amendment No. 2017-01. This includes placement of a six-foot by six-foot box culvert in the channel bottom for wildlife movement, and placement of a second four-foot by four-foot box culvert outside of the 100-year floodplain to allow for wildlife movement during high storm events; Exhibit 4.3-11, *Proposed McElwain Road Wildlife Undercrossings*. As part of this Minor Amendment process, McElwain Road's consistency with Section 7.5.1 and 7.5.2 of the MSHCP was included in that analysis. Consistency with both Section 7.5.1 and 7.5.2 are analyzed in Section 5.3.8 of EIR Appendix 9.3.3.

A component of the MSHCP process is the submittal of a habitat assessment and a HANS application. Prior to seeking a discretionary permit for a property, the property owner (or assigned party) must first conduct a habitat assessment of the site to document site conditions. Because the Project is in a criteria cell, the property owner (or assigned party) must also fill out a HANS application to submit to the County for review and processing. Visit https://rctlma.org/epd/Forms-Applications/HANS for information on the HANS process. Once the habitat assessment and HANS application is deemed complete, the County will indicate whether the MSHCP describes conservation for the subject property and identify other relevant MSHCP compliance provisions. The HANS is then forwarded to the RCA for Joint Project Review (JPR). Once the project has cleared JPR review by the RCA, the RCA will send the JPR to the Wildlife Agencies.

The HANS was submitted to the RCA for JPR on August 15, 2019. The RCA sent its JPR findings to the Project Applicant, Lead Agency, and Wildlife Agencies (USFWS and CDFW) on August 27, 2019, acknowledging that the Project is consistent with both the Criteria and Other Plan requirements. The Wildlife Agencies, who received the JPR on August 28, 2019, provided written comments within the 10-(business) day review period, which concluded on September 12, 2019. The City, as Lead Agency, and the RCA reviewed and considered comments provided by the Wildlife Agencies; however, the Lead Agency

[32] Ibid.

and RCA maintain that the Project is consistent with the MSHCP. Circulation of the Project HANS and JPR was conducted in compliance with the requirements of the MSHCP.

Certain areas within the MSHCP boundaries require focused surveys to be conducted in areas where suitable habitat exists to support certain species and resources, such as vernal pool plants, burrowing owl, riparian areas, and riparian plant and wildlife species. If it can be demonstrated that an area clearly does not contain suitable habitat, this requirement may be eliminated. If additional surveys are required and depending on their outcome, the area may be considered occupied suitable habitat. If it's unfeasible to conserve 90 percent of this area the Project Applicant must submit an analysis supporting a DBESP. The DBESP analysis demonstrates why avoidance is not possible, quantifies unavoidable impacts, proposes Project design features and mitigation measures that reduce indirect effects, and demonstrates that the Project will be biologically equivalent or superior to "avoidance."

The Project Applicant submitted the DBESP to the Lead Agency, who then submitted the application to the RCA for review, which was then approved by the RCA on August 27, 2019. The RCA submitted the DBESP to the Wildlife Agencies, who received it on August 28, 2019. The Wildlife Agencies had 60 days to provide comments or concurrence on the DBESP. This review period concluded on October 28, 2019 and comments were provided by the Wildlife Agencies on October 28, 2019. The RCA concurred that no further changes were required; however, the Project Applicant has agreed to add additional clarification to Mitigation Measures 2, 4, and 7 of this document. Circulation of the Project DBESP was conducted in compliance with the requirements of the MSHCP.

The DBESP concluded that the Project is being implemented consistent with Section 6.1.2 of the MSCHP based on the following:

- No plant species targeted for conservation in Section 6.1.2 are known or expected to occur within the Riparian/Riverine areas being impacted.
- The Project has been redesigned resulting in a 66 percent reduction in Riparian/Riverine impacts from the previously approved project and avoids 83 percent of all Riparian/Riverine resources.
- Edge effects (including lighting, noise, trash/debris, urban and stormwater run-off, toxic materials, exotic plant and animal infestation, dust, trampling, and unauthorized recreation) to the MSHCP conservation area shall be minimized by the measures described in Section 6.1.4 and by landscaping, elevation difference, minimization of effects, and compensatory mitigation.
- Mitigation for direct impacts will total 5.6534 acres composed of off-site purchase of credits from an approved Mitigation Bank or In Lieu Fee program, or off-site habitat restoration. On-site conservation of a minimum of 10.21 acres will also result from Project implementation. The combination of on-site conservation/avoidance and credits and/or off-site mitigation will offset losses of riparian function and value.[33]

[33] HELIX. (2019). *Murrieta Hills Project Determination for Biologically Superior or Equivalent Preservation*. EIR Appendix 9.3.2.

LOCAL

City of Murrieta General Plan

CONSERVATION ELEMENT

This purpose of the Conservation Element is to provide direction regarding the conservation, development, and utilization of natural and cultural resources. It serves as a guide for the City of Murrieta, its residents, and its businesses to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve, or conserve these resources. The Conservation Element considers the following resources in the natural environment: water; hills and ridges; and mineral, paleontological, and biological resources. It also considers resources within the built environment: urban ecology, farmland, cultural, energy, and solid waste.

Goal CSV-8: ***Conservation of biological resources through habitat preservation and restoration, in coordination with other regional effort and in compliance with state and federal mandates.***

Policy CSV-8.1**:** Facilitate the conservation of habitat areas and wildlife corridors under the Western Riverside Multiple Species Habitat Conservation Plan.

RECREATION & OPEN SPACE ELEMENT

The following Community Priorities relate most directly to this Element:

- Protect the natural beauty of the mountains, hills, and waterways.
- Provide abundant parks and facilities for recreational activities, and cultural amenities.
- Provide ample activities for all ages of youth, and jobs for teens.

Goal ROS-7: ***Open space areas are planned to protect, conserve, and utilize resources of unique character and value for the community.***

Policy ROS-7.1: Preserve and enhance open space resources in Murrieta.

Policy ROS-7.2: Designate open space to preserve habitat and scenic views of natural areas.

Policy ROS-7.4: When possible, link open space and parks for the movement of wildlife and people.

Goal ROS-8: ***New development is part of a coordinated system of open space, parkland, recreation facilities, and trails.***

Policy ROS-8.1: Encourage the provision of parks, recreation facilities, and/or open space in new development and redevelopment projects.

City of Murrieta Municipal Code

MURRIETA MUNICIPAL CODE §16.42

The purpose of Murrieta Municipal Code (MC) §16.42 is to provide for the protection, preservation, and maintenance of native oak, sycamore, and cottonwood trees, trees of historic or cultural significance, groves and strands of mature trees and mature trees in general that are associated with proposals for

development. It is also the intent of this chapter to perpetuate these trees through the replacement of trees removed as a result of new development.

A protected tree is any of the following:

A. Native oak with a diameter at breast height of four inches or greater. Smaller trees may also be protected under special circumstances as determined by the director;

B. Trees of historical or cultural significance as identified by council resolution;

C. Significant groves or stands of trees;

D. Mature trees located on a parcel of one acre or more. Smaller trees may also be protected under special circumstances as determined by the director; or

E. Any tree required to be planted or preserved as environmental mitigation for a discretionary permit.

4.3.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if it 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 (see Impact 4.3-1);
- 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 (see Impact 4.3-2);
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (see Impact 4.3-3);
- 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 (see Impact 4.3-4);
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (see Impact 4.3-5); or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (see Impact 4.3-6).

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning

biological resources. This analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on biological resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on significance criteria/threshold's application outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by HELIX and Kimley- Horn; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The applicable planning documents that have been completed can be found in Appendix 9.3: *Biological Resources Reports*, including: (1) *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis* (HELIX 2019); (2) *Murrieta Hills Project Determination of Biologically Superior or Equivalent Preservation* (HELIX 2019); (3) *Murrieta Hills Project General Biological Resources Assessment* (HELIX 2019); (4) *Minor Amendment Request for Inclusion of Warm Springs Parkway and McElwain Road as Covered Activities Under the Multiple Species Habitat Conservation Plan* (HELIX 2017); and (5) *Memorandum - Murrieta Hills Fuel Modification Clearing Adjacent to Riverine Resources*, Part 1 dated March 2019 and Part 2 dated July 2019, both parts prepared by HELIX. The determination that a Project component will or will not result in "substantial" adverse effects on biological resources considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- The Project has been reduced, in terms of both unit count and development footprint in comparison to the previously approved Specific Plan. In addition, in response to comments received on the Notice of Preparation (NOP), input provided during stakeholder outreach, and as a result of various technical report and study findings, the Project Applicant has further modified the Project following the NOP release, to provide additional natural open space.
- Open Space (OS-1) will consist of approximately 609 acres of conserved and permanently preserved natural topography and vegetation that extend from the development areas to the borders of the MHSPA area. This open space will be offered for dedication to the RCA and preserved in perpetuity as part of the MSHCP system.
- Linear Nature Park (OS-2) will consist of approximately 37 acres and will preserve an existing riparian corridor through the central portion of the development area, containing coast live oak woodland, southern coast live oak riparian forest, southern willow scrub, and southern

cottonwood-willow riparian forest. The same classification of open space is also included in Planning Areas (PAs) 3, 4, and 7.

4.3.5 IMPACTS AND MITIGATION MEASURES

Impact 4.3-1: **Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

A substantial adverse effect to special-status species occurs if a project would: (1) reduce the population size or reduce the area of occupied habitat of a rare, threatened, or endangered species; or (2) reduce the population size or reduce the area of occupied habitat of a locally uncommon species. A substantial adverse effect on a special-status wildlife species occurs if a project would: (1) reduce the known distribution of a species; (2) reduce the local or regional population of a species; (3) increase predation of a species, leading to population reduction; (4) reduce habitat availability sufficiently to affect potential reproduction; or (5) reduce habitat availability sufficiently to constrain the distribution of a species and not allow for natural changes in distributional patterns over time.

The Project consists of an impact area and a preservation area with both totaling approximately 974 acres. Please note that the approximately 974 acres includes 1.9 acres of land located around the reservoir located just off-site adjacent to the north-central portion of the site and all of the Keller Road ROW. The main development of the Project will take place within the impact area of approximately 362 acres, which includes areas impacted by fuel modification and grading. The preservation area encompasses approximately 612 acres of the Project and will not be impacted by the disturbances experienced in the impact area.

Project construction is anticipated to occur in three primary phases. The greatest disturbance will occur during activities associated with the grading phase. This phase of construction has the potential to create the highest levels of disturbance due to its disruptive nature. The Project has been substantially redesigned from the prior Specific Plan approval, and further redesigned following release of the NOP, to preserve the majority of the site in natural open space and protect sensitive biological resources within the development area. Project design, impact analysis and mitigation has been closely coordinated with the RCA, as discussed further in Impact 4.3-6, including special consideration of FMZs. Approximately 63 percent (approximately 609 acres) of the Project is proposed to be permanent, open space, as summarized further in the PDFs noted above.

SENSITIVE PLANTS

The Project includes impacts to sensitive plants in addition to the CASSA species (round-leaved filaree). These impacts include approximately 14,850 (56 percent of the on-site population) individual long-spined spineflower; 1,500 (33 percent) Parry's spineflower; 270 (36 percent) Palmer's grapplinghook; and 50 (100 percent) paniculate tarplant. See Exhibit 4.3-5, *Rare Plant Impacts* for locations of identified plant populations.

Long-spined spineflower and **Palmer's grapplinghook** are fully covered species under the MSHCP that do not require species specific mitigation. Both species will benefit from on-site conservation through MSHCP preservation: 11,510 individuals of long-spined spineflower and 3,040 individuals of Palmer's grapplinghook will be conserved.

Parry's spineflower will be considered a fully covered species under the MSHCP once 10 distinct populations of a minimum of 1,000 individuals are conserved. The Project proposes conservation through MSHCP preservation of approximately 66 percent (3,056 individuals) of the plants that occur on the property; Exhibit 4.3-5, *Rare Plant Impacts*. This conservation includes a patch of approximately 1,680 individuals, and another of over 500 individuals near the northwest and southwest edges of the property; a patch of approximately 350 individuals near the western edge of the Project impact area; and a patch of approximately 150 individuals just south of the eastern side of the Project impact area. The proposed conservation of over 3,000 individuals that includes a patch of approximately 1,680 plants qualifies as one of the 10 populations required to consider this species adequately conserved and covered under the MSHCP.

Paniculate tarplant is not a MSHCP-covered species. It is a CNPS list 4.2 sensitive plant species. CNPS list 4 is a watch list of plant species that are not rare on a statewide basis but are limited in distribution or uncommon enough that their status should be monitored. Impacts to 50 individual paniculate tarplant are not significant, and do not require species specific mitigation.

Rare plant surveys conducted in 2006, 2008, and 2012 were all negative for NEPSSA plant species. No NEPSSA plant species occur on the property. Refer to EIR Appendix 9.3 for additional information.

Overall, impacts to sensitive plants are considered less than significant.

SENSITIVE ANIMALS

The coastal California gnatcatcher, federally listed as threatened and a California state species of concern, was observed on the site. San Diego black-tailed jackrabbit, southern California rufous-crowned sparrow, Cooper's hawk, and red-diamond rattlesnake are California state species of concern, and were observed in the study area. The unlisted species, white-tailed kite, a CDFW fully protected species, and California horned lark, a CDFW watch list species, are also present in the study area. All of these species are fully covered under the MSHCP and do not require species specific mitigation. The MSHCP does not cover impacts to nesting birds that are protected under the MBTA. Impacts to nesting birds such as Cooper's hawk, southern California rufous-crowned sparrow, white-tailed kite, and all other birds protected under the MBTA are considered significant; refer to Impact 4.3-4 for further discussion and applicable mitigation measures.

The Project would not affect burrowing owls, since no individuals or active burrow locations were observed on site, or within the Keller Road outfall area, during focused surveys. However, in compliance with MSCHP survey guidelines for burrowing owls, a pre-construction burrowing owl survey will be conducted. See MM BIO-1 and MM BIO-2 (see page 4.3-46).

WILDLAND URBAN INTERFACE

When projects develop in natural settings, the edge of the grading or development footprint that interfaces with remaining natural habitat is often referred to as the "Wildland Urban Interface" or WUI.

The acronym WUI is often use in connection to fire hazard planning considerations where development abuts native vegetation. However, WUI can also refer to potential indirect impacts of projects along the development edge. Project effects at the WUI can be attributable to such factors as increased noise from site activities, water quality concerns associated with site runoff, and incidental effects from increased human activity due to proposed development proximity to natural open space areas. Project design has minimized potential impacts to sensitive species through consistency with MSHCP Section 6.1.4 (refer to additional discussion under Impact 4.3-6).

The site fire risk analysis resulted in the determination that wildfire has occurred and will likely occur near the Project site again. However, the Project will include ignition resistant landscapes and structures and firefighters will have needed defensible space and access with implementation of specified measures. Project areas will include FMZs that will be suitable to protect the Project from anticipated wildfires that may burn in adjacent areas. Fuel modification or thinning completed in accordance with the Project's FPTR (EIR Appendix 9.11.1) includes the following general classifications: Fuel Modification Zone 1A, 1 and 2. Zone 1A is the first 20 feet (rear yard) from the structure to the lot line for those lots adjacent to natural open space around or within the development footprint. Zone 1 is all public and private areas located between the lot line and 50 feet outward. Zone 2 is all public and private areas located between the outside edge of Zone 1 and 100 feet outward. There is also an FMZ Augmentation Zone (sometimes referred to as FMZ 3) for non-jurisdictional areas within the LNP which will be maintained as an FMZ through annual maintenance so that vegetation does not exceed four inches in height. See Section 4.16, *Wildfires*, for further discussion regarding wildfire risks.

As noted previously in this section, PDFs have substantially reduced potential biological resources impacts, through considerable reduction in the Project's overall development footprint in comparison to the previously approved Specific Plan, and further site design modifications since release of the NOP and stakeholder outreach. The open space area will be offered for dedication to the RCA in furtherance of the RCA's MSHCP implementation goals.

Off-Site Construction Impacts

Immediately upon obtaining access to the McElwain Road off-site access area, a general biological assessment of the area shall be conducted. See MM BIO-3 (see page 4.3-46). NEPSSA surveys of the off-site access area for the McElwain Road extension, in which access was not granted by landowner during surveys, shall be conducted prior to grading to ensure compliance with Section 6.1.3 of the MSHCP (see Impact 4.3-6 for additional discussion). Survey results shall be provided to the RCA and wildlife agencies for review, and to the Lead Agency for final approval. See MM BIO-4 (see page 4.3-47).

Construction of the utility improvements along Keller Road and Zeiders Road will not cause any impacts to sensitive or special status species. The construction will be temporary, gradually moving down the length of the roads as trenching occurs and then is backfilled and the roads are resurfaced. The minor (less than 0.1 acre) off-site drainage improvements for an outfall structure located along the north side of Keller, west of Zeiders Road, will also not affect any sensitive animal species or plant communities based on supplemental field visit conducted by the Project biologist in May 2019. This visit is documented in Appendices 9.3.1 through 9.3.3 of this EIR.

OPERATIONS

Operations of the Project will not have a significant effect on sensitive plants, animals or their habitat. Once construction activities for the Project are completed, no additional impacts will occur with Project operations as it relates to sensitive species. Edge effects (including lighting, noise, trash/debris, urban and stormwater run-off, toxic materials, exotic plant and animal infestation, dust, trampling, and unauthorized recreation) to the MSHCP conservation area shall be minimized by the measures described in MSHCP Section 6.1.4 and by landscaping, elevation difference, minimization of effects, and compensatory mitigation. Therefore, impacts will be less than significant, and no further mitigation will be required other than that noted in Impact 4.3-6 regarding MSHCP compliance.

Off-Site Operations Impacts

Refer to Operations discussion above.

MITIGATION MEASURES

MM BIO-1: A **Pre-Construction Burrowing Owl Survey** will be conducted within 30 days prior to initiation of Project ground-disturbing activities in accordance with the MSHCP Species-Specific Objective 6 survey instructions to avoid direct take of burrowing owls. If burrowing owls have colonized the Project site prior to the initiation of construction, the Project Applicant should immediately inform RCA and the Wildlife Agencies, and coordinate on the potential need for a *Burrowing Owl Protection and Relocation Plan*, prior to initiating ground disturbance.

MM BIO-2: **MSHCP Section 6.3.2 Additional Survey Needs and Procedures – Burrowing Owl.** Upon obtaining access to the right-of-way area, the Project Applicant shall conduct a full biological assessment for MSHCP Section 6.3.2 resources at the McElwain Road off-site area prior to ground-disturbing activities. The habitat assessment (and surveys if necessary) will be conducted by a biologist knowledgeable in burrowing owl habitat, ecology, and field identification of the species and burrowing owl sign in accordance with the MSHCP species survey protocols for the burrowing owl. The survey(s) shall be conducted under conditions conducive to encountering the species (I.e., appropriate time of year [breeding season], time of day, and weather conditions), as dictated by professional requirements and standards. Prior to any ground-disturbing activities, the results of this assessment will be provided to the RCA and the Wildlife Agencies for review, and to the Lead Agency for final approval. If burrowing owls are observed, the Project Applicant shall immediately inform RCA and the Wildlife Agencies, and coordinate on the potential need for a *Burrowing Owl Protection and Relocation Plan*, prior to initiating ground disturbance.

MM BIO-3: **General Biological Assessment.** Upon obtaining access and prior to ground disturbing activities, the Project Applicant shall conduct a general biological assessment of the McElwain Road off-site area to (1) determine whether there are any sensitive biological resources such as wetlands, streams, or habitats for special status species; (2) to accurately map any biological constraints for the Project; and (3) to determine whether the Project would result in potentially significant adverse biological impacts, pursuant to CEQA. The general biological assessment will be conducted by a botanist/biologist with

expertise in the plant and animal species of western Riverside County. The assessment shall be conducted under conditions conducive to encountering the species (I.e., appropriate time of year [breeding/blooming season], time of day, and weather conditions), as dictated by professional requirements and standards. Prior to any ground-disturbing activities, the results of this assessment will be provided to the RCA and the Wildlife Agencies for review, and to the Lead Agency for final approval.

MM BIO-4: **MSHCP Section 6.1.3 Protection of Narrow Endemic Plant Species.** Upon obtaining access, the Project Applicant shall conduct a full biological assessment for MSHCP Section 6.1.3 resources at the McElwain Road off-site area prior to ground-disturbing activities. The habitat assessment (and surveys if necessary) will be conducted by a botanist/biologist with expertise in the plant species of concern in accordance with the MSHCP guidance for Area 4 of the NEPSSA. The survey(s) shall be conducted under conditions conducive to encountering the species (I.e., appropriate time of year [blooming season), as dictated by professional requirements and standards. Prior to any ground-disturbing activities, the results of this assessment will be provided to the RCA and the Wildlife Agencies for review, and to the Lead Agency for final approval. If NEPSSA species are observed, the Project Applicant shall immediately inform RCA and the Wildlife Agencies, and coordinate on the potential need for appropriate mitigation, prior to initiating ground disturbance.

Impact 4.3-2: **Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

Impact 4.3-3: **Would the Project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

Because riparian habitats and protected wetlands are often overlapped with other state or federally protected lands, these two impacts will be analyzed together in the following discussion.

CONSTRUCTION

Consistency with MSHCP Section 6.1.2, Protection of Species Associated with Riparian/ Riverine Areas and Vernal Pools

Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, states:

> "The purpose of the procedures described in this section is to ensure that the biological functions and values of these areas throughout the MSHCP Plan Area are maintained such that Habitat values for species inside the MSHCP Conservation Area are maintained."

The Project complies with the policies of Section 6.1.2 that protect species associated with vernal pools and Riparian/Riverine areas. No vernal pools exist on-site or within the off-site areas, and no vernal pool species are expected to occur. None of the plant or animal species listed in Section 6.1.2 was observed or are expected to occur in the Project area or off-site areas.

No vernal pools were observed or are expected to occur on-site. The Project site straddles tributaries to two watersheds: Santa Margarita River and San Jacinto River. The Project site is situated in the upper reaches of these watersheds. The off-site access area for the McElwain Road extension was assessed for potential waters via binoculars, aerial photographs, and topographic maps. A jurisdictional delineation will be conducted of the McElwain Road off-site access area once access to the right-of-way is acquired in accordance with MM BIO-8 (see page 4.3-54). The off-site access area for the Keller Road outfall structure was formerly delineated. Based on these observations, no vernal pools exist in the off-site areas.

Section 6.1.2 of the MSHCP focuses on protection of Riparian/Riverine areas and vernal pool habitats capable of supporting MSHCP covered species, particularly within the identified Conservation Area. The functions of the unvegetated streams on the property are primarily water conveyance, sediment transport, and energy dissipation (hydrologic regime and flood attenuation). These drainages are considered to have limited value because:

- They do not have habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or depend upon soil moisture from a nearby freshwater source;
- They are extremely ephemeral in nature, flowing only during and immediately after storm events; and,
- They do not support any of the species targeted for conservation under Section 6.1.2.

The Project would impact 0.97 acre of riparian vegetation and 1.13 acres of unvegetated streambed for a total Riparian/Riverine impacts of 2.10 acres. The riparian vegetation impacts consist of 0.42 acres of coast live oak woodland, 0.04 acres of riparian woodland, 0.36 acres of southern willow scrub, and 0.15 acres of mule fat scrub. Fuel modification planned in proximity of the Riverine Resources are not expected to result in complete loss of functions and services associated with Riverine Resources, although some reduction in these functions and services may occur. An analysis of potential impacts was prepared by HELIX (2019) and is included as Appendix D of EIR Appendix 9.3.3. Based on this, impacts have been assessed to 0.5845 acre of Riverine/streambed within Zones 2 and 3, and 0.0188 acre for Zone 1 for a total impact area of 0.6010 acre (Table 4.3-8, *Riparian/Riverine Impacts (Acres).* The Project proposes to avoid impacts to approximately 83 percent of the Riparian/Riverine habitats on the Project site[34] through MSHCP preservation and creation of a central LNP. As noted above, plant and animal species associated with Riparian/Riverine habitats do not occur on-site or within the off-site access area for the Keller Road outfall structure. None of the species covered under Section 6.1.2 occur on-site as evident by a lack of potential habitat or where habitat occurs focused surveys have had negative results.

[34] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* La Mesa, CA: HELIX. EIR Appendix 9.3.3.

Table 4.3-8: Riparian/Riverine Impacts (Acres)

Habitat	Existing	Impacted	Avoided
Coast live oak woodland	7.02	0.42	6.60
Riparian Woodland	0.07	0.04	0.03
Southern willow scrub	1.54	0.36	1.18
Mule fat scrub	0.47	0.15	0.32
Streambed*	3.21	1.13	2.08
Streambed (Fuel Modification)	Included above	0.6010	N/A
TOTAL	**12.31**	**2.7010**	**10.21**

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 14: Riparian/Riverine Impacts. La Mesa, CA: HELIX.
*Streambed impacts include 0.04 acre that occurs off-site.

The Project would impact 0.36 acre of habitat with potential to support least Bell's vireo; Exhibit 4.3-6, *Potential Least Bell's Vireo Habitat.* Prior habitat surveys resulted in a determination that no areas were occupied by either the least Bell's vireo or southern willow flycatcher.

Potential habitat for Vernal pool fairy shrimp, Riverside fairy shrimp and Santa Rosa Plateau fairy shrimp does not occur on the Project site or within the off-site access areas. The Project site includes a 4.4-acre patch of clay soils located on the southwest corner of the agricultural field in the northeast area of the Project site, which have been disturbed from years of disking and dry farming. This area of clay soils along with the rest of the Project site, does not include vernal pools, ephemeral basins, or similar habitat that could support fairy shrimp. As potential habitat for these species does not occur on the Project site, no surveys were warranted, and these species are not expected to occur on the Project site or off-site access areas.

As discussed throughout this section, the Project has been substantially redesigned from the previously approved Specific Plan to avoid many impacts to sensitive biological resources including Riparian/Riverine resources. Additional Project design changes since release of the NOP and subsequent stakeholder feedback have continued to reduce impacts.

All impacts to Riparian/Riverine resources will be mitigated by a combination of on-site preservation of 10.24 acres of Riparian/Riverine resources through MSHCP preservation and creation of a centrally located LNP, and either off-site restoration and/or off-site purchase of credits at an approved Mitigation Bank(s).

As discussed further below and under Impact 4.3-6, the Project has gone through an extensive MSHCP consistency review process with the RCA, including preparation of biological resource assessments, applicable focused surveys, a formal HANS process, and a DBESP report that demonstrates adequate mitigation of wetlands pursuant to the MSHCP.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTIONAL HABITAT

The Project proposes impacts to 2.10 acres of CDFW jurisdictional habitats made up of 2.06 acres on-site and 0.04 acres off-site. The impacts are comprised of 0.42 acres of coast live oak woodland, 0.04 acres of riparian woodland, 0.36 acres of southern willow scrub, 0.15 acres of mule fat scrub, and 1.09 acres of streambed (Table 4.3-9 *CDFW Impacts and Avoidance).* The streambed impacts include 0.04 acre that occur off-site.

As previously outlined in this section, fuel modification or thinning completed in accordance with the Project's FPTR (EIR Appendix 9.11.1) includes the following general classifications: FMZs 1A, 1 and 2. Zone 1A is the first 20 feet (rear yard) from the structure to the lot line for those lots adjacent to natural open space around or within the development footprint. Zone 1 is all public and private areas located between the lot line and 50 feet outward. Zone 2 is all public and private areas located between the outside edge of Zone 1 and 100 feet outward. There is also an FMZ Augmentation Zone (sometimes referred to as FMZ 3) for non-jurisdictional areas within the LNP which will be maintained as an FMZ through annual maintenance so that vegetation does not exceed four inches in height. See Section 4.16, *Wildfires*, for further discussion regarding wildfire risks. The FMZs involves above ground impacts comprised of tree trimming, vegetation thinning, vegetation mowing and drip irrigation installation.

Fuel modification planned in proximity of the Riverine Resources are not expected to result in complete loss of functions and services associated with Riverine Resources, although some reduction in these functions and services may occur. An analysis of potential impacts was prepared by HELIX (2019) and is included as Appendix 9.3.6 to this EIR. Based on this analysis, a total impact of approximately 0.601 acre to Riverine Resources would occur 19 separate and small areas in FMZs (0.0188 acre in FMZ 1; 0.1387 in FMZ 2; and 0.4435 acre in FMZ 3). All areas are considered jurisdictional.

Based on the effect of the FMZs specified vegetation modifications on the functions and services of the areas subject to fuel modification, the Project Applicant is proposing mitigation based on ratios agreed to with the RCA. The mitigation criteria are described in Appendix 9.3.6 of this EIR. Each drainage was reviewed and broken into segments by mitigation criteria combination. A single drainage could consist of multiple segments. The area of each segment was calculated, and the appropriate mitigation ratio applied to the impacts within that given segment. All Zone 1 areas are automatically mitigated at a ratio of 2:1.

Based on the FMZ mitigation requirements assessment, impacts to 0.5822 acre of Riverine/streambed within Zones 2 and 3 require 0.4458 acre of mitigation. Zone 1 mitigation totals 0.0376 acre, and when combined with Zones 2 and 3, the total mitigation obligation is 0.4834 acre. Mitigation will be accomplished through the purchase of 0.4834 re-establishment credits from the Riverpark Mitigation Bank.[35]

The CDFW impacts are identical to the MSHCP Riparian/Riverine habitat impacts (Exhibit 4.3-7, *Riparian/Riverine and CASSA Plant Impacts).* Impacts to CDFW jurisdictional habitats would require a Section 1602 Stream Alteration Agreement from the CDFW and are regarded as significant. However, the proposed mitigation for these impacts reduces the level of these impacts to less than significant with mitigation incorporated. See MM BIO-5 and MM BIO-6 (see page 4.3-53).

[35] HELIX. (2019). *Memorandum - Murrieta Hills Fuel Modification Clearing Within and Adjacent to Riverine Resources*. (Part 2 dated July 2019). La Mesa, CA: HELIX. EIR Appendix 9.3.6.

Table 4.3-9: CDFW Impacts and Avoidance

Community	Existing		Impacted		Avoided	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Coast live oak woodland	7.02	4,242	0.42	151	6.60	4,091
Riparian woodland	0.07	56	0.04	31	0.03	25
Southern willow scrub	1.54	2,076	0.36	530	1.18	1,546
Mule fat scrub	0.47	474	0.15	217	0.32	257
Streambed*	3.17	43,046	1.09	15,390	2.08	27,656
Streambed (Fuel Modification)	Included above	Included above	0.6010		N/A	N/A
On-site Total	**12.27**	**49,894**	**2.6610**	**16,319**	**10.21**	**33,575**
Streambed-off-site*	0.04	500	0.04	500		
TOTAL	**12.31**	**50,394**	**2.7010**	**16,819**	**10.21**	**33,575**

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 13: CDFW Impacts and Avoidance. La Mesa, CA: HELIX.
* off site avoided streambed not included in avoidance totals

FEDERAL JURISDICTIONAL WATERS

The Project would impact a total of 0.59 acre of non-wetland WUS, made up of 0.57 acre on-site and 0.02 acre off-site (Exhibit 4.3-8, *Waters of the U.S. Impacts* and Table 4.3-10, *U.S. Army Corps of Engineers Impacts and Avoidance)*. These impacts will require a permit from the USACE under Section 404 of the CWA and a Section 401 Water Quality Certification from the Regional Water Quality Control Board. These impacts are considered significant. However, the proposed mitigation for these impacts reduces the level of these impacts to less than significant with mitigation incorporated. See MM BIO-5 and MM BIO-6 (see page 4.3-53).

The areas of USACE jurisdictional habitat within the FMZs are not included as impacts because no fill is proposed. USACE non-wetland waters within the FMZs total 0.33 acres.

Table 4.3-10: U.S. Army Corps of Engineers Impacts and Avoidance

Habitat	On-site		Impacted		Avoided*	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Non-wetland WUS.	2.13	49,875	0.57	16,096	1.56	33,779
Non-wetland WUS-off-site	0.02	500	0.02	500	0.02	1,524
TOTAL	2.15	50,375	0.59	16,596	1.56	33,779

Source: HELIX. (2019). Murrieta Hills Project *General Biological Resources Assessment.* Table 12: U.S. Army Corps of Engineers Impacts and Avoidance. La Mesa, CA: HELIX (EIR Appendix 9.3).
*: Avoidance total does not include avoided off-site areas.

Off-Site Construction Impacts

Construction of the utility improvements along Keller Road and Zeiders Road will not cause any impacts to riparian or wetland habitats. Nor will the minor (less than 0.1 acre) off-site drainage improvements for an outfall structure located along the north side of Keller, west of Zeiders Road. For the utility improvements, the construction will be temporary, gradually moving down the length of the roads as trenching occurs and then is backfilled and the roads are resurfaced. Access to the off-site access area for

the McElwain Road extension was not granted by the property owner; however, MM BIO-7 and MM BIO-8 (see page 4.3-54) would ensure surveys are completed once access to the right-of-way is acquired.

OPERATIONS

Once constructed, the operation of the MHSPA will not impact any riparian habitat, wetland, or other sensitive natural community. Therefore, impacts will be less than significant, and no further mitigation will be required other than that noted in Impact 4.3-6 regarding MSHCP compliance.

Off-Site Operations Impacts

Refer to above Operations discussion.

MITIGATION MEASURES

The proposed mitigation for Riparian/Riverine resources is also the proposed mitigation for the impacts to 2.7010 acres of CDFW jurisdictional habitats. This mitigation will also cover the impacts to 0.59 acre of WUS. The final mitigation for impacts to waters of the State and WUS will be determined by the appropriate agencies during the permitting process.

Mitigation for impacts to Riparian (vegetated) resources will be at a 3:1 ratio, for a total of 2.91 acres. The Riverine Resources (unvegetated streambed) will be mitigated at a 2:1 ratio, for a total of 2.26 acres. An additional 0.4834 acres will be required for impacts to Riverine Resources associated with FMZs. A total of 5.6534 acres of mitigation will occur via off-site purchase of credits from an approved Mitigation Bank or In Lieu Fee program, off-site habitat restoration, or other mitigation method as approved by the Lead Agency and other resource agencies. See Table 4.3-11, *Mitigation for Impacts to Riparian/Riverine Resources* for a breakdown of mitigation required per vegetation/resource type.

If habitat restoration is proposed, a Habitat Mitigation and Monitoring Program will be prepared and submitted to the City, USFWS, CDFW and RCA for review, with the City having final approval authority. The Mitigation Bank and In Lieu Fee options will provide for mitigation within a much broader conservation context with resources that will be of an equal or greater conservation value to the coast live oak woodland, riparian woodland, southern willow scrub, mule fat scrub and streambed resources.

The proposed mitigation bank option is the Riverpark Mitigation Bank. The Riverpark Mitigation Bank provides for re-establishment of alkali playa and vernal pool habitats which are two of the rarest habitat types in the MSHCP. Mitigation for unavoidable impacts to Riparian/Riverine areas will be biologically equivalent to resources being impacted by the Project.

There will be a minimum of 6.11 acres of on-site Riparian/Riverine conservation through MSHCP preservation and 4.10 additional acres of avoidance in the LNP. The 4.10 acres of avoidance within the LNP will be protected via a deed restriction that precludes impacts to these Riparian/Riverine resources.[36]

[36] HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment*. La Mesa, CA: HELIX. EIR Appendix 9.3.3.

Table 4.3-11: Mitigation for Impacts to Riparian/Riverine Resources

Vegetation Type	Impacts (Acres)	Mitigation Ratio	Mitigation Required*
Coast live oak woodland	0.42	3:1	1.26
Riparian woodland	0.04	3:1	0.12
Southern willow scrub	0.36	3:1	1.08
Mule fat scrub	0.15	3:1	0.45
Streambed	1.13	2:1	2.26
Streambed (Fuel Modification)	0.6010	See Appendix 9.3.6	0.4834
TOTAL	**2.7010**		**5.6534**

Source: HELIX. (2019). *Murrieta Hills Project General Biological Resources Assessment.* Table 15: Mitigation for Impacts to Riparian/Riverine Resources. La Mesa, CA: HELIX. EIR Appendix 9.3.3.

Refer to mitigation measures in Impact 4.3-6 regarding open space dedication pursuant to the MSHCP and negotiations with the RCA, which serves to avoid impacts to the majority of the site's natural habitat and preserve important habitat and linkages.

MM BIO-5: **Direct Impacts to Riparian/Riverine Habitat**. Prior to issuance of grading permits, the Project Applicant shall obtain regulatory agency permits for impacts to riparian vegetation, consistent with recommendations in the Project DBESP report approved by the Lead Agency, RCA, CDFW, and USFWS, and as summarized in EIR Table 4.3-11: *Mitigation for Impacts to Riparian/Riverine Resources* (see Appendix 9.3.3). The Project mitigation plan includes approximately 4.10 acres of avoidance within the LNP. The 4.10 acres of avoidance within the LNP will be protected via a deed restriction (or other acceptable means) that protects these Riparian/Riverine resources from construction and operational impacts of the Project. In addition, approximately 5.6534 acres of mitigation will occur via off-site purchase of credits from an approved Mitigation Bank or In Lieu Fee program, off-site habitat restoration, or other mitigation method as approved by the City, RCA and applicable resource agencies. If habitat restoration is proposed, a Habitat Mitigation and Monitoring Program will be prepared and submitted to the Lead Agency, RCA, CDFW and USFWS for review, with the City, as Lead Agency, having final approval authority.

MM BIO-6: **Indirect Impacts to Riparian/Riverine Habitat.** All measures noted in the DBESP, Section VIII.B. Mitigation (DEIR Appendix 9.3.2) shall be shown on Project grading and improvement plans, and included in Worker Environmental Awareness Training. These measures include but are not limited to the following:

- Use of standard Best Management Practices (BMPs), including but not limited to silt fences, straw or hay bales, and fiber rolls, to minimize the impacts during construction;
- Storage of equipment in non-Riparian/Riverine areas, outside of drainages except as required by Project design (restoration, trash removal, etc.);
- Implementation of source control and treatment control BMPs to minimize the potential contaminants that are generated during and after construction. Source control BMPs include landscape planning, roof runoff controls, trash storage areas,

use of alternative building materials, and education of future tenants and residents. Treatment control BMPs includes detention basins, vegetated swales (bio-swales), drain inlets, and vegetated buffers. Water quality BMPs will be implemented throughout the Project to capture and treat contaminants.

- Keeping the Project clean of debris to the extent possible to avoid attracting predators. All food-related trash items shall be enclosed in sealed containers and regularly removed from site.
- Strict limitation of employee activities, vehicles, equipment, and construction material to the Project footprint, staging areas, and designated routes of travel.
- Fencing construction limits with orange snow screen and maintenance of exclusion fencing until the completion of construction activities.
- 0.39 acre of Riparian/Riverine impacts are proposed to be limited to vegetation removal, with no ground impacts.
- The Project Applicant or its designee shall submit a weekly report to the City that demonstrates compliance with the above measures.

MM BIO-7: **MSHCP Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools.** Upon obtaining access, the Project Applicant shall conduct a full biological assessment for MSHCP Section 6.1.2 resources at the McElwain Road off-site area prior to ground-disturbing activities. The habitat assessment (and surveys if necessary) will be conducted by a botanist/biologist with expertise in the plant and animal species of concern and their habitat in accordance with the survey requirements set forth in Section 6.1.2 of the MSHCP. The survey(s) shall be conducted under conditions conducive to encountering the species (I.e., appropriate time of year [breeding/blooming season], time of day, and weather conditions), as dictated by professional requirements and standards. Prior to any ground-disturbing activities, the results of this assessment will be provided to the RCA and the Wildlife Agencies for review, and to the Lead Agency for final approval. If species associated with Riparian/Riverine Areas and Vernal Pools are observed, the Project Applicant shall immediately inform RCA and the Wildlife Agencies, and coordinate on the potential need for appropriate mitigation, prior to initiating ground disturbance.

MM BIO-8 **Jurisdictional Delineation**. Upon obtaining access to the off-site portion of the McElwain Road corridor and prior to the preparation of applicable permit packages (i.e., CWA Section 401/404 permits and/or CDFW Section 1602 consultation), the Project Applicant shall conduct a jurisdictional delineation of the McElwain Road off-site area, in accordance with all professional rules, processes and procedures, to determine the presence/absence of Waters of the U.S. and/or Waters of the State, including wetlands (the "Off-site JD"). A jurisdictional report shall be prepared of the findings of the Off-site JD, and prior to the initiation of work activities within jurisdictional waters, the Project Applicant shall engage the USACE and prepare applicable permit packages to address any proposed impacts to Waters of the U.S. and the State, including wetlands, if applicable. The final mitigation for impacts to Waters of the U.S. and State will be determined by the USACE during the permitting process, consistent with MSHCP requirements.

Impact 4.3-4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Due to the undeveloped nature of the Project site, development of the Project could disturb or destroy active migratory bird nests including eggs and young. Disturbances to or destruction of migratory bird eggs, young, or adults is in violation of the MBTA and is, therefore, considered to be a potentially significant impact. However, the Project avoids impacts to approximately 612 acres, of which approximately 608 acres directly contribute to the conservation goals of Cell Group C, made up of high-quality habitat with potential to support migratory and live-in habitat for the planning species and a multitude of other MSHCP covered species.

The Project occurs at the western end of MSHCP Proposed Constrained Linkage 16 and on the eastern end of Proposed Linkage 8; Exhibit 4.3-4. The conservation to occur on-site (Cell Group C) will contribute to the assembly of Proposed Linkage 8, with a small portion creating a connection to Proposed Constrained Linkage 16. As discussed further under Impact 4.3-6, in consideration of PDFs and recommended mitigation measures, no significant impacts would occur to MSHCP wildlife linkages.

McElwain Road has been added to the MSHCP as a Covered Activity through Minor Amendment No. 2017-01. This includes placement of a six-foot by six-foot box culvert in the channel bottom for wildlife movement, and placement of a second four-foot by four-foot box culvert outside of the 100-year floodplain to allow for wildlife movement during high storm events; Exhibit 4.3-11. As discussed further under Impact 4.3-6, including PDFs and mitigation measure relative to Section 7.5.2 of the MSHCP, the Project will incorporate design elements to allow for the movement of wildlife throughout the Project site including use of McElwain Road extension culverts.

In addition, all Project construction will comply with MBTA requirements as identified in the Project biological resources report (DEIR Appendix 9.3.3), including preconstruction migratory bird surveys and avoidance of tree removal during the active breeding season, as described in MM BIO-9 (see page 4.3-56). All Project construction activity, including each development phase, will be required to comply with MM BIO-9 (see page 4.3-56) to ensure impacts to nesting birds will not occur. Impacts will be less than significant with mitigation incorporated.

Off-Site Construction Impacts

Refer to discussion above regarding the McElwain Road extension. Construction of the utility improvements along Keller Road and Zeiders Road will not cause any impacts to 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 site. Nor will the minor (less than 0.1 acre) off-site drainage improvements for an outfall structure located along the north side of Keller, west of Zeiders Road. The construction will be temporary, gradually moving down the length of the roads as trenching occurs and then is backfilled and the roads are resurfaced.

OPERATIONS

Only the western pond turtle was identified as having the potential to use the Project site for migration. The status of this species on the Project site was low. Therefore, the Project would not 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. Therefore, once constructed, operations will result in a less than significant impact with mitigation incorporated.

Off-Site Operations Impacts

Refer to previous discussion.

MITIGATION MEASURES

MM BIO-9: **Nesting Bird Clearance Survey.** The clearing of vegetation shall occur outside of the bird breeding season (February 15 to August 31), unless a qualified biologist demonstrates to the satisfaction of the Lead Agency that all nesting is complete through completion of a Nesting Bird Clearance Survey. A Nesting Bird Clearance Survey report shall be submitted to the Lead Agency for review and approval prior to initiating clearing and grubbing during the breeding season. Clearing of upland vegetation outside of the bird breeding season would not require a Nesting Bird Clearance Survey.

Additionally, raptors (birds of prey such as Cooper's hawk and white-tailed kite) are known to begin nest building in January or February. If vegetation clearing is to occur between January 1 and February 15, a nesting raptor survey will be conducted. A buffer zone will be established by the Project biologist for any active raptor nest that is found to prevent impact to nesting raptors.

Impact 4.3-5: **Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Individual development projects in the MHSPA area would be constructed in compliance with the requirements of the Murrieta GP and the Murrieta MC. The Murrieta GP provides goals, policies, and implementation measures for the conservation of biological resources. Goal CSV-8 conserves biological resources and Goal ROS-7 encourages the planning of open space areas to protect, conserve, and utilize resources of unique character and value for the community. Impacts to biological resources have been substantially reduced in comparison to the previously approved Specific Plan, and further reduced since release of the NOP and subsequent stakeholder coordination, by setting aside the majority of the site in permanent natural open space. This natural open space preservation has substantially reduced potential impacts to sensitive biological resources including mature trees.

The Project will be constructed in compliance with Murrieta MC §16.28.040 (E) which states: Landscaping adjacent to the Western Riverside County Multi-Species Habitat Conservation Plan ("MSHCP") conservation areas shall avoid invasive species as listed in the MSHCP. Furthermore, the Project will avoid

the use of invasive plant species, especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential to cause harm to environmentally sensitive areas, in compliance with subsection B.1.i of Murrieta MC §16.28.060 – *Landscape Documentation Package*.

Murrieta MC §16.42 is intended to protect, preserve, and maintain native oak, sycamore, and cottonwood trees, trees of historic or cultural significance, groves and stands of mature trees and mature trees in general that are associated with proposals for development. While the MHSPA will allow for future development within the MHSPA area, each Project development phase will be required to comply with the guidelines in Murrieta MC §16.42.070 (below). Therefore, impacts will be less than significant.

Applicable Murrieta MC provisions include the following, and shall be implemented by the Project through MM BIO-10 (see page 4.3-58) and the City's normal development review process in conjunction with Murrieta MC §16.42.

A. **Permit Required.** No protected tree shall be removed, cut down, or otherwise destroyed, unless a tree removal permit has been approved by the director.

B. **Site Inspection.** Prior to the approval *of* a tree removal permit, the director shall inspect the premises and designate the tree(s) to be removed or relocated.

C. **Tree Replacement Required.** Where tree(s) are proposed for removal as part of a development project, the director shall require an appraised value report to be submitted by the applicant. When the trees to be removed are associated with a proposal for development, the appraised value *of* the removed trees shall be applied to increasing the amount of landscaping or within the proposed project or by planting minimum twenty-four- (24-) inch box trees of equal value within city rights-of-way or public parks.

   When trees proposed for removal are located on a parcel that is not associated with a current proposed development, the appraised value of the tree(s) shall be used to establish the value of replacement tree(s) to be planted on the property in the future. The director may require the posting of a bond or other surety to guarantee the replacement *of* trees in the future. The amount of the surety shall cover the appraised value of the existing trees, plus an additional twenty-five (25) percent to cover installation in the event the applicant should fail to install the trees.

   Trees for which no tree report has been required in compliance with Section 16.42.080 (Guidelines for Re-ports on Protected Trees), shall not be subject to appraisal or replacement by value.

D. **Procedures for Establishing Values of Trees.** The value of trees to be removed shall be based upon the most recent edition of the Guide for Establishing Values of Trees and Other Plants prepared by the council of tree landscape appraisers. An applicant for a tree removal permit shall submit an appraisal, prepared by a horticulturist, consulting arborist or licensed landscape architect.

E. **Diseased or Hazardous Trees.** In no case shall an applicant for a tree removal permit be required to replace or otherwise pay for the value of a tree that is diseased or in danger of collapse, or that the city has requested the removal of because of the hazardous condition or location of the tree.

F. **Notification of Pending Permit.** Written notification shall be made to the council, commission, and the city manager of a pending tree removal permit at least seven days prior to action on the permit. Notification shall include the considerations to be used in granting the permit as provided in Section 16.42.100 (Considerations for Approving Tree Removal Permits).

Off-Site Construction Impacts

All off-site construction improvements would be required to comply with the applicable provisions of MM BIO-10 and Murrieta MCs §16.42 and 16.28, as well as the MHSPA.

On-site and off-site Project construction will be in compliance with Murrieta GP and MC goals and standards as they pertain to biological resources. Project construction, both on-site and off-site, would not conflict with any local policies or ordinances protecting biological resources; therefore, impacts would be less than significant with mitigation incorporated.

OPERATIONS

Project operations will be conducted in compliance with Murrieta GP and MC goals and standards, as well as the MHSPA Homeowners Association's (HOA) Declaration of Covenants, Conditions, and Restrictions (CC&Rs), as they pertain to biological resources. Operation of the development projects within the MHSPA would not contribute to any impacts to any terrestrial environment, or any sensitive biological areas or species such that it conflicts with a local (City of Murrieta) policy or ordinance protecting biological resources. Development projects would be adjacent to open space and will be required to comply with the policies and goals within the Murrieta GP and applicable provisions of the Murrieta MC. Therefore, impacts would be less than significant.

Off-Site Operations Impacts

Refer to operations discussion above.

MITIGATION MEASURES

The Project will comply with applicable provisions of Murrieta MC §16.42, as referenced in MM BIO-10.

MM BIO-10: **Tree Preservation.** Prior to issuance of grading permits, all protected trees (generally native oaks with trunk diameter four inches or greater, and other living trees with 9.5-inch trunks or greater, as measured 4.5 feet above the root crown) within the Project development footprint shall be mapped for City Planning Department staff determination of Murrieta MC §16.42 compliance requirements.

Impact 4.3-6: **Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The Project is located within the Western Riverside MSHCP and as such, Project construction and operation requires MSHCP consistency determination. The Project Applicant and City staff have conducted extensive consultation with the RCA regarding MSCHP consistency through the HANS and Joint

Project Review process, including submittal and revision to required biological resource reports. These have included a General Biological Resources Assessment (DEIR Appendix 9.3.3), Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis (DEIR Appendix 9.31), and Determination of Biologically Equivalent or Superior Preservation Report (DEIR Appendix 9.3.2).

Consistent with the MSHCP process, the City of Murrieta and RCA have determined that the Project, with mitigation, is consistent with the MSHCP. The City and Project Applicant have approached MSHCP consistency early in the Project design process, incorporating substantial natural open space into the Project design, setting aside approximately 609 acres of permanent natural open space for dedication to the RCA, in addition to preserving internal open space features in the LNP, and requiring special construction and maintenance measures along the Project's WUI within FMZs. Key aspects of Project design and mitigation are reflected in the MHSPA and Tentative Tract Map (TTM) with respect to preservation of natural open space, and in MM BIO-11 and MM BIO-12 (see page 4.3-66) with respect to commitments to pay applicable MSHCP fees and dedicate the agreed upon natural open space to facilitate MSHCP conservation area implementation as administered by the RCA.

Multiple Species Habitat Conservation Plan Impacts/Consistency

As noted earlier, the Project site is located within Subunit 2, Lower Sedco Hills, in the Sun City/Menifee Valley Area Plan of the MSHCP; Exhibit 4.3-4. Conservation considerations related to the Criteria Cells in Subunit 2 are:

- Contains a portion of Proposed Constrained Linkage 16
- Contains a portion of Proposed Linkage 8

Planning species include:

- Bell's sage sparrow
- Coastal California gnatcatcher
- Grasshopper sparrow
- Southern California rufous-crowned sparrow
- Quino checkerspot butterfly

Biological issues and considerations are:

- Contribute to lower Sedco Hills portion of a habitat connection between the new Core Area in Antelope Valley and the Estelle Mountain/Lake Mathews Reserve area.
- Conserve existing populations and habitat of the coastal California gnatcatcher.
- Maintain wetlands for purposes of connection and wildlife dispersal, as well as wetland species conservation.
- Maintain Core and Linkage Habitat for Quino checkerspot butterfly.

The Project occurs at the western end of Proposed Constrained Linkage 16 and on the eastern end of Proposed Linkage 8; Exhibit 4.3-4. The conservation to occur on-site (Cell Group C) would contribute to the assembly of Proposed Linkage 8, with a small portion creating a connection to Proposed Constrained

Linkage 16. This is due to Proposed Constrained Linkage 16 primarily occurring east of I-215, while the Project site is on the west side of I-215. Land to be conserved will connect to proposed conservation to the southwest and east.

The planning species have a moderate to high potential to occur on the Project site, with the coastal California gnatcatcher and southern California rufous-crowned sparrow observed on-site. Thirty-one percent of the impacts (112.7 acres) are proposed to occur to agricultural land and disturbed habitat that provides little to no habitat for the planning species and only limited foraging habitat for raptors. Sixty-nine percent of the impacts are primarily to high-quality habitat (chaparral, sage scrub, grassland, and riparian) with potential to support planning species.

The Project avoids impacts to approximately 612 acres, of which approximately 608 acres directly contribute to the conservation goals of Cell Group C, made up of high-quality habitat with potential to support migratory and live-in habitat for the planning species and a multitude of other MSHCP covered species; Exhibit 4.3-9, *Vegetation Impacts.* This conservation represents approximately 62 percent of the site and will contribute to the assembly of MSHCP conservation area, specifically related to Constrained Linkage 8, and Proposed Constrained Linkage 16. The approximately 62 percent on-site conservation is consistent with the target conservation of 60 to 70 percent for MSHCP Cell Group C.

Project impacts include the northwestern edge of the portion of Proposed Constrained Linkage 16 that lies west of I-215. This portion of Proposed Constrained Linkage 16 consists of a triangular area adjacent to I-215, designed to connect the existing five-foot corrugated metal pipe (CMP) culvert under I-215 to Proposed Linkage 8 in the southern half of Cell Group C. This triangular area follows a stream that originates in Cell 5358 and flows under I-215 in the CMP culvert and forms the east-west axis of Proposed Constrained Linkage 16. The proposed impacts to Proposed Constrained Linkage 16 are to a minimal amount in the north edge, outside of the stream channel that forms the basis of the linkage. The revised Project footprint avoids an additional 1.8 acres of the linkage. The linkage is at its narrowest where it connects to the five-foot CMP culvert under I-215. The linkage rapidly widens from the five-foot pipe to an area that rapidly increase from approximately 160 feet wide to area that is more than 800 feet wide. The on-site portion of the linkage is made up of primarily chaparral on the south side of the stream and agriculture (dry crop) on the north. The lands within Proposed Constrained Linkage 16 proposed for impacts are currently used for agriculture.

McElwain Road has been added to the MSHCP as a Covered Activity through Minor Amendment No. 2017-01. This includes placement of a six-foot by six-foot box culvert in the channel bottom for wildlife movement, and placement of a second four-foot-by four-foot box culvert outside of the 100-year floodplain to allow for wildlife movement during high storm events; Exhibit 4.3-11.

Section 7.5.2 of the MSHCP recommends that culverts be a minimum of one to 1.5 meters for medium-sized wildlife that is anticipated to use this linkage and the six-foot by six-foot culvert proposed exceeds this requirement. The box culverts under McElwain Road would be approximately 200 feet long and would provide direct line of sight from end to end. The four-foot by four-foot box culvert would be approximately 140 feet long and provide direct line of sight from end to end. The proposed McElwain Road crossing of Proposed Constrained Linkage 16 would be located approximately 850 feet upstream (southwest) of the existing five-foot CMP culvert under I-215, leaving an area of open space between McElwain Road and I-215 too small to function as permanent live-in habitat for large animals. Thus, the proposed McElwain Road crossing will not isolate any significant live-in habitat from the remainder of Proposed Constrained

Linkage 16 or Proposed Linkage 8. The proposed culverts under McElwain Road will provide a wildlife crossing that is at least as functional as the existing five-foot-wide, 280-foot-long CMP culvert under I-215 and would not constitute a barrier to any animal that had successfully managed to cross under the freeway.

Based on this assessment, the Project is consistent with the conservation goals of Subunit 2 of the Sun City/Menifee Valley Area Plan.

Consistency with MSHCP Section 6.1.3

In compliance with Section 6.1.3, the Project would not affect any Narrow Endemic Plant Species, since no species are present on-site or within the off-site Keller Road outfall area. NEPSSA surveys of the off-site access area for the McElwain Road extension shall be conducted prior to grading to ensure compliance with Section 6.1.3 of the MSHCP. See MM BIO-4 (see page 4.3-47). Survey results shall be provided to the RCA and Wildlife Agencies for review, and to the City for final approval.

Consistency with MSHCP Section 6.1.4

MM BIO-13 (see page 4.3-66) includes measures to be implemented by the Project to minimize the identified potential indirect impacts to MSHCP conservation areas. These measures will serve to minimize the adverse effects of the Project on conservation configuration and will minimize management challenges that can arise from development located adjacent to conserved habitat.

Consistency with MSHCP Policy Section 6.3.2

In compliance with MSHCP Section 6.3.2, the Project will not affect burrowing owls, since no individuals or active burrow locations were observed on-site, or within the off-site Keller Road outfall area, during focused surveys. Focused rare plant surveys in 2006 found two individual round-leaved filaree, a CASSA species. As previously noted, repeat surveys in 2008 and 2012 that included an extra focused effort for this species did not observe this species on-site. Because this annual species has variability between years as to when plants in the seedbank actually germinate and express themselves, this species is still assumed to be present in very low numbers. Based on the data collected over three separate years of rare plant surveys, the minor potential population of round-leaved filaree located on the property does not have long-term conservation value.

Consistency with MSHCP Section 6.4 - Fuels Management

The Project site includes an MSHCP Conservation Area and, consistent with Section 6.4 of the MSHCP, the FMZ is included within the Project impact limits and will not extend into the habitat that is proposed to contribute to the MSHCP Conservation Area. The Project's FMZ is divided into the below zones, as depicted on Exhibit 4.3-10, *Fuel Modification Plan*. Also see Appendix 9.11.1 for the FPTR and Section 4.16, *Wildfire* for further discussion of fuel management and wildfires.

Zone 1A is the first 20 feet (rear yard) from the structure to the lot line for those lots adjacent to natural open space around or within the development footprint. This area will be included in the overall site reduced fuel zones. Homeowners will be responsible for ensuring that rear-yard landscaping is compliant with the FPTR found in Appendix 9.11.

Zone 1 is all public and private areas located between the lot line and 50 feet outward. These areas may be located on public slopes, private open-space lots, public streets, and/or private yards. All highly flammable native vegetation, especially plant species found on the Prohibited List (Appendix F of the FPTR) shall be removed. See the FPTR in Appendix 9.11 for further zone criteria.

Zone 2 is all public and private areas located between the outside edge of Zone 1 and 100 feet outward. These areas may be located on public slopes, private open-space lots, public streets, and/or private yards, as depicted on Exhibit 4.3-10, Fuel Modification Plan. Zone 2 Represents a 50 percent thinning zone – 50 percent less fuel than on adjacent unmaintained preserve areas. Zone 2 areas will include removal of dead/dying vegetation, exotics, and plant species listed on the Prohibited List (Appendix F of the FPTR). Removal of these components will result in 50 percent thinning of the existing fuels. See the FPTR in Appendix 9.11 for further zone criteria.

FMZ Augmentation Zone (sometimes referred to as FMZ 3) applies to the undeveloped corridor along the largest on-site drainage, known as the "Internal Oak-Dominated Open Space" (or LNP) in the Project's Fire Protection Technical Report. This corridor is flanked by development along its entire length. The area will be maintained as an FMZ through annual maintenance of non-jurisdictional areas so that vegetation does not exceed a height of four inches. There are limited areas within this open space that are jurisdictionally protected by CDFW and will be left unmaintained. All of these areas are beyond 150 feet from adjacent structures. Additionally, should mortality of oaks and or willow trees occur in these jurisdictional areas, from drought, insect, disease or other factors, they will be removed or chipped on site to avoid the accumulation of dead fuels.

The approximately 81 acres of fuel management zone is included in the approximately 362 acres of proposed impacts. The FMZ is made up of 3.31 acres of oak tree trimming (FMZ 3), 23.33 acres of open space to be maintained to a height of four inches (FMZ 3), 40.59 acres of thinning 50 percent of the vegetation (FMZ 2), and 9.11 acres that would be irrigated (FMZ 1), along with 4.4 acres of existing FMZ associated with the adjacent Greer Ranch Development to the south. The thinning and irrigated zones total 49.7 acres located around the exterior perimeter of the Project development. The remainder of the FMZ impacts (26.64 acres) occurs within the LNP and other open space within the development footprint.

Consistency with MSHCP Sections 7.5.1 and 7.5.2

As noted above, McElwain Road (on-site) has been added to the MSHCP as a Covered Activity and is required to show consistency with Sections 7.5.1 and 7.5.2 of the MSHCP. Section 7.5.1 of the MSHCP states that the ultimate alignment and design of planned roadways, bridges, and interchanges would be subject to the following design, siting, and construction guidelines (responses to each item for the roadway is included below):

- Planned roads will be located in the least environmentally sensitive location feasible, including disturbed and developed areas or areas that have been previously altered. Alignments will follow existing roads, easements, ROWs, and disturbed areas, as appropriate, to minimize habitat fragmentation.

  Status: McElwain Road has been designed to run as close to I-215 as possible to place the roadway in the least environmentally sensitive area while still providing access to the Project from the south. This has minimized fragmentation resulting from McElwain Road.

- Planned roads will avoid, to the greatest extent feasible, impacts to Covered Species and wetlands. If wetlands avoidance is not possible, then any impacts to wetlands will require issuance of and mitigation in accordance with a federal 404 and/or state 1600 permits.

  Status: McElwain Road does not impact covered species and wetlands. The roadway does impact non-wetland Riparian/Riverine resources and these impacts are being mitigated in accordance with state and federal permitting requirements.

- Design of planned roads will consider wildlife movement requirements, as further outlined below under Guidelines for Construction of Wildlife Corridors.

  Status: McElwain Road will incorporate requirements consistent with Section 7.5.2 of the MSHCP. Section 7.5.2 of the MSHCP addresses construction of wildlife crossings. Because I-215 is a major impediment to large wildlife (e.g., mountain lion and mule deer), McElwain Road is not being designed to facilitate movement of these species. McElwain Road would include a six-foot by six-foot box culvert that would provide wildlife crossing under the roadway. Section 7.5.2 of the MSHCP recommends that culverts be a minimum of 1 to 1.5 meters for medium-sized wildlife that are anticipated to use this linkage and the six-foot by six-foot culvert proposed exceeds this requirement. The box culvert under McElwain Road would be approximately 150 feet long and would provide direct line of sight from end to end. The undercrossing is being placed within the drainage that traverses this portion of the site which is the area most likely to be utilized for wildlife movement. A second four-foot by four-foot box culvert will be placed above the six-foot by six-foot culvert to allow for wildlife movement during high flow events; Exhibit 4.3-11.

Section 7.5.2 of the MSHCP in part states:

- Small and medium sized mammal crossings should be placed at least every 300 meters and small and medium sized mammal crossings should be varied in size to accommodate a variety of mammal species.

  Status: 300 meters is nearly at the southern property boundary when measured from the proposed undercrossing and would only facilitate movement to a narrow strip of habitat between I-215 and McElwain Road. As a result, additional small mammal crossings are not proposed.

- 1.0 to 1.5-meter culverts should be installed to support medium-sized wildlife (e.g., coyote, raccoon).

  Status: The undercrossing meets this requirement.

- Smaller, 0.5 to 1.0-meter culverts should be installed for small mammals, reptiles, and amphibians. These smaller structures are preferred by mice, weasels, and other small wildlife.

  Status: The four-foot by four-foot box culvert crossing meets this criterion.

- Dirt, rock, or concrete benches should be installed on at least one side of the large mammal crossing facility in order to allow wildlife to cross during most storm event circumstances.

  Status: The four-foot by four-foot box culvert placed outside of the 100-year floodplain to allow for wildlife movement during high storm events is not intended to facilitate large mammal movement.

The MSHCP also states that "All undercrossings and culverts which are intended to get wildlife usage, will be designed in a manner which allows a dry crossing under nearly all circumstances. This will include designing an elevated bench above the normal high-water line or providing a textured gentle slope up the side of the culvert/undercrossing."

McElwain Road will include a six-foot by six-foot box culvert in the channel bottom, along with a four-foot by four-foot box culvert above the 100-year flood level for an all-weather undercrossing; Exhibit 4.3-11. MM BIO-14 (see page 4.3-67) includes specific design measures to ensure MSHCP compliance relative to wildlife movement. Directional fencing shall be provided at the McElwain Road undercrossings to direct wildlife into the undercrossings. Existing vegetation is fairly open at the proposed crossing locations. Areas around the openings will be augmented with appropriate native species to facilitate wildlife usage.

- Narrow Endemic Plant Species will be avoided; if avoidance is not feasible, then mitigation as described in the Narrow Endemics Plant Policy will be implemented.

  Status: No Narrow Endemic Plant Species occur within the McElwain Road ROW.

- Any construction, maintenance, and operation activities that involve clearing of natural vegetation would be conducted outside the active breeding season (March 1 through June 30).

  Status: The Project will be conditioned to avoid clearing of vegetation during the breeding season (see MM BIO-9) (see page 4.3-56).

- Prior to design and construction of transportation facilities, further biological surveys will be conducted within the study area including vegetation mapping and species surveys and/or wetland delineations. The appropriate biological surveys to be conducted will be based on field conditions and recommendations of the Project manager in consultation with a qualified biologist. The results of the biological resources investigations will be mapped and documented. The documentation will include preliminary conclusions and recommendations regarding potential effects of facility construction on MSHCP Conservation Area resources and methods to avoid and minimize impacts to MSHCP Conservation Area resources in conjunction with Project siting, design, construction, and operation. The Project biologist will work with facility designers during the design and construction phase to ensure implementation of feasible recommendations.

  Status: Surveys have been conducted for McElwain Road on-site. The Project biologist has worked with the Project design team in developing the alignment and design criteria. McElwain Road is consistent with Section 7.5.1 of the MSHCP. Refer to discussions above regarding specific surveys conducted, PDFs implemented, and recommended mitigation measures to ensure MSHCP consistency regarding the McElwain Road extension.

Off-Site Construction Impacts

NEPSSA surveys of the off-site access area for the McElwain Road extension shall be conducted prior to grading to ensure compliance with Section 6.1.3 of the MSHCP. Survey results shall be provided to the RCA and Wildlife agencies for review, and to the City for final approval. Refer to MM BIO-4 (see page 4.3-47).

Construction of the utility improvements along Keller Road and Zeiders Road will not conflict with the MSHCP. Nor will the very minor off-site drainage outfall improvements located along the north side of

Keller, west of Zeiders Road. The construction will be temporary, gradually moving down the length of existing roads as trenching occurs and then is backfilled as the roads are resurfaced.

FUEL MODIFICATION EASEMENT FOR GREER RANCH

The Greer Ranch community, which is located to the south of Murrieta Hills and its associated Fire Protection Plan and open space, had at some point in the past encroached onto Murrieta Hills' property. The encroachment includes three areas of an existing Greer Ranch FMZ extending up to 180 feet from Greer Ranch structures as well as a large existing borrow pit that extends up to 800 feet from the property line between Murrieta Hills and Greer Ranch.

This encroachment area has provided an FMZ for Greer Ranch, but native fuels/vegetation are repopulating the area, establishing the need for ongoing maintenance. Greer Ranch appears to have been approved without the necessary off-site easements to maintain FMZs. The MHSPA, through the FPTR (EIR Appendix 9.11), recognizes the importance for structure protection fuel modification adjacent to the Greer Ranch residences as well as the need for a buffer that minimizes the likelihood that a structure fire in Greer Ranch spreads to the adjacent Murrieta Hills open space.

Therefore, a fuel modification easement will be granted to the Greer Ranch HOA along the MHSPA Project's southern boundary, adjacent to the Greer Ranch residences, as indicated in EIR Appendix 9.11. The easement will be recorded with the County/City Assessor's Office. Maintenance of the dedicated FMZ will be the responsibility of the Greer Ranch HOA. See Section 4.16, *Wildfire* for further discussion regarding wildfire risks.

This FMZ easement remedies an existing issue not directly related to the Project. The proposed dedication of this easement to Greer Ranch resulted in a slight reduction (4.4 acres) of MSHCP designated open space. However, the approximately 608 acres which contribute to the conservation goals of Cell Group C still exceeds the minimum 60 percent conservation target for Cell Group C, at approximately 62 percent. The Project's offer of this Greer Ranch FMZ easement has been factored into the overall MSHCP consistency determination and habitat analysis, as reflected in acreages noted throughout, and described in greater detail in EIR Appendix 9.11.

OPERATIONS

As previously discussed, the overall goal of the Western Riverside County MSHCP is to conserve Covered Species and their habitats, improve future economic development in the County by providing an efficient, streamlined regulatory process through which development can proceed, and provide for permanent open space, community edges, and recreational opportunities which contribute to maintain the community character of western Riverside County.

Western Riverside County MSHCP has a local mitigation fee on all new development. Each project in the MHSPA area would be evaluated through the entitlement process to determine the need to pay development impact fees established by the Western Riverside County MSHCP as discussed in MM BIO-11 and MM BIO-12 (see page 4.3-66). As such, as each Project development phase is completed, the operation of the Project within the MHSPA will not conflict with the Western Riverside County MSHCP and no significant impacts will occur.

Off-Site Operations Impacts

Refer to Operations discussion above.

MITIGATION MEASURES

MM BIO-11: **RCA Dedication.** Prior to the issuance of grading permits or recordation of the final map, whichever occurs first, the Project Applicant shall dedicate approximately 609 acres to the RCA, consistent with the Project HANS report (DEIR Appendix 9.3.1) and RCA JPR Findings dated August 27, 2019, in a form and manner acceptable to the RCA. The offer of dedication shall constitute fulfillment of this mitigation requirement, with the timing and manner of long-term ownership and maintenance subject to the MSHCP requirements and processes established by the RCA.

MM BIO-12: **MSHCP Local Mitigation Development Fee.** If applicable, the MSHCP Local Mitigation Development Fee, in effect at the time of payment, must be paid prior to certificate of occupancy for the residential unit or development project or upon final inspection (whichever occurs first). The Project Applicant is requesting that the dedication of approximately 608 acres for conservation be offset through MSHCP fee credits up to the value of the land being dedicated for conservation.

MM BIO-13: **Indirect Impacts.** The following measures are to be implemented by the Project to minimize the identified potential indirect impacts to MSHCP conservation areas, including:

- All Project point source runoff (via Project stormdrains) will be treated prior to exiting the site to reduce toxins, in accordance with water quality BMPs established by the City of Murrieta.
- Detention basins proposed within the Project footprint will ensure that there is no increase in flows from the Project into the Salt Creek, Murrieta Creek, or Warm Springs Creek watersheds, consistent with City of Murrieta and County of Riverside requirements.
- All Project lighting (including that belonging to private property owners) will be required to be selectively placed, directed, and shielded away from conserved habitats along the open space borders of the development, as required by the City or Murrieta MC. In addition, large spotlight-type backyard lighting directed into conserved habitat will be prohibited, to be enforced through provisions contained in the MHSPA Homeowners Association's (HOA) Declaration of Covenants, Conditions, and Restrictions (CC&Rs).
- No plants included on the California Invasive Plant Council's list of invasive species will be used anywhere on the site, and only native species or non-invasive non-native species will be planted adjacent to conservation areas. A list of prohibited species will be provided to homebuyers with enforcement implemented through the HOA.
- The Project has been designed so that no additional take of conserved habitat will be necessary for fuel modification purposes. All take is included in the Project footprint, as reflected in EIR Appendix 9.3.3.

- Enclosure (view) fences (noncombustible materials such as glass, stone, brick, block, or tubular steel) shall be installed along the interface where residential development abuts conserved habitat. Signs will be posted at potential access points into the MSHCP conservation area informing residents of the wildlife habitat value of the open space to minimize intrusions.
- Manufactured slopes associated with the proposed site development will not extend into the MSHCP conservation area.

The above measures will serve to minimize the adverse effects of the Project upon conservation configuration and will minimize management challenges that can arise from development located adjacent to conserved habitat.

MM BIO-14: **MSCHP Sections 7.5.1 Guidelines for the Siting and Design of Planned Roads Within the Criteria Area and Public/Quasi-Public Lands and 7.5.2 Guidelines for Construction of Wildlife Crossings.** The following measure shall be implemented to ensure consistency with MSHCP Sections 7.5.1 and 7.5.2 regarding wildlife movement:

- Directional fencing, shading, or any other means of buffering wildlife from proposed development, as well as McElwain Road, shall be provided by the Project. Areas around the undercrossings openings will be augmented and/or revegetated with appropriate native vegetation species to facilitate wildlife usage and encourage wildlife movement. The Project Applicant shall provide both a Fencing Plan and an Access Plan for the proposed MSHCP Conservation Lands to RCA and Wildlife Agencies prior to site grading or land conveyance.

4.3.6 CUMULATIVE IMPACTS

A less than significant impact with mitigation incorporated would occur as a result of the Project in regard to biological resources. According to Section 5.0 of the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in a less than significant impact with adherence to regulatory compliance and mitigation incorporated for biological resource impacts. According to the City of Murrieta GP 2035 Final EIR, buildout of the Murrieta GP would result in a less than significant impact on biological resources following adherence to and/or compliance with the existing regulatory framework, Murrieta GP goals and policies, compliance with the City's MSHCP Implementation Policy, Local Development Mitigation Fee Ordinance, and Development Code, and the Western Riverside County MSHCP.

For purposes of cumulative biological resources impact analysis, cumulative impacts are considered for cumulative development according to the related projects; see Table 4-1, *Cumulative Projects List*. The geographic context for cumulative analysis of the biological resource effects is the MSHCP Plan Area.

Development will contribute to the overall reduction of chaparral available in the region, which habitat is used, or can be used, as live-in and/or foraging areas for several sensitive species including Orange-throated whiptail and southern California rufous-crowned sparrow. However, this habitat is not considered "sensitive" and is widely available throughout the region. The Project will also result in the removal of a small amount of riparian/riverine and non-wetland WUS habitat.

Compensatory mitigation for Project specific impacts to riparian/riverine and non-wetland WUS habitat will be required by agencies with jurisdiction over these resources and implemented in the course of Project development. Compliance with existing regulations, permit conditions, and MMs BIO-1 through BIO-14 (see pages 4.3-46 to-47, -53 to -54, -56, -58, -66 to -67) will reduce Project impacts to biological resources to a less than significant level. Accordingly, the Project will not make a cumulatively considerable contribution to any potentially significant cumulative impact on biological resources in the western Riverside County area.

According to §15130 of the CEQA Guidelines, cumulative impacts refer to incremental impacts of an individual project when viewed in connection with the effects of other past, present, and reasonably foreseeable actions. Cumulative impacts could potentially include increased edge effects and habitat fragmentation; however, it is likely that any current and future development may threaten wildlife in the Project area. The City of Murrieta and surrounding cities and the County of Riverside are signatories of the Western Riverside County MSHCP. The MSHCP Plan Area encompasses approximately 1.26 million acres where Covered Species (146 listed and unlisted species) and their habitats are conserved. The overall goals of the MSHCP is to maintain biological and ecological diversity within the rapidly urbanizing region of Western Riverside County.

The MSHCP is intended to satisfy the legal requirements for the issuance of Take Authorizations to local jurisdictions which will allow MSHCP participants to implement land use decisions consistent with the MSHCP without project-by-project review and permitting by wildlife agencies. This will result in greater economic development certainty and provide for and maintain biological diversity by creating an interconnected MSCHP Conservation Area in the Plan Area. The Conservation Area is envisioned to cover in excess of 500,000 acres including approximately 347,000 acres on existing public/semi-public lands and 153,000 acres of additional reserve land.

Because the Project and the cumulative projects in western Riverside County would comply with the MSHCP, and the MSHCP and its associated Final EIR/EIS have analyzed cumulative impacts within the region of the proposed project under CEQA, NEPA, CESA, FESA, and CNPPA, cumulative impacts to biological resources associated with the Project have been previously considered and analyzed. The cumulative impact analysis for the Final EIR/EIS was based on forecasts made by the Southern California Association of Governments and considered other related planning documents including the Murrieta GP and the Riverside County GP. Build out information, as described in the previously mentioned general plans, was used to identify and evaluate cumulative biological impacts resulting from development in the Plan Area. Findings of the analysis, as discussed in Section 5.0 – Cumulative Impacts the Final EIR/EIS are as follows:

- Implementation of the MSHCP and Covered Projects will not result in a cumulative adverse effect on any of the Covered Species. Implementation of the MSHCP will benefit the Covered Species by preserving their habitat in order to address their life cycle needs. Thus, based on the features of the Plan itself, impacts to Covered Species are mitigated below a level of significance.
- Implementation of the MSHCP will result in cumulatively significant impacts on the Non-Covered Species because the issuance of incidental take permits will remove an impediment to development outside of the MSHCP Conservation Area. Non-Covered Species would receive little or no protection outside the reserves under existing ordinances and regulations.

- Implementation of the MSCHP will not cause adverse cumulative effects related to the reduction of sensitive vegetation communities within the Plan Area; rather, the Plan is designed to preserve sufficient acreage of the sensitive vegetation communities present in western Riverside County.
- Implementation of the MSCHP will not cause adverse cumulative effects related to interference with the movement of any native resident or migratory fish or wildlife species or obstruction of genetic flow for the identified Planning Species.
- Implementation of the MSHCP will not cause adverse cumulative impacts by conflicting with the provisions of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan or other approved local, regional, or state habitat conservation plan either within or outside of the Plan area. Rather, the MSHCP has been written specifically to complement existing Habitat Conservation Plans, such as the Stephens' kangaroo rat long-term Habitat Conservation Plan.

Other future public or private projects, and potentially this Project, are subject to MSHCP compliance including the payment of fees, which helps cover the cost of acquiring habitat and implementing the MSHCP. The Project Applicant is requesting that the dedication of approximately 608 acres for conservation be offset through MSHCP fee credits up to the value of the land being dedicated for conservation. Therefore, any cumulative impacts on biological resources are less than significant.

4.3.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable biological resources impacts have been identified for either the construction or operation phases of the Project.

4.3.8 REFERENCES

DUDEK. (2019). *Accepted Draft – Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Encinitas, CA: DUDEK. EIR Appendix 9.11.1.

HELIX. (2017). *Minor Amendment Request for Inclusion of Warm Springs Parkway and McElwain Road as Covered Activities Under the Multiple Species Habitat Conservation Plan*. La Mesa, CA: HELIX. EIR Appendix 9.3.4.

HELIX. (2019d). Memorandum - *Murrieta Hills Fuel Modification Clearing Adjacent to Riverine Resources*. La Mesa, CA: HELIX. EIR Appendix 9.3.5.

HELIX. (2019e). Memorandum - *Murrieta Hills Fuel Modification Clearing Within and Adjacent to Riverine Resources*. La Mesa, CA: HELIX. EIR Appendix 9.3.6.

HELIX. (2019c). *Murrieta Hills Project General Biological Resources Assessment.* La Mesa, CA: HELIX. EIR Appendix 9.3.3.

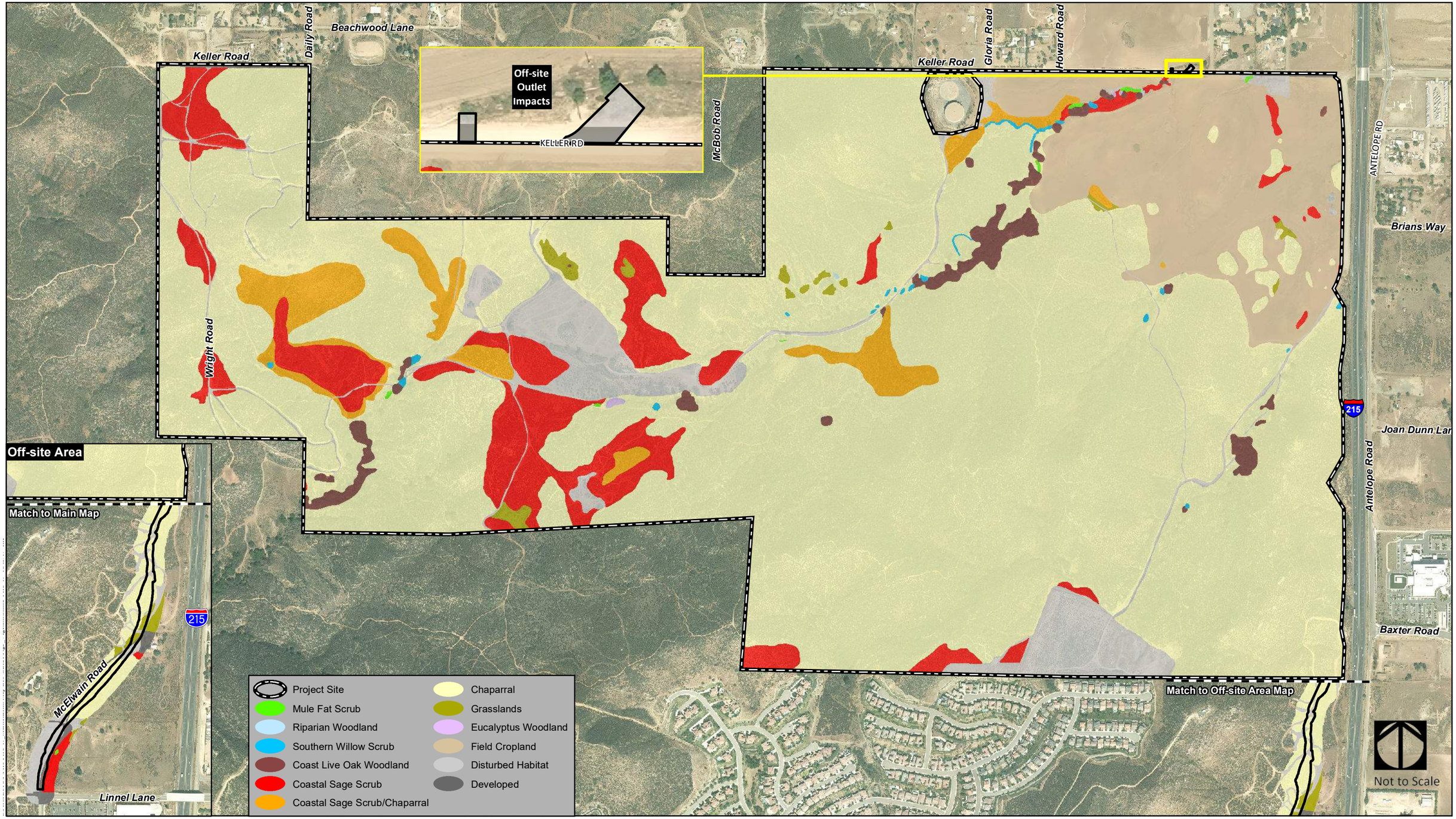
HELIX. (2019a). *Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis.* La Mesa, CA: HELIX. EIR Appendix 9.3.1.

HELIX. (2019b). *Murrieta Hills Project Determination of Biologically Superior or Equivalent Preservation.* La Mesa, CA: HELIX. EIR Appendix 9.3.2.

United States Army Corps of Engineers. (2005). *Regulatory Guidance Letter: Ordinary High Water Mark Identification.* Pages 1 – 4. Washington, DC: Don T Riley.

United States Environmental Protection Agency (2019). *How Wetlands are Defined and Identified under CWA Section 404*. Retrieved from U.S. EPA Website: https://www.epa.gov/cwa-404/how-wetlands-are-defined-and-identified-under-cwa-section-404. Accessed February 17, 2020.

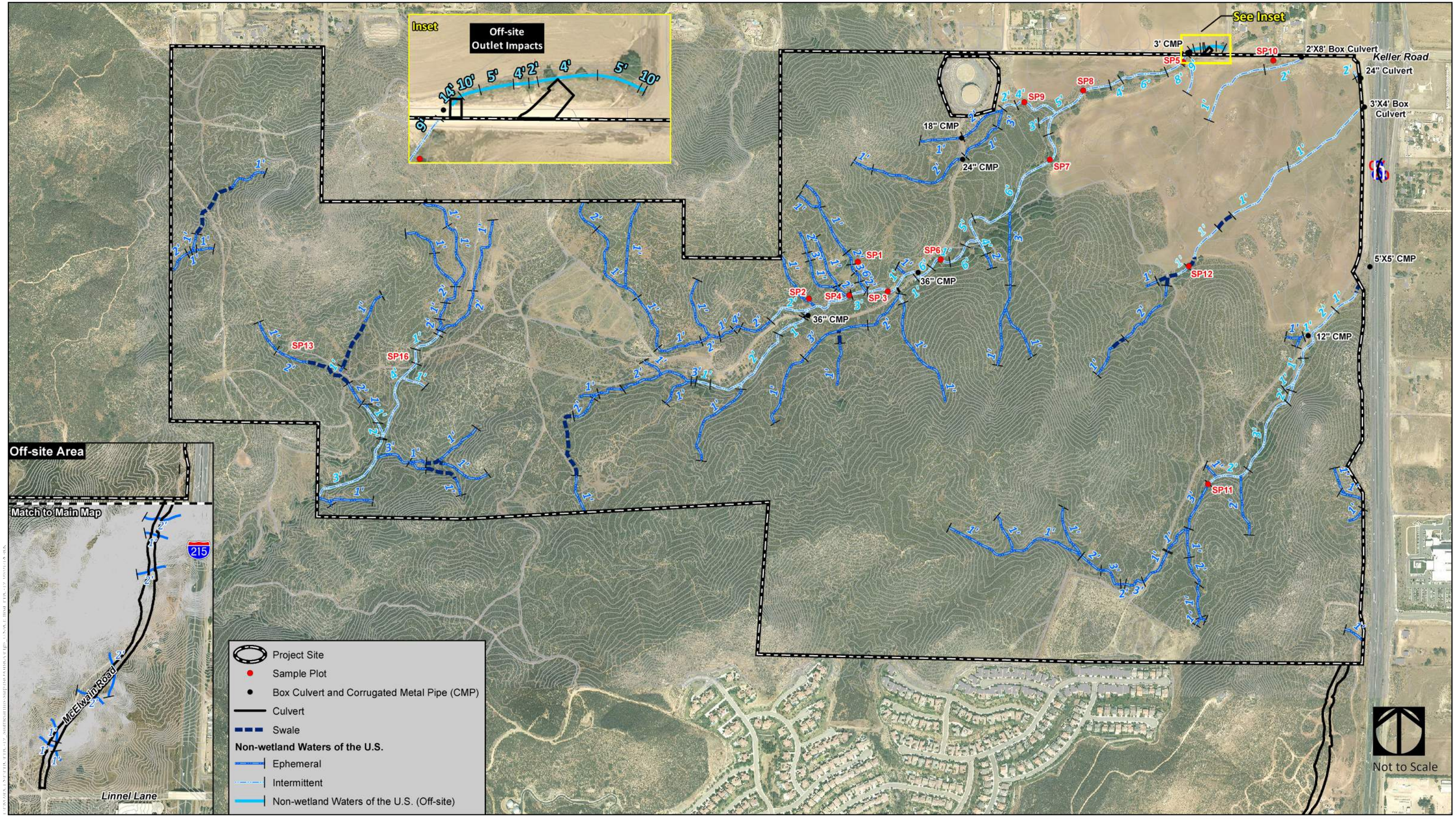
Western Riverside County Regional Conservation Authority. (2019). *RCA Joint Project Review (JPR)*. Riverside, CA: WRCRCA. EIR Appendix 9.3.7.



Source: General Biological Resources Assessment, Figure 5

EXHIBIT 4.3-1: Vegetation Communities
Murrieta Hills Specific Plan Amendment

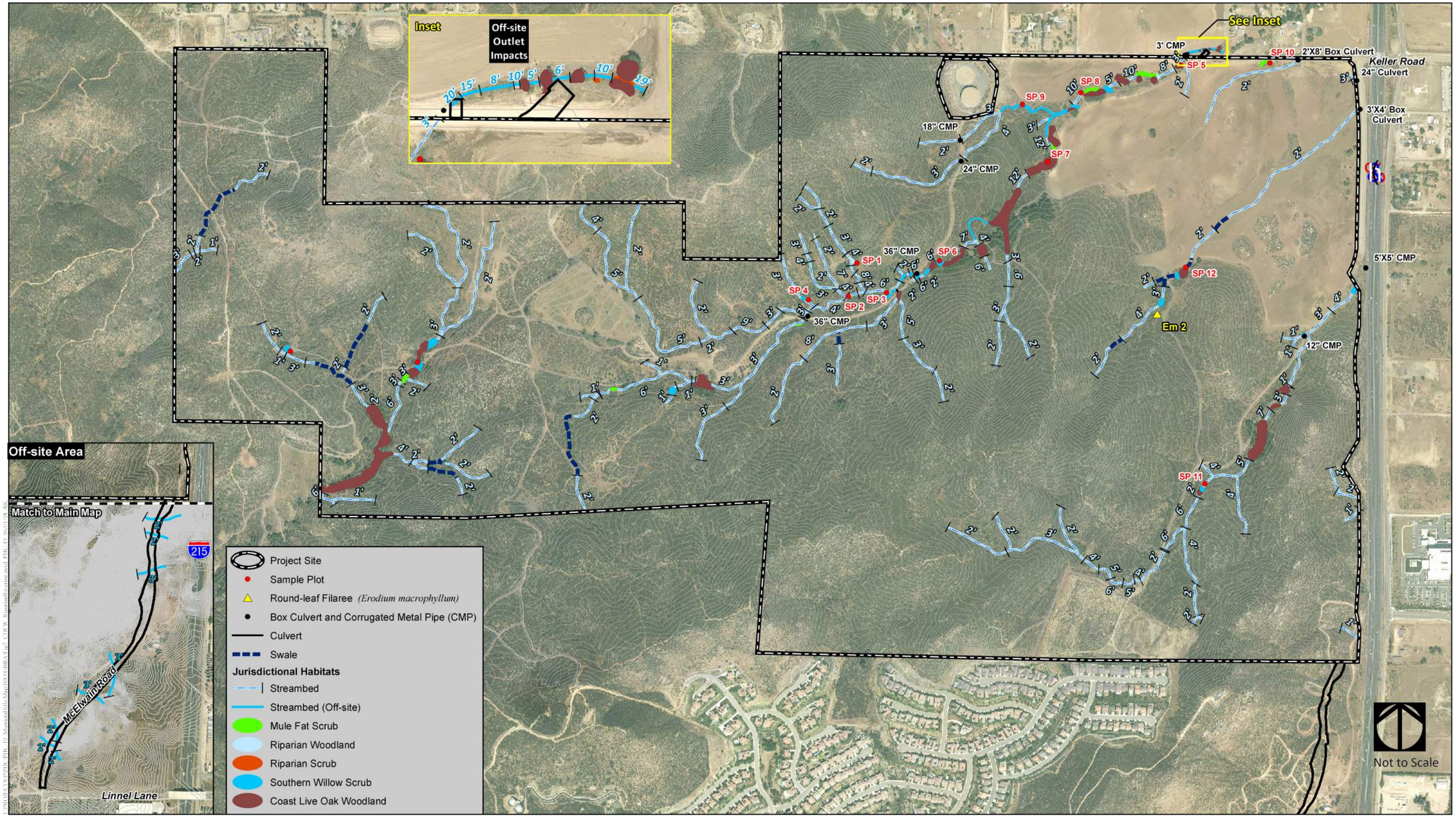
Kimley»Horn



Source: General Biological Resources Assessment, Figure 6

EXHIBIT 4.3-2: Waters of the U.S.
Murrieta Hills Specific Plan Amendment

Kimley»Horn

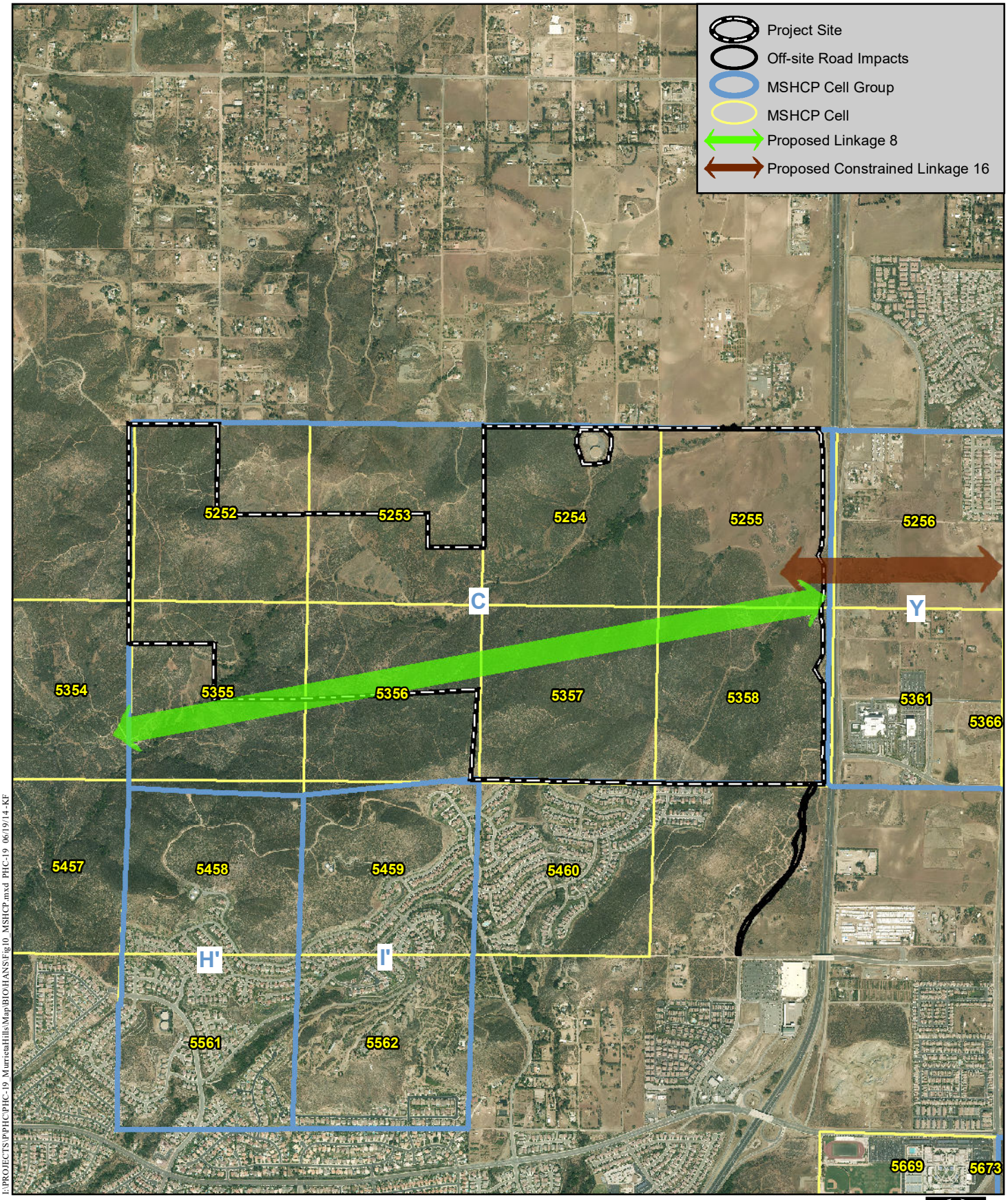


Source: General Biological Resources Assessment, Figure 7

EXHIBIT 4.3-3: Riparian/Riverine and CASSA Plant Location Map

Murrieta Hills Specific Plan Amendment

Kimley»Horn

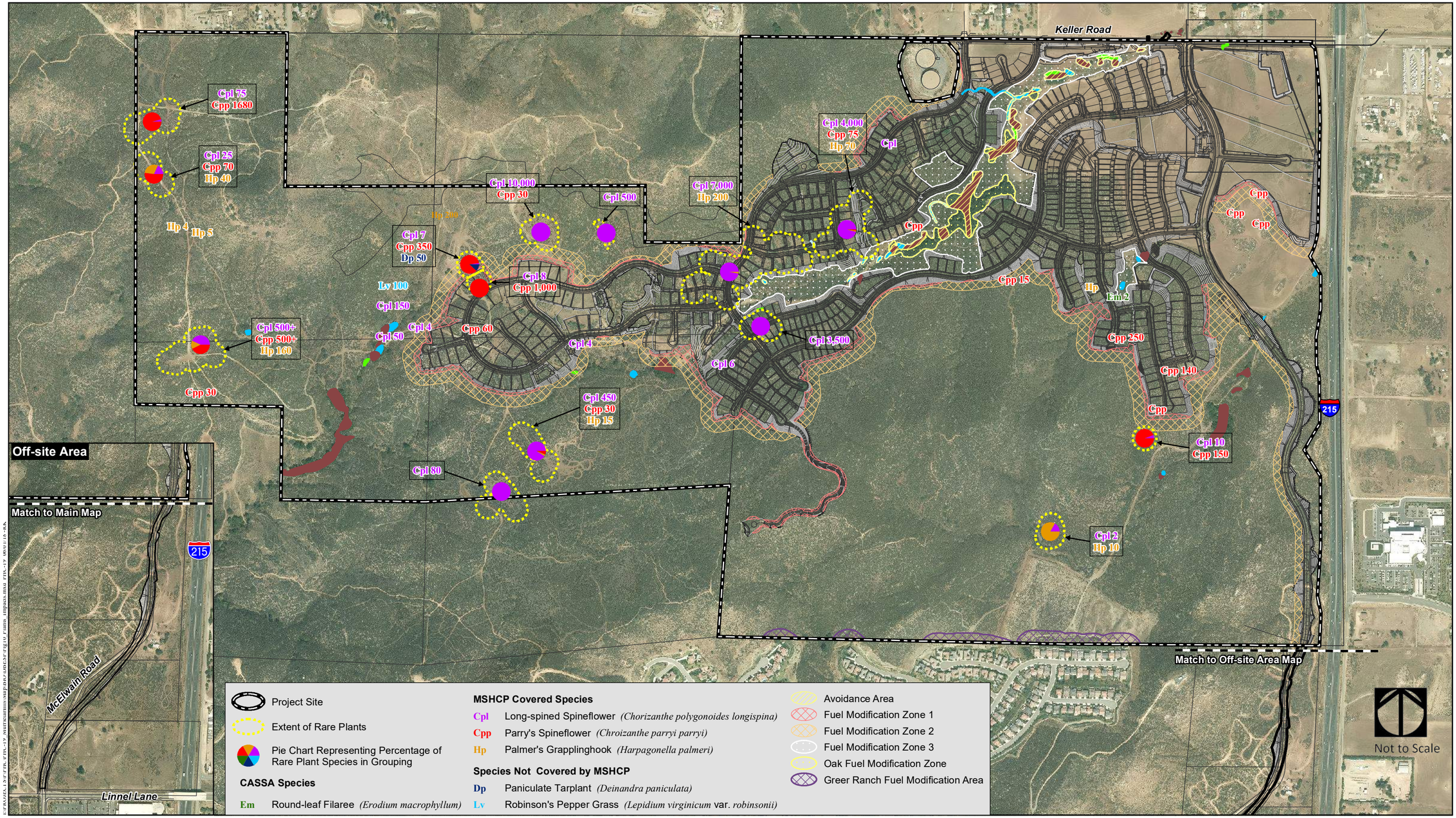


Source: HANS Biological Analysis, Figure 10

Not to Scale

EXHIBIT 4.3-4: MSHCP Criteria Map
Murrieta Hills Specific Plan Amendment

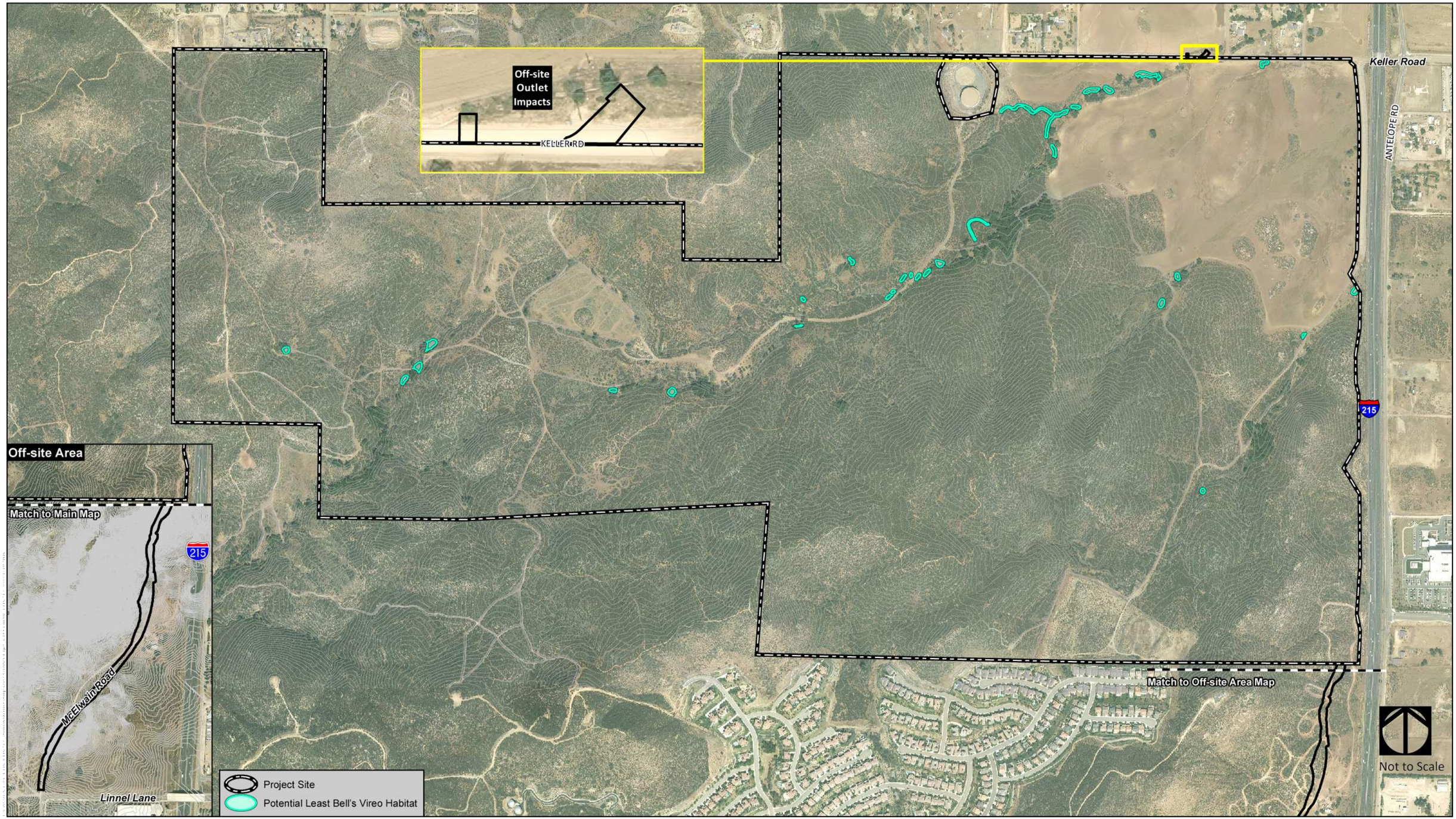
Kimley»Horn



Source: General Biological Resources Assessment, Figure 9

EXHIBIT 4.3-5: Rare Plant Impacts
Murrieta Hills Specific Plan Amendment

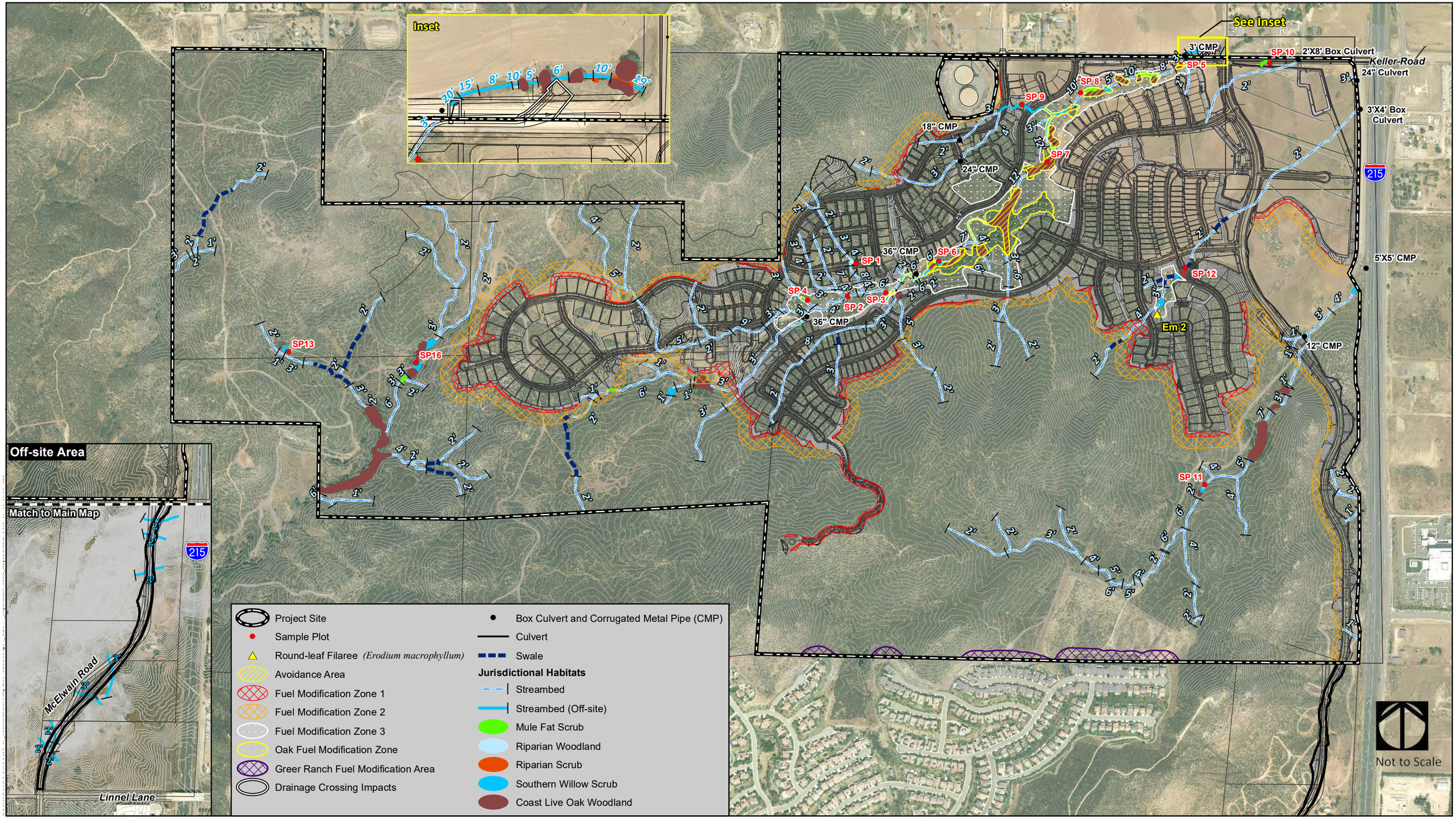
Kimley»Horn



Source: General Biological Resources Assessment, Figure 8

EXHIBIT 4.3-6: Potential Least Bell's Vireo Habitat
Murrieta Hills Specific Plan Amendment

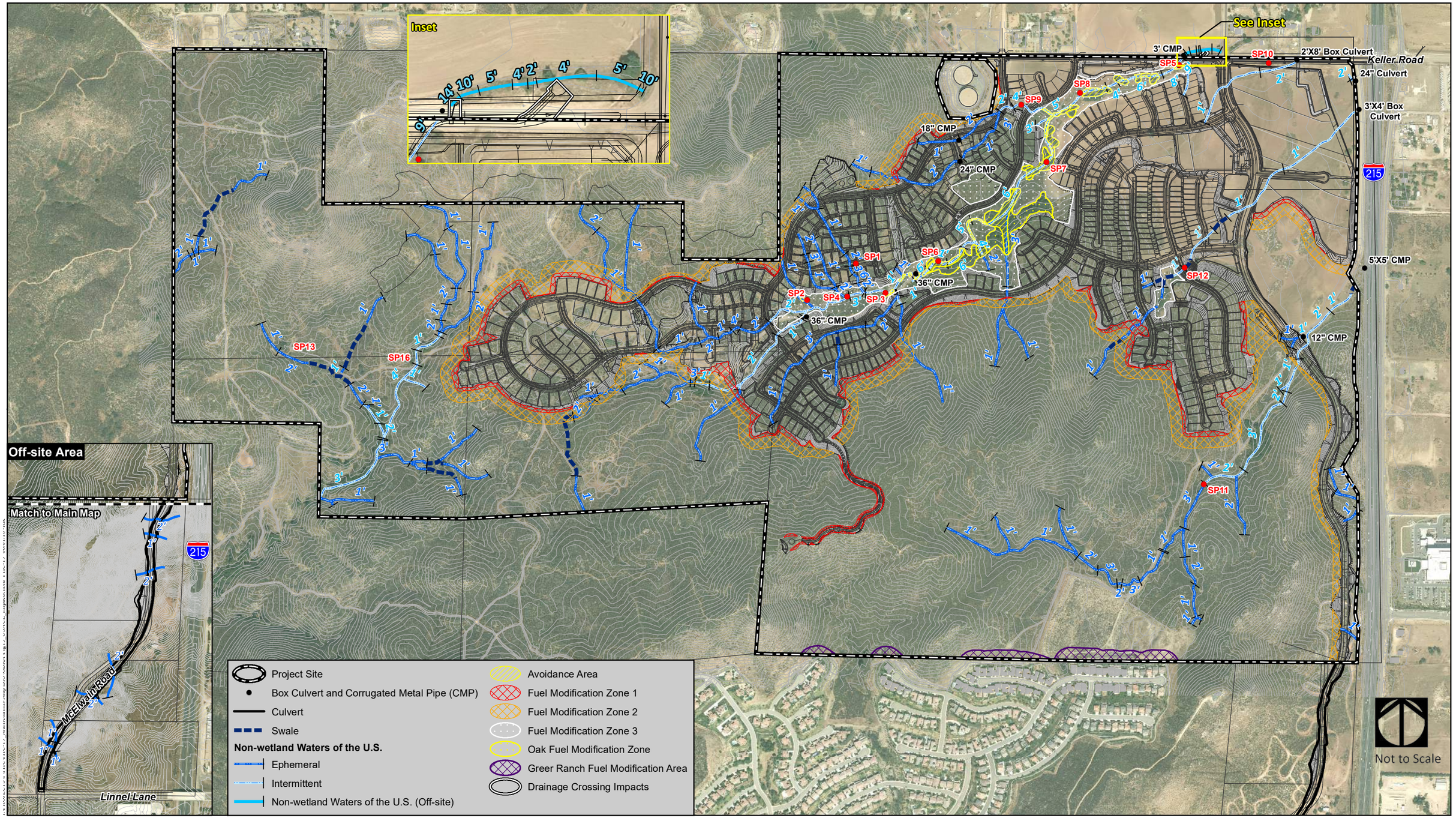
Kimley»Horn



Source: General Biological Resources Assessment, Figure 14

EXHIBIT 4.3-7: Riparian/Riverine and CASSA Plant Impacts
Murrieta Hills Specific Plan Amendment

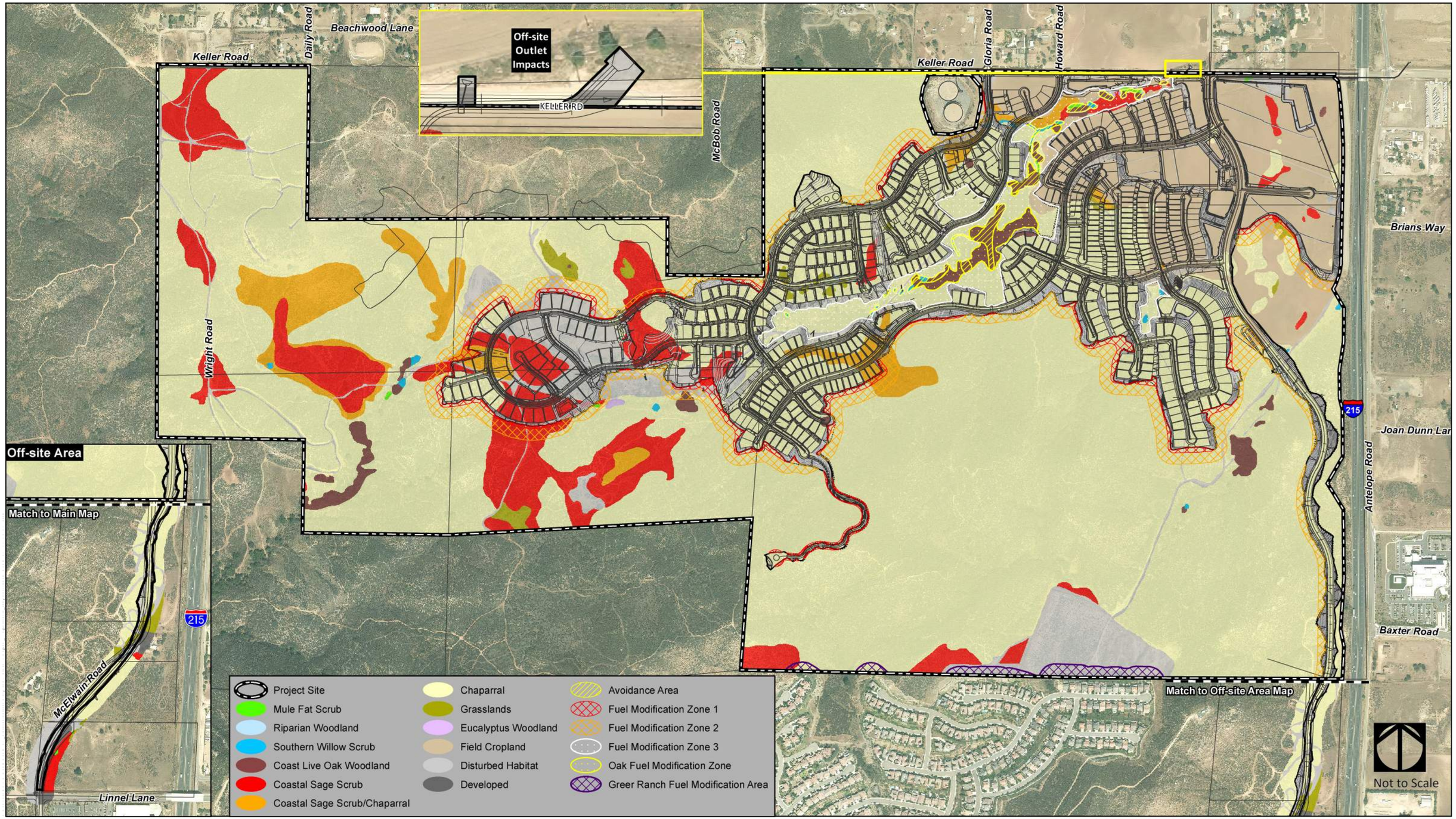
Kimley»Horn



Source: General Biological Resources Assessment, Figure 13

EXHIBIT 4.3-8: Waters of the U.S. Impacts
Murrieta Hills Specific Plan Amendment

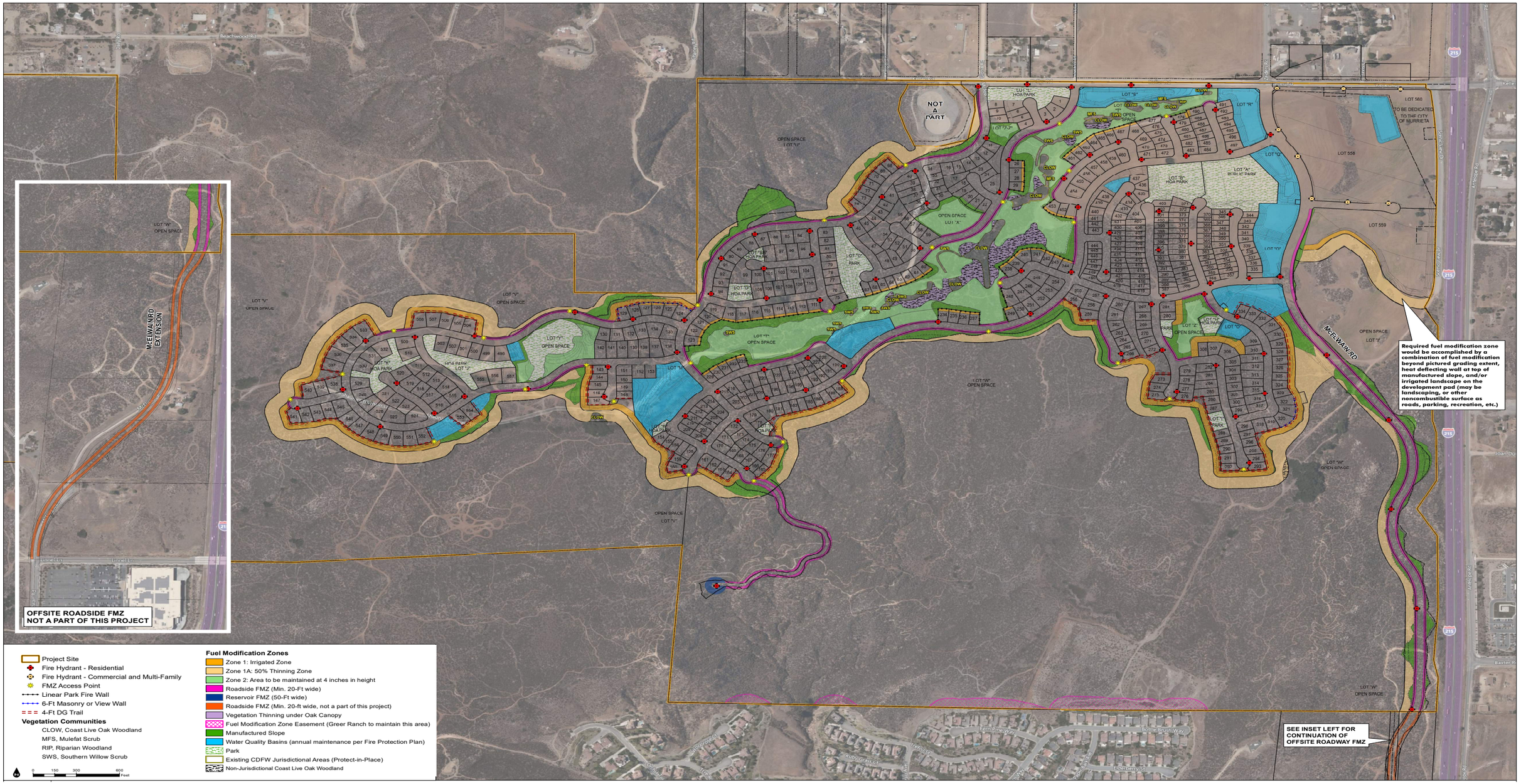
Kimley»Horn



Source: General Biological Resources Assessment, Figure 12

EXHIBIT 4.3-9: Vegetation Impacts
Murrieta Hills Specific Plan Amendment

Kimley»Horn

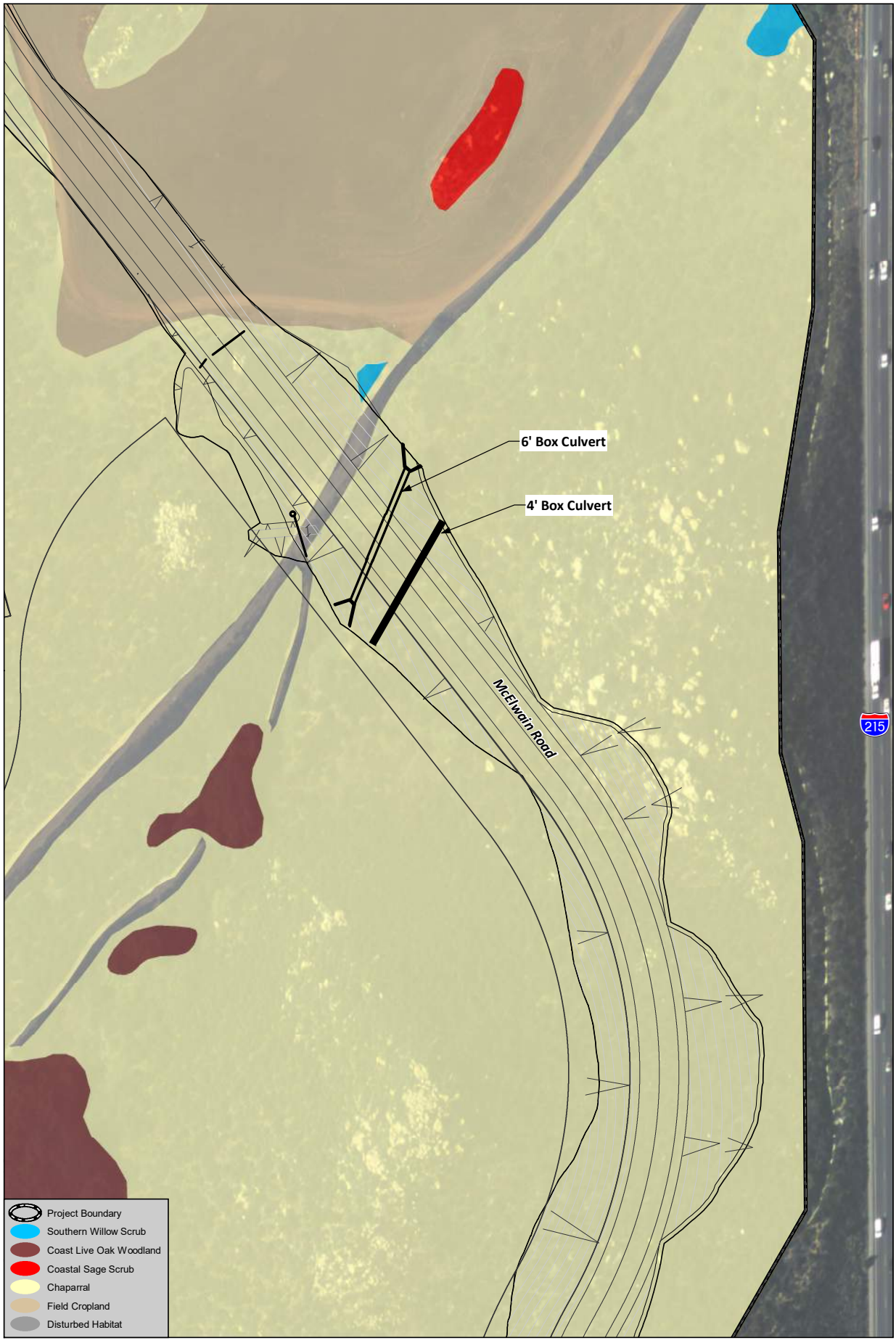


Source: Fire Protection Technical Report, Appendix D

Not to Scale

EXHIBIT 4.3-10: Fuel Modification Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: General Biological Resources Assessment, Figure 11a

Not to Scale

EXHIBIT 4.3-11: Proposed McElwain Wildlife Undercrossing
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.4 CULTURAL RESOURCES

4.4.1 INTRODUCTION

This section examines the environmental and regulatory settings of cultural resources. Historically, the term "cultural resources" encompassed archaeological, historical, paleontological and tribal cultural resources, including both physical and intangible remains, or traces left by historic or prehistoric peoples. However, with the recent changes to the California Environmental Quality Act (CEQA) Appendix G, paleontological resources are now included in the Geology and Soils analysis (see Section 4.5). Cultural resources can also include traditional cultural properties and places, including ceremonial and gathering areas, landmarks and ethnographic locations. Cultural resources also relate to archaeological remains, historic buildings, traditional customs, tangible artifacts, historical documents, and public records, which make a particular site or property unique or significant.

In accordance with the requirements of CEQA Appendix G, the following inquiries are made, analyzed, and discussed in this section:

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

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

c) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

As will be demonstrated in Section 4.4.6, *Impacts and Mitigation Measures* below, all impacts to cultural resources will be less than significant with mitigation incorporated.

The analysis is based primarily on cultural resource studies that are contained in Confidential Appendix 9.4, *Cultural Resources Reports*, including: (1) LSA Associates, Inc.'s 2007 *Cultural Resources Assessment for Murrieta Hills Specific Plan Project*; (2) Atkins' 2014 *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*[1] (Phase 1 Report); (3) Atkins' 2017 *Murrieta Hills* Specific *Plan Amendment Phase II Test and Evaluation Report* (Phase 2 Report); (4) WSP's 2020 *Cultural Resource Summary*; and (5) WSP's 2020 *Final Traditional Cultural Properties Management Summary* (TCP Report). This analysis also includes information obtained during consultations with the Pechanga Band of Luiseño Indians (Pechanga Tribe), as well as ethnographic information derived from the review of a written ethnography dated February 2017 prepared by the Pechanga Tribe (the Tribal Ethnography) and made available for inspection by the Project's consultant[2]. In February 2020, the Pechanga Tribe provided an additional confidential ethnographic report (the Ethnography 2020). The information from the Ethnography 2020 is included in the Project's confidential TCP Report (Confidential Appendix 9.4.5).

[1] Note that there is a discrepancy between the date on the cover page (June 2014) and date in the document footer. This discrepancy has no effect on the analysis.

[2] Review of the Tribal Ethnography was completed by Mr. Sandra Pentney, under the supervision of Ms. Stephanie Roberts, on September 4, 2018 at the Pechanga Tribe's cultural resources facility. A copy of Ms. Pentney's research notes is included in Confidential Appendix 9.4.6.

The cultural evaluations were conducted in compliance with California Public Resources Code (PRC) §5024.1 to identify prehistoric archaeological and historic resources in the Murrieta Hills Specific Plan Amendment (MHSPA or Project) area and evaluate potential impacts that could result from implementation of the Project. In accordance with PRC §21082.3 and California Government Code (CGC) §6254(r), due to the confidential nature of the location of cultural resources, this section does not include maps or location data.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.4.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[3]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-04 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north-south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

[3] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

The Project site is located between the Luiseño and the Cahuilla territories on the Luiseño side. The Luiseño Traditional Territory encompasses 2,900 square miles[4], including all of Western Riverside County and northwestern San Diego County.[5]

ETHNOGRAPHIC, ARCHAEOLOGICAL, AND HISTORIC CONTEXT

Please refer to Section 4.14, *Tribal Cultural Resources*, regarding the ethnography of Native American tribes within the Project area. For information on the cultural setting and archaeological and historical context, see Confidential Appendices 9.4.1, 9.4.2, 9.4.3 and 9.4.5.

MHSPA SITE HISTORICAL DATA

Murrieta began in the 1870's as a sheep-grazing community, linked to surrounding areas by the Southern California Railroad in the 1880s until the 1930s. The Wright family applied for the homestead patent in 1933. Tax records from 1939 reflect improvement of the property. The homestead had livestock, barley and hay to feed the livestock, and olives and citrus for local use. From the late 1930's until sometime after 1963, Edward Wright owned a homestead on the Project site. Construction of I-15 and a housing boom in the 1980's led to Murrieta's incorporation in 1991.[6]

Study History

Previous cultural resources investigations within the MHSPA Project area resulted in the discovery of several sites at the intersection of the foothills and the valley floor, as well as in other areas of the MHSPA site. A 1973 survey by Hammond and Huber provided initial recordation of CA-RIV-645 and suggested that it would be destroyed by construction activities related to the construction of I-215.[7]

However, in 1992, B. Lewis recorded an intact portion of the site west of I-215, which is further documented in the Project's Phase 2 report. In 1987, Archaeological Associates, Ltd. conducted a survey within the Project area and documented the following sites:

- CA-RIV-3335
- CA-RIV-3336
- CA-RIV-3337
- CA-RIV-3338
- CA-RIV-3339

[4] Note that discrepancies exist regarding the total area of the Luiseño territory. The confidential *Traditional Cultural Properties Management Summary* (2020) and Ms. Sandra Pentney's September 2018 notes on an unredacted Traditional Cultural Properties Report, provided by the Pechanga Tribe (for review only), both state the territory is 2,900 square miles. However, Atkins' 2014 *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR* states the territory is 1,500 square miles and the June 2018 *Newland Sierra FEIR* (https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/NS/NSPreBOS/2.5_Cultural%20Resources_FEIR_revised.pdf) states the territory is 2,000 square miles. The Ethnography 2020 (Woodword and Earp, 2020) describes the Tribe's traditional territory as encompassing 2,900 square miles. For this report, and to ensure consistency between the Cultural Resources and Tribal Cultural Resources sections, the Luiseño territory will be reported as 2,900 square miles.

[5] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Denver, CO: WSP. Confidential Appendix 9.4.5.

[6] City of Murrieta. (2019). *City History.* Retrieved from City of Murrieta Website: http://www.murrietaca.gov/621/City-History. Accessed February 8, 2019.

[7] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 4-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

Their survey area consisted of Section 27 of the Murrieta U.S. Geological Survey (USGS) 7.5-minute quadrangle map within the MHSPA area. In 1992, LSA Associates, Inc. conducted a 300-acre cultural resources assessment to augment the 1987 survey. This survey consisted of a review of maps, archaeological literature and records, new survey, and field checks of seven previously recorded resources in the Project area.[8]

In 2006, LSA Associates, Inc. conducted a records/literature review and archaeological field survey for the former Murrieta Hills Specific Plan, which at that time proposed the construction of a total of 1,150 single-family residences, a 6.5-acre recreation center, 5.6 acres of parks, 14.9 acres of mixed-use, and 912.2 acres of open space/conservation. A records search was conducted through the Eastern Information Center (EIC) and included a review of all recorded historic and prehistoric cultural resources, as well as a review of known cultural resources surveys and excavation reports generated from projects located within one mile of the Murrieta Hills Specific Plan project. A review was conducted of the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), and documents and inventories from the California Office of Historic Preservation.

The literature research revealed that 80 cultural resources studies have been conducted within one mile of the Murrieta Hills Specific Plan project boundaries, resulting in the recording of 63 archaeological resources, and nine built environment cultural resources. Of the studies, four (Drover 1988; Freeman and Van Horn 1987; Padon 1992; and Scientific Resource Surveys, Inc. 1981) resulted in the recording of 10 cultural resources within the Murrieta Hills Specific Plan Project boundaries:

1. P-33-11236 (originally discovered by LSA in 2001)
2. P-33-11237 (originally discovered by LSA in 2001)
3. P-33-11241 (originally recorded by Bouscaren et al. in 2001)
4. P-33-12699 (originally recorded by C.E. Drover and E.A. Jackson in 1989)
5. CA-RIV-645 (originally recorded in 1973 by J. Humbert and S. Hammond)
6. CA-RIV-3335 (originally recorded by Archaeological Associates in 1987)
7. CA-RIV-3336 (originally recorded by Archaeological Associates in 1987)
8. CA-RIV-3337 (originally recorded by Archaeological Associates in 1987)
9. CA-RIV-3338 (originally recorded by Archaeological Associates in 1987)
10. CA-RIV-3339 (originally recorded by Archaeological Associates in 1987)

During the 2006 field survey, LSA archaeologists documented each of the 10 previously recorded cultural resources and seven newly identified cultural resources:

1. LSA-CMU532-S-1
2. LSA-CMU532-S-2

[8] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 4-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

3. LSA-CMU532-S-3
4. LSA-CMU532-S-4
5. LSA-CMU532-H-1
6. LSA-CMU532-I-1
7. LSA-CMU532-I-2

Seven of the seventeen cultural resource sites listed above were recommended CRHR-eligible by LSA Associates, Inc.: P-33-11237, P-CA-RIV-3337, P-CA-RIV-3339, LSA-CMU532-S-1, LSA-CMU532-S-2, LSA-CMU532-S-3, and LSA-CMU532-S-4.[9]

These 17 sites were further evaluated as part of Atkins' Phase 1 investigation (2014, Confidential Appendix 9.4.2) which resulted in the discovery of 11 new archaeological sites and major revisions to the boundaries of many of the previously recorded sites. Six of the newly discovered sites are located within the MHSPA, but outside of the development footprint, so those sites will not be impacted by Project development; will remain in an undisturbed state in perpetuity; and were not subject to any additional testing or significance evaluation because the sites will remain in open space. In its final form, the Phase 1 record search and survey identified 12 archaeological sites that warranted further testing and significance evaluation: P-33-11236, CA-RIV-645, CA-RIV-3335, CA-RIV-3336, CA-RIV-3339, CA-RIV-12193, CA-RIV-12199, CA-RIV-12242, CA-RIV-12243, CA-RIV-12244, CA-RIV-12245, and CA-RIV-12326.

The Phase 2 Report (2017, Confidential Appendix 9.4.3) and *Cultural Resources Summary* (Confidential Appendix 9.4.4) further evaluated the 12 archaeological sites identified above. The results of the Phase 2 testing are discussed in greater detail below.

METHODOLOGY

Identification and testing, along with pedestrian surveys, cannot always, and in fact rarely do, result in finding all cultural resources located on a particular site. The goals of survey and testing are to identify and record a representative sample of resources in a good faith effort to evaluate on-site resources in order to determine significant effects on the environment.

Survey Methods

Phase 1: For the Phase 1 Report, Atkins personnel conducted both archival studies and field research. To identify any cultural resources within or near the MHSPA site, a cultural resource records search was conducted through the EIC in February 2014. The records search included review of the Historic Properties Data Files, the NRHP, the CRHR, lists of California Historical Landmarks (CHL), California Points of Historical Interest (PHI), the Inventory of Historic Structures, review of topographic maps, compiling a list of previously submitted reports pertaining to the MHSPA site and a one-mile buffer around the MHSPA site, and a review of historical maps of the area. Atkins also requested data from LSA Associates, Inc. regarding their 2006 survey. An Atkins archaeological investigator also met and coordinated with staff from the Cultural Center of the Pechanga Tribe to discuss the Project site in association with recent finds in the general region and current research being conducted by the Pechanga Cultural Center. A requested search

[9] Brunzell, D. (2007). *Cultural Resources Assessment for Murrieta Hills Specific Plan Project*. Riverside, CA: LSA Associates, Inc. Confidential Appendix 9.4.1.

of the Sacred Lands File (SLF) through the Native American Heritage Commission (NAHC) indicated that one known resource is located in the area affected by the Project and directed further inquiries to the Pechanga Tribe.

As part of the Phase 1 evaluation, Atkins personnel conducted an intensive-level cultural resources pedestrian survey from April 28 through May 16, 2014. The survey included full coverage of all areas accessible across the Project site with transect spacing no greater than 15-meters apart. All areas of the Project site were surveyed with the exception of small areas of vegetation that was too thick to be passible, and near-vertical slopes. Data was collected with a global positioning system (GPS) and photographs were taken of general landscape as well as individual artifacts. All cultural resource finds were recorded on California Office of Historic Preservation Department of Parks and Recreation (DPR) 523 series of data recordation forms.[10]

Note that the off-site portion encompassing the McElwain Road extension was not surveyed because the property owner would not allow access on the property.

A summary of the sites located and recommended next steps is included in Table 7 of the Phase 1 Report[11]. Atkins field investigations resulted in the recording of 16 new prehistoric archaeological sites, 58 new isolates and the updating of 12 previously recorded archaeological sites. All 16 new prehistoric archaeological sites were subsequently included in the 12 previously recorded sites[12]. The 58 isolated artifacts recorded throughout the course of the survey ranged from debitage, to expedient tools such as scrapers and utilized flakes, to quartz crystals. Additionally, the fieldwork resulted in revisions to the site boundaries of many of the previously recorded sites.

Phase 2: Based on the conclusions in the Phase 1 report, Phase 2 test and evaluation was recommended for the 12 identified sites. Phase 2 testing of the 12 sites within the Project area began in September 2015 and concluded in March 2016. Phase 2 testing included surface collection and mapping, approximately 428 shovel test pits (STPs), and approximately 23 one-meter by one-meter test excavation units (TEU) within the Project area. In addition, five trenches were strategically excavated on the Project site. Larger cultural resource sites included more intensive STP excavations in order to better inform the consulting team on the placement of TEUs.[13]

For the Phase 2 investigation, an archaeological site was defined as, at a minimum, a group of three or more artifacts within 10 meters of each other, or an individual feature. A feature is defined as a non-portable artifact or construction, such as a fire pit, post hole, etc. If a feature is physically capable of being moved, then its context would be destroyed (such as a bedrock milling stones, hearth, or post holes). Sites then were buffered with 20-meter spacing to act as a protective distance.

All artifacts collected on the ground surface were recorded using a GPS unit. Diagnostic artifacts and debitage that represented specific material types and lithic reduction strategies were collected. Excavated materials and surface collection were considered as part of the archaeological site data and included in

[10] Pentney, S. (2014). *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*. Page 17. San Diego, CA: Atkins. Confidential Appendix 9.4.2

[11] Pentney, S. (2014). *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*. Page 46. San Diego, CA: Atkins. Confidential Appendix 9.4.2.

[12] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 4-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

[13] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 1-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

subsequent analysis. The surface collection helps define the horizontal limits of the archaeological site. The identification of high-density artifact areas guided the placement of TEU and other subsurface tests.[14] Site-specific testing is further discussed in Section 4.4.4, *Existing Cultural Resources Sites* below.

Testing Methods

CONTROLLED SURFACE COLLECTION

During the Phase 2 investigation, all artifacts collected on the ground surface were recorded using a GPS unit. Diagnostic artifacts and debitage that represented specific material types and lithic reduction strategies were collected. Excavated materials and surface collection were considered as part of the site data and included in subsequent analysis. The surface collection helps define the horizontal limits of the site. The identification of high-density artifact areas guided the placement of TEU and other subsurface tests.[15]

SHOVEL TEST PIT

During the Phase 2 investigation, approximately 428 STPs were excavated to define areas of artifact densities and to guide the placement of excavation units. STP spacing covered Project corridors and STPs were placed systematically on a virtual X-Y grid across the test area. STP were placed along existing site boundaries to test for subsurface site boundaries to corroborate the surface site boundaries.

A north-south, offset 20-meter grid was placed over the Project area for STP locations. These points were recorded in the field using GPS equipment and were flagged and labeled as excavation began. All STP points on the grid within the original site boundary, as determined by Phase 1 survey results, were tested unless it was not possible to excavate due to bedrock. Outside of original site boundaries, STPs continued in an outward direction from the boundary until two consecutive STPs were excavated that did not produce any cultural resources. Both within and outside of original site boundaries, additional STPs were placed in areas where subsurface cultural deposits could exist, but the locations were not a part of the grid.[16]

TEST EXCAVATION UNIT

Using the Atkins 2014 Phase 1 survey results, 23 TEUs were excavated within site boundaries during the Phase 2 investigation. TEU placement was determined based on the results of the STPs within the same testing phase. TEU size measured one-meter by one-meter, and they were excavated by shovel in various 10-centimeter (cm) levels below ground surface to a maximum depth of 120 cm. A maximum depth of 120 cm is in conformance with Occupational Safety and Health Administration (OSHA) standards concerning maximum excavation depth without shoring.[17]

Installation of shoring within a one-meter by one-meter TEU is not practical for excavation due to the amount of space the shoring would require, leaving no room in the unit for excavation. Alternative means

[14] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.
[15] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.
[16] Pentney, S. (2017*). Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.
[17] According to *OSHA Fact Sheet - Trenching and Excavation Safety*, Shoring "requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins.". Accessible at https://www.osha.gov/Publications/trench_excavation_fs.html.

of excavating the TEU safely beyond 120 cm, such as additional excavation beyond the one-meter by one-meter, is considered too destructive to the site and potential data.

Level forms, maps of each level, and wall profiles were completed for each TEU. All soil matrices from the TEU were screened through 1/8-inch wire mesh and artifacts collected.[18]

TRENCHES

During the Phase 2 investigation, a total of five trenches were excavated in the northeastern portion of the Project area using a backhoe. Trench placement was based on two factors: known boundaries of cultural resources and areas with deeper Holocene soils relative to other areas within the Project site. Mechanical trenching provided means to observe soil conditions below the 120-cm maximum depth reached by hand excavation and sample for presence of cultural resources at a depth both within and outside of known site boundaries. Since the area suitable for trenching within the Project area is actively used for agricultural purposes, it was not feasible to trench the entire length of the field. Therefore, separate trench locations were selected in the same manner as the STP placement.

All trenches were mechanically excavated in one-meter deep levels. Due to concerns about trench collapse in trenches greater than 1.2 meters deep, some trenches were stepped at a 2:1 ratio. Levels for trenching were excavated in one-meter increments. Spoils piles for each excavated level were segregated from one another and approximately 25 percent of each level was screened for cultural resources with 1/8-inch wire mesh. This sampling percentage was attained by screening one quadrant of each spoils pile from the trench. Back dirt piles from the 2:1 stepping was not included because these piles were not part of the trench excavation.[19]

Artifact Analysis Methods

All artifacts recovered from Phase 2 testing and evaluation were cleaned with water and a soft brush except the artifacts that had the potential for residue analysis and artifacts that were incompatible with washing. Remaining artifacts were gently brushed to remove excess dirt from their surface. Once cleaned, artifacts were classified, weighed, and counted. All non-debitage artifacts were given individual catalog numbers and all tools were measured. Cataloging initially separated lithic flakes (flakes) into four classes: primary cortex, secondary cortex, interior flake, and shatter. Due to the large number of chipped stone artifacts collected at the site, 10 percent were sampled for more detailed analysis.[20] For detailed information on specialized artifact analyses, see Section 5.7 of Confidential Appendix 9.4.3.

Disposition of Cultural Materials

Artifacts and cultural materials collected during Atkins' Phase 2 investigation, which began in September 2015 and concluded in March 2016, were stored at their San Diego, CA office until late June 2019. Per direction of the City of Murrieta, the artifacts were cataloged and collected on June 27, 2019, by a representative of the Western Science Center. They were then transported to the Western Science Center in Hemet, CA, a curation facility that meets the standards set forth in 36 CFR 79, where they will remain

[18] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-2. San Diego, CA: Atkins. Confidential Appendix 9.4.3.
[19] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-2. San Diego, CA: Atkins. Confidential Appendix 9.4.3.
[20] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-5. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

in the repository in accordance with Mitigation Measure (MM) CUL-9 (see page 4.4-58). Upon request, these artifacts and cultural materials will be made available for study and observation by members of any Native American tribe.

Consultation

As part of the initial Phase 1 investigation, a letter was sent to the NAHC to determine whether any sacred sites were listed in the SLF for the Project area and general vicinity. It was determined by NAHC that a sensitive tribal area was located within the Project site. The NAHC directed further inquiries to the Pechanga Tribe. The City, pursuant to CGC 65352 (Senate Bill [SB] 18), sent out the required notices and initiated the consultation process. The Pechanga Tribe has been involved in extensive discussions and consultation on the Project almost since its inception.

Table 4.4-1. *Consultation History with the Pechanga Tribe* below includes certain key dates and milestones in the coordination history with the Pechanga Tribe, which was initiated in November 2007, and continued until February 2020.

Table 4.4-1. Consultation History with the Pechanga Tribe

Date	Attendees	Description
11/7/2007	Transmittal	Pechanga Letter to City Requesting SB 18 Consultation.
3/7/2014	Pechanga Tribe, City Staff, Project Applicant and Atkins	Pre-field consultation (initial site visit) and research for the Phase 1 Survey at the Project site.
1/8/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	Field visit
1/29/2015	Pechanga Tribe, City Staff, and Project Applicant	Pechanga Letter to City Requesting SB 18 Consultation
3/3/2015	Project Team and Pechanga Tribe	Tribe Meeting at Pechanga Cultural Center
3/23/2015	Project Team and Pechanga Tribe	Tribe Meeting at Pechanga
4/24/2015	Pechanga Tribe and Atkins	To discuss what research questions are pertinent to the Tribe and discuss field approaches.
4/30/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	Discuss Phase 2 scope of work and approach with the Tribe.
9/1/2015	Transmittal	Atkins Submittal of Draft Test Plan for Phase 2 work.
9/18/2015	Pechanga Tribe and Atkins	Phone call with the Tribe to discuss their concerns with language in the Draft Test Plan submitted 9/1/2015.
9/25/2015 - 11/30-2015	Atkins field team and Cody Schlater (Native American Monitor)	Phase 2 fieldwork.
10/7/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	To discuss the destruction of an archaeological site on the property.
10/15/2015	Pechanga Tribe, City Staff, Project Applicant, and Riverside County Sherriff	On-site inspection of Illegal activity.
1/18/2016 - 3/18/2016	Atkins field team and Cody Schlater	Phase 2 fieldwork.
6/2016	Transmittal	Draft Phase 2 report submitted by Atkins.
7/21/2016	Pechanga Tribe, City Staff, Project Applicant and Atkins	Project Status and SB-18 Meeting at the City.
7/17/2017	Pechanga Tribe, City Staff, Project Applicant and Atkins	SB-18 meeting.
9/5/2017	Transmittal	Tribe comment letter on Phase 2 and Project issues.

Table 4.4-1. Consultation History with the Pechanga Tribe

Date	Attendees	Description
10/5/2017	Pechanga Tribe, Project Applicant, and City Staff	SB-18 meeting at Pechanga.
12/8/2017	Pechanga Tribe, Project Applicant, and Atkins	First tribal artifact inspection at Atkins office in San Diego, CA.
12/19/2017	Pechanga Tribe, Project Applicant, and Atkins	Second tribal artifact inspection at Atkins office in San Diego, CA.
3/23/2018	Pechanga Tribe, Project Applicant, and Atkins	Teleconference with the Tribe who was looking for artifact disposal patterns to help them interpret the tribal use of the site. Specifically, burned non-human bone, burned and killed metates, and quartz crystals.
3/28/2018	Pechanga Tribe, Project Applicant, and Atkins	Third meeting to discuss artifacts found during the Phase 2 Test.
4/2/2018	Pechanga Tribe, City Staff, Project Applicant, and Atkins	Discuss next steps after artifact viewing.
5/22/2018	Pechanga Tribe, Project Applicant, and Atkins	Teleconference to discuss the TCP Analysis and mitigation.
6/12/2018	Pechanga Tribe, City Staff, Project Applicant, and Atkins	Site inspection with the Tribe to look at the McElwain Road alignment and how it will impact cultural resources on the site.
9/4/2018	Pechanga Tribe and Atkins	Atkins inspection of Newland Sierra ethnography and unredacted TCP information
4/11/2019	City Staff	Meeting to discuss draft TCP.
4/30/2019	Pechanga Tribe and Project Applicant's Representative	Teleconference discussing status of Project and cultural resources reports.
6/25/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
8/22/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
9/29/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
10/1/2019	Transmittal	Tribe comment letter on TCP and Project issues.
11/18/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
11/27/2019	Transmittal	Letter from City to Tribe requesting information or data for the TCP.
1/7/2020	Pechanga Tribe, Project Applicant's Representative, and City Staff	SB 18 consultation meeting.
2/5/2020	Pechanga Tribe, Project Applicant's Representative, and City Staff	Teleconference to discuss Project DEIR
2/14/2020	Pechanga Tribe Correspondence	Pechanga Tribe correspondence including comments on the TCP Documents and additional ethnographic information.

Source: Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

There has been ongoing coordination between the City, Project Team and the Pechanga Tribe since 2007. Furthermore, representatives of the Pechanga Tribe were present during the 2014 initial site visit and throughout the Phase 2 efforts. The Pechanga Tribe provided comments and references for the Phase 1 report; provided a review of the Phase 2 testing and evaluation plan before fieldwork began; provided a Native American Monitor for the entirety of the Phase 2 fieldwork; submitted a comment letter on the Phase 2 efforts; and were allowed access to the Project site for inspections, meetings and discussions as and when requested.[21]

[21] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

Implementation of the *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report* (Confidential Appendix 9.4.3) assisted the City of Murrieta in fulfilling its obligations to consult with California Native American tribes prior to amending or adopting any general plan or specific plan, or designating land as open space, pursuant to State of California, SB 18 (Chapter 905 of the 2004 statutes), discussed later in this section.

On July 1, 2015, State of California Assembly Bill (AB) 52 went into effect as an amendment to the CEQA process, which required government agencies to consult with Native American tribes sooner in the development process and to consider Tribal Cultural Resources aside from only archaeological resources. The MHSPA Project is not subject to the AB 52 amendment because the project Notice of Preparation (NOP) was issued prior to July 1, 2015.[22]

Lastly, coordination and consultation with the Pechanga Tribe will continue, and may include other entities including the U.S. Army Corps of Engineers (USACE) and State Historic Preservation Officer (SHPO). Other interested Tribes may also express an interest in the future.

4.4.3 REGULATORY FRAMEWORK

FEDERAL

Section 106 of the National Historic Preservation Act

The Project will be reviewed in accordance with Section 106 of the National Historic Preservation Act (NHPA) because the Project will be subject to the Clean Water Act, which will involve the USACE. The NHPA of 1966, as amended, is the primary set of federal laws governing projects that may affect cultural resources. Section 106 of the NHPA addresses Federal undertakings and requires agencies to review and evaluate how undertakings may impact historic properties.

A "Federal Undertaking" is defined as a project, activity or program that is funded, permitted, licensed, or approved by a Federal agency. Federal undertakings can occur on or off federally controlled properties and include new and continuing projects, activities, or programs, or any element thereof. Permitting pursuant to the Clean Water Act is considered a Federal undertaking for purposes of compliance with the NHPA.

Under Section 106 of the NHPA, federal agencies are required to consider the effects of their actions on properties that are listed in, or eligible for listing in, the NRHP. The following are the four general processing steps for Section 106 compliance:

1. Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement and identifying other consulting parties;
2. Identify historic properties by determining the scope of efforts, identifying cultural resources and evaluating their eligibility for inclusion in the NRHP;
3. Assess adverse effects to historic properties by applying the criteria of adverse effects to historic properties; and

[22] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 1-1. San Diego, CA: Atkins. Confidential Appendix 9.4.3.

4. Resolve adverse effects by consulting with the SHPO and other consulting agencies, including the Advisory Council if necessary, to develop an agreement that addresses the treatment of historic properties.

To address their Section 106 obligations, the USACE promulgated implementing regulations at 33 Code of Federal Regulations (CFR) Part 325, Appendix C.[23] Appendix C establishes procedures to fulfill the requirements set forth in the NHPA. The USACE follows these procedures rather than those outlined in 36 CFR Part 800.

Per Appendix C, "designated historic property" is a historic property listed in the NRHP or which has been determined eligible for listing in the NRHP pursuant to 36 CFR Part 63. A historic property that, in both the opinion of the SHPO and the USACE district engineer, appears to meet the criteria for inclusion in the NRHP will be treated as a "designated historic property."

The USACE will identify a “permit area” for the Project, in accordance with the following:

1) The term "permit area" as used in this appendix means those areas comprising the waters of the United States that will be directly affected by the proposed work or structures and uplands directly affected as a result of authorizing the work or structures. The following three tests must all be satisfied for an activity undertaken outside the waters of the United States to be included within the "permit area":

   i. Such activity would not occur but for the authorization of the work or structures within the waters of the United States;

   ii. Such activity must be integrally related to the work or structures to be authorized within waters of the United States. Or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program; and

   iii. Such activity must be directly associated (first-order impact) with the work or structures to be authorized.

Title 36 CFR §60.4[24] provides the criteria for evaluation of NRHP eligibility.

National Register criteria for 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:

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

b) that are associated with the lives of persons significant in our past; or

[23] USACE. *33 SFR 325 Appendix C – Procedures for the Protection of Historic Properties*. Retrieved from USACE Website: https://www.lrl.usace.army.mil/Portals/64/docs/regulatory/Coordination/33%20CFR%20325%20Appendix%20C.pdf. Accessed July 15, 2019.

[24] E-CFR. (2019). Title 36, Chapter I, Part 60, Section 60.4 – Criteria for evaluation. Retrieved from ECFR Website: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&SID=d43e4082493a66fe58adb0225f620703&ty=HTML&h=L&r=SECTION&n=36y1.0.1.1.26.0.45.4. Accessed July 15, 2019.

c) that embody the distinctive characteristics of a type, period, or 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 individual distinction; or

d) that have yielded, or may be likely to yield, information important in prehistory or history.

Criteria considerations. Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria of if they fall within the following categories:

a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his or her productive life.

d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g) A property achieving significance within the past 50 years if it is of exceptional importance.

Establishing NRHP eligibility also depends on integrity of location, design, setting, materials, workmanship, feeling, and association. Sites that meet one or more NRHP eligibility criteria but do not retain integrity are not eligible for the NRHP. Guidance regarding integrity of location, design, setting, materials, workmanship, feeling and association is provided by National Register Bulletin (NRB) 15 (NRHP, 2002)[25]:

Location - Location is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understand why the property was created or why something happened. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved.

[25] NRHP (2002). National Register Bulletin 15. Retrieved from NPS Website: https://www.nps.gov/nr/publications/bulletins/nrb15/. Accessed July 15, 2019.

Design - Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamental detailing; and arrangement and type of plantings in a designed landscape.

Design can also apply to districts, whether they are important primarily for historic association, architectural value, information potential, or a combination thereof. For districts significant primarily for historic association or architectural value, design concerns more than just the individual buildings or structures located within the boundaries. It also applies to the way in which buildings, sites, or structures are related: for example, spatial relationships between major features; visual rhythms in a streetscape or landscape plantings; the layout and materials of walkways and roads; and the relationship of other features, such as statues, water fountains, and archaeological sites.

Setting - Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how not just where the property is situated and its relationship to surrounding features and open space. Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences. The physical features that constitute the setting of a historic property can be either natural or man-made, including such elements as: topographic features (a gorge or the crest of a hill); vegetation; simple manmade features (paths or fences); and relationships between buildings and other features or open space. These features and their relationships should be examined not only within the exact boundaries of the property but also between the property and its surroundings. This is particularly important for districts.

Materials - Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.

A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been preserved. The property must also be an actual historic resource, not a re-creation; a recent structure fabricated to look historic is not eligible. Likewise, a property whose historic features and materials have been lost and then reconstructed is usually not eligible.

Workmanship - Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its

individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.

Workmanship is important because it can furnish evidence of the technology of a craft, illustrate the aesthetic principles of a historic or prehistoric period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles. Examples of workmanship in historic buildings include tooling, carving, painting, graining, turning, and joinery. Examples of workmanship in prehistoric contexts include Paleo-Indian clovis projectile points; Archaic period beveled adzes; Hopewellian birdstone pipes; copper earspools and worked bone pendants; and Iroquoian effigy pipes.

Feeling - Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century. A grouping of prehistoric petroglyphs, unmarred by graffiti and intrusions and located on its original isolated bluff, can evoke a sense of tribal spiritual life.

Association - Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character. For example, a Revolutionary War battlefield whose natural and manmade elements have remained intact since the 18th century will retain its quality of association with the battle.

Because feeling and association depend on individual perceptions, their retention alone is never sufficient to support eligibility of a property for the NRHP.[26]

National Register Bulletin 38

The National Park Service (NPS) has prepared guidelines to assist in the documentation of cultural resources, to coordinate the incorporation of provisions for the consideration of such resources into departmental planning documents and administrative manuals, and to encourage the identification and documentation of such resources by state and federal agencies. NRB 38[27] is intended to be an aid in determining whether properties thought or alleged to have traditional cultural significance are eligible for inclusion in the NRHP and to assist federal agencies, SHPOs, Certified Local Governments, Native American Tribes, and other historic preservation practitioners who need to evaluate such properties when nominating them for inclusion in the NRHP or when considering their eligibility for the NRHP as part of the review process prescribed by the Advisory Council on Historic Preservation (ACHP) under Section 106 of the NHPA.[28]

As described in NRB 38, "A traditional cultural property…can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living

[26] Bright, J. (2020). *Cultural Resources Summary*. Page 7. Denver, CO: WSP. Confidential Appendix 9.4.4.
[27] U.S. Department of the Interior, National Park Service. (rev. 1998). *National Register Bulletin 38 – Guidelines for Evaluating and Documenting Traditional Cultural Properties*. Retrieved from NPS Website: https://www.nps.gov/nr/publications/bulletins/nrb38/. Accessed July 15, 2019.
[28] Bright, J. (2020). *Cultural Resources Summary*. Pages 7-8. Denver, CO: WSP. Confidential Appendix 9.4.4.

community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community."

According to the guidance in NRB 38, TCPs are a broad group of properties that can include:

- "a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

NRB 38 provides the following guidance:

- "In the case of a TCP, there are two fundamental questions to ask about integrity. First, does the property have an integral relationship to traditional cultural practices or beliefs; and second, is the condition of the property such that the relevant relationships survive?"

And:

- "If the property is known or likely to be regarded by a traditional cultural group as important in the retention or transmittal of a belief, or to the performance of a practice, the property can be taken to have an integral relationship with the belief or practice, and vice-versa."[29]

The intent of recognizing TCPs is to add to the more commonplace architectural and archaeological investigations that can understate tribal or cultural values in recognizing historic properties of cultural importance. Examples of TCPs include the San Juan River in New Mexico; Nantucket Sound in the Atlantic Ocean offshore from Massachusetts; Chinatown in Honolulu, HI; abandoned household structures; numerous archaeological sites; and the traditional community of Grouse Creek in Utah.

It is important to note that under the federal guidance, TCPs are not limited to those properties where continual use of the site can be established. However, the ACHP has provided conflicting guidance. The ACHP is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy. In 2012 the ACHP published guidance saying:

"… Bulletin 38 has sometimes been interpreted as requiring an Indian tribe to demonstrate continual use of a site in order for it to be considered a TCP in accordance with Bulletin 38. This requirement could be problematic in that tribal use of a historic property may be dictated by cyclical religious or cultural timeframes that do not comport with mainstream conceptions of "continuous" use; while in many other

[29] Bright, J. (2020). *Cultural Resources Summary*. Page 8. Denver, CO: WSP. Confidential Appendix 9.4.4.

cases, tribes have been geographically separated from and/or denied access to historic properties of religious and cultural significance to them. It is important to note that under the NHPA and the Section 106 regulations, the determination of a historic property's religious and cultural significance to Indian tribes is not tied to continual or physical use of the property."

This is an important consideration for the MHSPA, as the parcel has been under private ownership, and the Pechanga Tribe and other tribes have not had continual access.[30] Regardless, the Pechanga Tribe and all Native American tribes must provide evidence that the site is associated with cultural practices or beliefs known to a living community that (a) are rooted in the community's history and (b) are important in maintaining the continuing cultural identity of the community.

STATE

California Environmental Quality Act

California public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to PRC §21084.1, 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 §21083.2 additionally requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."

"Historical resource" is a term with a defined statutory meaning. Under California Code of Regulations (CCR), Title 14, Chapter 3 (CEQA Guidelines), §15064.5 (a) "historical resource" includes the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission (SHRC), for listing in the CRHR (PRC §5024.1 and Title 14 CCR, §4850 et seq.).
- A resource included in a local register of historical resources, as defined in §5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a Lead Agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the Lead Agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the Lead Agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC §5024.1 and Title 14 CCR §4852) including the following:
    - Criterion 1 - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    - Criterion 2 - Is associated with the lives of persons important in our past;

[30] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 6. Denver, CO: WSP. Confidential Appendix 9.4.5.

- Criterion 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; or
- Criterion 4 - Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA addresses significant impacts to historical resources. "A project with an effect 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. Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (CEQA Guidelines §15064.5(b)(1)).

CEQA also requires agencies to consider whether projects will affect "unique archaeological resources." PRC §21083.2, subdivision (g), states that "'unique archaeological resources' means 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."

California Senate Bill 18

Senate Bill (SB) 18, approved in 2004, requires local governments to consult with tribes before amending or adopting any general plan or specific plan, or designating land as open space, and to provide notices at various points in the planning process. Consultation, for purposes of SB 18, "is a process in which both the tribe and local government invest time and effort into seeking mutually agreeable resolution for the purpose of preserving or mitigating impacts to a cultural place, where feasible." See November 14, 2005 *State of California Tribal Consultation Guidelines Supplement to General Plan Guidelines*, page 15. Consultation is described as " 'conferring between two or more parties to identify issues and make a good faith attempt to find a mutually acceptable resolution of any differences identified.' Differences of opinion and of priorities will arise in consultation between local and tribal governments. Whenever feasible, both local and tribal governments should strive to find mutually acceptable resolutions to differences identified through consultation." Id. at page 18.

SB 18 says, in pertinent parts:

"In recognition of California Native American tribal sovereignty and the unique relationship between California local governments and California tribal governments, it is the intent of the Legislature, in enacting this act, to accomplish all of the following:

(1) Recognize that California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places are essential elements in tribal cultural traditions, heritages, and identities.

(2) Establish meaningful consultations between California Native American tribal governments and California local governments at the earliest possible point in the local government land use planning process so that these places can be identified and considered.

(3) Establish government-to-government consultations regarding potential means to preserve those places, determine the level of necessary confidentiality of their specific location, and develop proper treatment and management plans.

(4) Ensure that local and tribal governments have information available early in the land use planning process to avoid potential conflicts over the preservation of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places.

(5) Enable California Native American tribes to manage and act as caretakers of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places.

(6) Encourage local governments to consider preservation of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places in their land use planning processes by placing them in open space.

(7) Encourage local governments to consider the cultural aspects of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places early in land use planning processes."

And:

"Section 65352.3 is added to the Government Code, to read:

a) (1) Prior to the adoption or any amendment of a city or county's general plan, proposed on or after March 1, 2005, the city or county shall conduct consultations with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.995 of the Public Resources Code that are located within the city or county's jurisdiction.

(2) From the date on which a California Native American tribe is contacted by a city or county pursuant to this subdivision, the tribe has 90 days in which to request a consultation, unless a shorter timeframe has been agreed to by that tribe.

(b) Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Section 65040.2, the city or county shall protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects."

Thus, satisfying the City's SB 18 obligations requires the City to conduct consultations with California Native American tribes before amending or adopting any general or specific plan, with the purpose of preserving or mitigating impacts to cultural places.

In 2014, the Project team contacted the NAHC, who identified a sacred site in the Project area.

Note that on July 1, 2015, the State of California's AB 52 went into effect as an amendment to the CEQA process, which required governmental agencies to consult with Native American tribes sooner in the development process and to consider Tribal Cultural Resources aside from only archaeological resources. However, the MHSPA Project is not subject to the AB 52 amendment because the Project's NOP was issued prior to 2015. The City's compliance with SB 18 is documented in the *Traditional Cultural Properties Management Summary* (Confidential Appendix 9.4.5).

California Assembly Bill 52

On July 1, 2015, California AB 52 of 2014 was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2).

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be released. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the Lead Agency, in writing, to be informed by the Lead Agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the Lead Agency.

On July 1, 2015, AB 52 went into effect as an amendment to the CEQA process, which required governmental agencies to consult with Native American tribes sooner in the development process and to consider tribal cultural resources aside from only archaeological resources. **However, the MHSPA Project is not subject to the AB 52 amendment because the Project's NOP was issued prior to 2015**.[31]

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC §5024.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and CHL numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California PHI program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the SHRC determines that it meets any of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.

[31] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 4. Denver, CO: WSP. Confidential Appendix 9.4.5.

- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

According to 14 CCR §4852(a), types of resources eligible for nomination:

1) **Building**. A resource, such as a house, barn, church, factory, hotel, or similar structure created principally to shelter or assist in carrying out any form of human activity. "Building" may also be used to refer to an historically and functionally related unit, such as a courthouse and jail or a house and barn;

2) **Site**. A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historical, cultural, or archaeological value regardless of the value of any existing building, structure, or object. A site need not be marked by physical remains if it is the location of a prehistoric event, and if no buildings, structures, or objects marked it at that time. Examples of such sites are trails, designed landscapes, battlefields, habitation-sites, Native American ceremonial areas, petroglyphs, and pictographs;

3) **Structure**. The term "structure" is used to describe a construction made for a functional purpose rather than creating human shelter. Examples of structures include mines, bridges, and tunnels;

4) **Object**. The term "object" is used to describe those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed, as opposed to a building or a structure. Although it may be moveable by nature or design, an object is associated with a specific setting or environment. Objects should be in a setting appropriate to their significant historic use, role, or character. Objects that are relocated to a museum are not eligible for listing in the California Register. Examples of objects include fountains, monuments, maritime resources, sculptures, and boundary markers; and

5) **Historic district**. Historic districts are unified geographic entities which contain a concentration of historic buildings, structures, objects, or sites united historically, culturally, or architecturally. Historic districts are defined by precise geographic boundaries. Therefore, districts with unusual boundaries require a description of what lies immediately outside the area, in order to define the edge of the district and to explain the exclusion of adjoining areas. The district must meet at least one of the criteria for significance discussed in Section 4852(b)(1)-(4) of this chapter.

Under PRC §5024.1 and 14 CCR §4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as agricultural activities and off-road vehicle use (both of which occur within the Project site), often lack integrity because they have been directly damaged or removed from their original location, among other changes.

Typically, a prehistoric archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important

information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

Health and Safety Code Section, 7050.5 and 7052

State Health and Safety Code (HSC), §7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease, and the county coroner must be notified. HSC §7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

More precisely, if human remains are encountered, State §7050.5 states that:

a) "Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99[32] of the Public Resources Code. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94[33] of the Public Resources Code or to any person authorized to implement Section 5097.98[34] of the Public Resources Code.

b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code[35], that the remains are not subject to the provisions of Section 27491[36] of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98[37] of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe

[32] State of California. (2011). PRC Section 5097.99. Retrieved from State of California Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=5097.99.&lawCode=PRC. Accessed July 15, 2019.
[33] State of California. (2019). PRC Section 5097.94. Retrieved from State of California Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=5097.94.&lawCode=PRC. Accessed July 15, 2019.
[34] State of California (2010). PRC Section 5097.98. Retrieved from State of California Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=5097.98.&lawCode=PRC. Accessed July 15, 2019.
[35] State of California. (1947). GC Chapter 10. Retrieved from State of California Website: https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?lawCode=GOV&division=2.&title=3.&part=3.&chapter=10.&article=1.&goUp=Y. Accessed July 15, 2019.
[36] State of California. (2016). GC Section 27491. Retrieved from State of California Website: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=27491.&lawCode=GOV. Accessed July 15, 2019.
[37] State of California. (2010). PRC Section 5097.98. Retrieved from State of California Website: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=5097.98.&lawCode=PRC. Accessed July 15, 2019.

that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission."[38]

PRC §5097.91, PRC §5097.98, PRC §5097.94 and the Native American Heritage Commission

PRC §5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC §5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

PRC §5097.94 establishes the powers and duties of the NAHC, including, but not limited to:

a) To identify and catalog places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands. The identification and cataloging of known graves and cemeteries shall be completed on or before January 1, 1984. The commission shall notify landowners on whose property the graves and cemeteries are determined to exist, and shall identify the Native American group most likely descended from those Native Americans who may be interred on the property.

b) To make recommendations relative to Native American sacred places that are located on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans for acquisition by the state or other public agencies for the purpose of facilitating or assuring access thereto by Native Americans.

c) To make recommendations to the Legislature relative to procedures that will voluntarily encourage private property owners to preserve and protect sacred places in a natural state and to allow appropriate access to Native American religionists for ceremonial or spiritual activities.

For a complete list of powers and duties, visit:
https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=5097.94.

California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act (CGC §6250 et seq.) were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects…maintained by, …, the Native American Heritage Commission….". Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission (SHRC), the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

[38] State of California. (1987). Health and Safety Code Section 7050.5. Retrieved from State of California Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=7050.5. Accessed July 15, 2019.

California Penal Code, Section 622.5

California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

California Native American Graves Protection and Repatriation Act

Enacted in 2001, the California Native American Graves Protection and Repatriation Act (California Repatriation Act), requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate Native Amerian tribe(s).

LOCAL

City of Murrieta General Plan 2035

CONSERVATION ELEMENT

The purpose of the Conservation Element[39] is to provide direction regarding the conservation, development, and utilization of natural and cultural resources. It serves as a guide for the City of Murrieta, its residents, and its businesses to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve, or conserve these resources. The following goals and policies are applicable to cultural resources within the MHSPA area.

Goal CSV-5: ***Hills and ridges are protected for their environmental and aesthetic values.***

Policy CSV-5.3: Maintain a register of cultural resources that includes landforms with cultural significance.

Goal CSV-11: ***Murrieta protects, enhances, and celebrates archaeological, cultural, and historic resources as a way to foster community identity.***

Policy CSV-11.1: Promote the protection and preservation of archaeological, cultural, historical, and architecturally significant sites, structures, districts, Native American resources, and natural features throughout the community, consistent with the Cultural Resource Preservation Ordinance. Preferred methods of protection include avoidance of impacts, placing resources in designated open space and allocation of local resources and/or tax credits as feasible.

Policy CSV-11.2: Encourage appropriate adaptive reuse of historic structures and sites.

Policy CSV-11.3: Promote the designation of eligible resources to the City Register of Cultural Resources, the County Landmarks Program, or other regional, state, or federal programs.

[39] City of Murrieta (2011). *Murrieta General Plan 2035 Conservation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed July 8, 2019.

Policy CSV-11.4: Encourage the development of programs to educate the community about Murrieta's historic resources and involve the community in historic preservation.

Policy CSV-11.5: Comply with state and federal law regarding the identification and protection of archaeological and Native American resources, and consult early with the appropriate tribal governments.

Policy CSV-11.6: Investigate the feasibility of establishing a museum or other repository to archive and display Murrieta's archaeological resources.

Policy CSV-11.7: Maintain the position of archivist/historian at the Murrieta Public Library, and promote the Library's Heritage Room as a repository for historical information about the Murrieta area.

Policy CSV-11.8: Promote the use of historic elements in city parks and public places.

Policy CSV-11.9: Exercise sensitivity and respect for all human remains, including cremations, and comply with all applicable state and federal laws regulating human remains.

City of Murrieta Municipal Code

Murrieta Municipal Code[40] (Murrieta MC) Chapter 16.26, *Cultural Resource Preservation* establishes a mechanism by which community resources such as buildings, structures and sites within the City of Murrieta, which are of prehistoric and historic interest or value, or which exhibit special elements of the City's architectural, cultural or social heritage may be identified, protected, enhanced, perpetuated and used in the interest of the public's health, safety, welfare and enrichment.

Murrieta MC Section 16.26.050 discusses how an improvement or natural feature may be designated a cultural resource by the city council and any area within the City may be designated as an archaeological district or historic preservation district by the city council if it meets any of the following criteria:

A. Individual Resource Designation

   1. It exemplifies or reflects special elements of the city's cultural, architectural, aesthetic, social, economic, political, artistic and/or engineering heritage;
   2. It is identified with persons, a business use or events significant in local, state or national history;
   3. It embodies distinctive characteristics of style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;
   4. It is representative of the notable work of a builder, designer or architect; or,
   5. Its unique location or singular physical characteristic represents an established and familiar visual feature of a neighborhood, community or the city.

B. Local District Designation: A geographic area may be designated as a local archaeological district or historic preservation district if the city council, after hearing(s), finds that all of the requirements set forth below are met. Concurrent with the designation of a historic preservation

[40] City of Murrieta. (2019). *Municipal Code*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/259/Development-Code. Accessed August 19, 2019.

district, design guidelines shall be developed and shall apply to all properties within the historic preservation district.

1. Archaeological District
    a. The area is a geographically definable area.
    b. The area possesses either:
        (1) A significant concentration or continuity of archaeological resources; or,
        (2) The area is associated with the prehistory of Murrieta.
    c. The designation of the geographic area as an archaeological district is reasonable, appropriate, and necessary to protect, promote, and further the goals and purposes of the ordinance codified in this chapter and is not inconsistent with other goals and policies of the city.
2. Historic Preservation District
    a. The area is a geographically definable area.
    b. The area possesses either:
        (1) A significant concentration or continuity of buildings unified by past events or aesthetically by plan or physical development; or,
        (2) The area is associated with an event, person, or period significant or important to Murrieta history.
    c. The designation of the geographic area as a historic preservation district is reasonable, appropriate, and necessary to protect, promote, and further the goals and purposes of the ordinance codified in this chapter and is not inconsistent with other goals and policies of the city.
    d. Determining Factors: In determining whether to designate a historic preservation district, the following factors shall be considered:
        (1) District should have integrity of design, setting, materials, workmanship, and association.
        (2) The collective value of the buildings and structures in a district taken together may be greater than the value of each individual building or structure.

4.4.4 EXISTING CULTURAL RESOURCES SITES

As stated previously, the Project site and area have been the subject of previous cultural resources investigations. The development footprint for the Project site includes 12 previously recorded archaeological sites, which are described below. A brief description of each site, investigation results, and an eligibility recommendation (or lack thereof) for the CRHR and NRHP are provided as part of the analysis.

Previous research information is derived from Confidential Appendix 9.4.1: *Cultural Resources Assessment* (LSA 2007); Phase 1 information from Confidential Appendix 9.4-2: *Draft Cultural Resources Assessment for Murrieta Hills Specific Plan Amendment EIR* (Atkins 2014); Phase 2 information from Confidential Appendix 9.4.3: *Murrieta Hills Specific Plan Amendment Phase 2 Test and Evaluation* (Atkins 2017); and latest CRHR and NRHP eligibility recommendations from Confidential Appendix 9.4.4: *Cultural Resources*

Summary (WSP 2020). TCP information is from the *Final Traditional Cultural Properties Management Summary* (WSP 2020) and included as Confidential Appendix 9.4.5.

Resource Number P-33-11236

Previous Research: This site was originally recorded in 2001 by LSA as two milling slicks and a small quartz scatter. In 2006, LSA was unable to find the site.

Phase 1 Investigation: In 2014, Site 33-11236 consisted of a bedrock outcrop with three grinding slicks. Despite an intensive visual inspection of the surrounding area, no other artifacts were observed. This site likely represented a specific use site and was possibly only used tangentially to occupation at nearby sites. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, surface collection, four STP, one TEU, and one trench was conducted at this site. Site P-33-11236 consisted of four bedrock milling features with no associated surface artifact deposit. One piece of debitage was recovered from a subsurface testing unit. The site has been extensively disturbed by rodent activity and other ground-disturbing activities.

The site is not recommended as eligible for listing in the NRHP or CRHR. Recommended mitigation measures for this site include Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (2017:7-2):

"Site P-33-11236 is not recommended eligible for inclusion in the CRHR under any criteria, and cannot address any of the research goals outlined previously. Although four milling slicks were recorded, only one piece of debitage and one (*non-human)* bone were recovered from this site. The debitage does not indicate either bifacial or core reduction, and the (*non-human)* bone was from a snake with no indication of cultural use. Moreover, the stratigraphy of the site was entirely disturbed by animal burrows and related burrowing activity. No materials suitable for absolute dating such as radiocarbon dating were recovered from subsurface testing. Given the results Phase 2 testing, the site has no potential to contain any significant intact cultural component that would provide temporal or behavioral context for the milling slicks. Therefore, it will not yield information important to the prehistory or history of the local area, California, or the nation."

NRHP Evaluation: The site provides no information to associate with a significant person or events in the past, and so is not eligible to the NRHP under criterion a or b. It includes no architecture or other elements of the built environment, and so it does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a

significant and distinguishable entity whose components may lack individual distinction, and is not eligible under criterion c. It has no potential to provide any significant, intact cultural deposits that may yield information important to prehistory or history, and so is not eligible under criterion d. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-645

Previous Research: This site was originally recorded in 1973 by J. Humbert and S. Hammond. It was described as being a large temporary camp with at least 20 bedrock metates and a lithic scatter. During a 1987 study, Archaeological Associates, Ltd. was unable to relocate the site. In 1992, LSA archaeologists did relocate a portion of the site and recorded three remaining grinding slicks with a minor flake scatter and pockets of dark midden.

During the 2006/2007 study, LSA archaeologists were unable to relocate any of the formerly mentioned features but did record a single late-stage andesite core reduction flake containing phenocrysts. It should be noted that these earlier studies show that the resource's near proximity and similar character to sites CA-RIV-3337, CA-RIV-3338, and 33-11237 indicate that these may have been closely related, and possibly a single site. However, due to a lack of resources that remain to connect the three, this association is difficult to substantiate. Severe disturbances may have recently displaced or destroyed the resources relocated during the 1992 study.

Phase 1 Investigation: In 2014, it was reported that CA-RIV-645 had largely been destroyed.[41] It is possible that the portions of the site that extend into the MHSPA area may represent an intact lobe of the site that could still retain some integrity and thus be recommended eligible for the CRHR. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, surface collection, 217 STP, 11 TEU, and one trench was conducted at this site. During this course of the Phase 2 efforts, several sites were subsumed into CA-RIV-645 due to the continuation of surface and subsurface deposits that warranted merging the sites together. As of the Phase 2 investigation, Site CA-RIV-645 consisted of 24 bedrock milling features, six rock shelters, one petroglyph, one pictograph, multiple bifaces, cores, milling implements, flaked tools, and debitage. The variety of materials recovered at the site suggest that the production of tools, a variety of resource processing activities and ceremonial activities all occurred at the site.

The discovered pictograph, rockshelter, and petroglyph all add to the complexity of the site. Demonstrable public interest for these issues can be seen in the numerous public and professional archaeology groups in and around southern California, especially rock art interest groups such as the Society for California Archaeology, The California Rock Art Foundation, or the Pacific Coast Archaeology Society. Rock art is also important to tribes throughout California.

Site CA-RIV-645 is recommended eligible for listing on the CRHR under Criteria 3 and 4. For those areas of the site not feasibly avoided during Project design, mitigation measures are imposed, including Phase 3 data recovery, controlled grading, temporary construction fencing, dust control plan implementation, and

[41] Pentney, S. (2014). *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*. Page 32. San Diego, CA: Atkins. Confidential Appendix 9.4.4

Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: Site CA-RIV-645 is associated with TCP 1. TCP 1 is essentially conterminous with the archaeological site CA-RIV-645, which the Pechanga Tribe has identified as a ceremonial site. It is represented in petroglyphs, pictographs, recovered tourmaline and crystal artifacts, burned faunal (animal) remains and additional Pechanga Tribe-identified ceremonial items. Even if certain faunal remains and recovered artifacts are unrelated to ceremony, there is ample evidence of ceremony here as both the site's orientation and physical setting suggests a ceremonial purpose, and its physical setting does as well. In addition, Atkins archeological findings and the additional confidential ethnographic information provided by the Pechanga Tribe draw attention to the presence of a possible unique archeological feature.

The archaeological component to the site includes much more than ceremonial artifacts, including bedrock milling features, pestles, stone tool fragments, and debitage. Utilitarian artifact recovery considerably outweighed ceremonial. The site was likely used over multiple occupations, and at least one of those occupations included the preparation of material used in ceremony. A total of 2,833 artifacts were collected at this site however, most of these artifacts are utilitarian rather than ceremonial. Based on the sampling results, there is some evidence that this site was utilized in ceremonial practice. The contents of TCP 1 reflect ceremonial activities which the Pechanga Tribe has identified as important to their cultural practices.

Unique Archaeological Resource Evaluation: CA-RIV-645 is considered a unique archaeological resource because it contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information (Criterion 1). CA-RIV-645 does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2), nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

Therefore, CA-RIV-645 is recommended as a unique archaeological resource under PRC Section 21083.2(g), Criterion 1. Both the pictograph and petroglyph embody the distinctive characteristics of a Luiseño (Pechanga Tribe) pre-contact type and period. CA-RIV-645 also contains the highest density of bedrock milling features, indicating an intensified use area.

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"CA-RIV-645 is not associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1) and does not appear to be associated with the lives of persons important to local, California, or national history (Criterion 2). However, the rock shelter, petroglyph, and pictograph components of the site embody the distinctive characteristics of a Luiseño (*Pechanga Tribe*) pre-contact type and period (Criterion 3). Within the Project footprint, the extensive intact subsurface component of the site contains a rich variety of lithic materials, tool types, and features. The extensive surface component represented by surface artifacts and bedrock milling features has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (Criterion 4)."

In February 2020, the Pechanga Tribe provided a confidential report referred to as the Ethnography 2020 (Woodword and Earp, 2020). Information from this ethnography supports the conclusion that the site is eligible under Criterion 1 for the site's association to important events. The presence of rock art, quartz crystal, and tourmaline indicate ceremonial activity at the site.[42]

In addition, the Ethnography 2020 information provided by the Pechanga Tribe describes one of the first people who traveled widely across the region. However, the information does not indicate a specific link between that person and the MHSPA site or parcel[*s*] as it does for other locations in the region.[43] For this reason, the site is not recommended as eligible under Criterion 2.

Therefore, CA-RIV-645 is recommended eligible for listing on the CRHR under criteria 1, 3 and 4.

NRHP Evaluation: The site is likely associated with past ceremony, indicated by rock art and ceremonial artifacts. Ceremonial areas are recognized as important parts of the tribal cultural landscapes. As such the site is associated with important events in the past and is eligible under Criterion a. It is not associated with any specific historically significant individual, and is therefore not eligible under Criterion b. As stated previously, the Ethnography 2020 provided by the Pechanga Tribe associates the Project site (parcel[*s*]) with one of the first people who traveled across the region, but the information does not indicate a specific link between that person and the Project site or parcel(*s*). The rock art represents distinctive characteristics of a type or period, and so the site is eligible under Criterion c. The assemblage of artifacts and features, including a subsurface component, has the potential to yield information important to prehistory. Therefore, the site is also eligible under Criterion d.

The historic component of the site is known only from aerial photos and a cleared area in the north. Nothing remains of the structures or groves of trees visible on historic aerial imagery, and so the historic component lacks any integrity. The prehistoric component of the site retains integrity of location as nothing on the site appears to have been relocated. Some elements of the site, such as the rock art, have been affected by erosion but maintain integrity of design. The site lacks integrity of setting, part of the prehistoric component has been impacted, and the historic features are absent today. The southern portion of the site retains integrity, but the entire site's surroundings have been altered significantly. Much of the site's prehistoric component retains integrity of materials and workmanship, in the rock shelters, rock art, grinding slicks and artifact attributes.

The site lacks integrity of feeling. The site dates to approximately 1000 B.P., and modern intrusions have substantially altered how the site "conveys the property's historic character." Elements of the site retain integrity of association. Specifically, the association between rock shelters and rock art remain "sufficiently intact to convey that relationship to an observer." Other elements, such as the disturbed surface artifact assemblage in the north portion of the site, lack that association.

Based on the data collected during testing efforts and the information received during the consultation process, CA-RIV-645 is recommended eligible for the NRHP. It meets three criteria (a, c and d), and retains sufficient integrity of location, design, and association, and some integrity of materials and workmanship.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

[42] Bright, J. (2020). *Cultural Resources Summary*. Page 12. Denver, CO: WSP. Confidential Appendix 9.4.4.
[43] Bright, J. (2020). *Cultural Resources Summary*. Page 12. Denver, CO: WSP. Confidential Appendix 9.4.4.

Resource Number CA-RIV-3335

Previous Research: This site was originally recorded by Archaeological Associates, Ltd. in 1987, who noted a widely dispersed artifact scatter, mainly composed of groundstone. A 1992 study by LSA recorded a similarly characterized artifact assemblage.

During the 2006/2007 study, LSA revisited the site to find that two isolated metate fragments comprised the remainder of the surface deposit. The site condition is considered poor due to severe disturbances. High visibility (greater than 90 percent) indicates that the majority of the previously recorded resources have been displaced or destroyed.

Phase 1 Investigation: In 2014, Atkins observed an extensive lithic scatter, which included metates, manos, quartz crystal and debitage, rhyolite flakes, formed tools, and choppers. The presence of quartz crystals could be indicative of ceremonial activities at the site, while food preparation and tool manufacture activities are certainly represented. It is likely that a combined CA-RIV-3335, -3336 and -3339 represents a prehistoric residential locality. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, CA-RIV-3335 consisted of midden soil, milling implements, cores, bifaces, flaked tools, and debitage. Surface collection, 31 STP and two TEU were performed at this site. Both surface collection and subsurface testing produced artifacts during the Phase 2 fieldwork. Site CA-RIV-3335 is recommended eligible for listing on the CRHR under Criterion 4.

Recommended mitigation measures include Phase 3 data recovery, controlled grading, capping of the site, and Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: TCP 2 includes archaeological site CA-RIV-3335. Similar to TCP 1, this element is represented by recovered crystal artifacts, burned faunal (animal) resources and many Tribe-identified ceremonial items. The ceremonial items and faunal (animal) remains co-occur in the same areas, which lead the Pechanga Tribe to relate the location to certain funerary or death rituals and practices. This area differs from TCP 1 in that it lacks rock art and rock shelters. A resource from site CA-RIV-3335 also produced a very early radiocarbon date, and it is possible that the utilitarian component predates the ceremonial, or vice versa.

A total of 1,718 artifacts were collected at this site however, most of these artifacts are utilitarian rather than ceremonial. Based on the sampling results, there is some evidence that this site was utilized in ceremonial practice. The contents of TCP 2 reflect ceremonial activities which the Pechanga Tribe has identified as important to their cultural practices.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"Site CA-RIV-3335 is recommended eligible for listing on the CRHR under Criterion 4. This site has an extensive subsurface component reaching depths of up to 80 centimeters below surface (cmbs). The site has a dense surface concentration of artifacts located near its center. Soils were tested during Atkin's Phase 2 fieldwork that produced radiocarbon data, dating the features to the Late Prehistoric Period. Further examination of the intact midden soil may yield information applicable to seasonality of site occupation and types of resources utilized."

The Ethnography 2020 information provided by the Pechanga Tribe demonstrated that the site may be eligible under Criterion 1 for the site's association with important events. The site contained ceremonial items that the Pechanga Tribe associates with certain funerary or death rituals and practices. The site is not eligible under Criterion 2, for an association with the lives of a person important in our past (see CA-RIV-645 for additional details). Nor is the site eligible under Criterion 3 for the distinctive characteristics of a type, period, region, or method of construction, or for representing the work of an important creative individual, or for possessing high artistic values.[44]

Therefore, CA-RIV-3335 is recommended eligible for listing on the CRHR under criteria 1 and 4.

NRHP Evaluation: The site is likely associated with past ceremonies, indicated by ceremonial artifacts. Ceremonial areas are recognized as important parts of the tribal culture. As such the site is associated with important events in the past and is eligible under Criterion a. It is not associated with any specific historically significant individual and is therefore not eligible under Criterion b (see CA-RIV-645 for additional details). There are no built environment features; the site does not include any of the attributes that qualify it under Criterion c. The extensive assemblage of artifacts and features, including a subsurface component has the potential to yield information important to prehistory; the site is eligible under Criterion d.

The site retains integrity of location as nothing on the site appears to have been relocated. There are no attributes to the site that reflect design. The site lacks integrity of setting. Most of the site has been impacted and the entire site's surroundings have been altered significantly. The site retains integrity of materials and workmanship in its artifact assembly. It lacks integrity of feeling. Modern intrusions substantially alter how the site "conveys the property's historic character." Elements of the site retain integrity of association. Although the surface of the site is significantly impacted, Atkins' Phase 2 testing suggests intact subsurface deposits are present. The subsurface assemblage could retain integrity of association. However, the Pechanga Tribe has not provided evidence or information on how the site contributes to the present-day Pechanga Tribe's cultural identity.

The site is recommended eligible for the NRHP. It meets two criteria (a and d), and retains sufficient integrity of location, design, and association, and some integrity of materials and workmanship.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

[44] Bright, J. (2020). *Cultural Resources Summary*. Page 14. Denver, CO: WSP. Confidential Appendix 9.4.4.

Resource Number CA-RIV-3336

Previous Research: This site was originally recorded by Archaeological Associates, Ltd. In 1987, who reported a flake scraper, bowl fragment, hammerstone, and many flakes. LSA revisited the site in 1992 and found only one mano and two flakes.

During the 2006/2007 study, LSA archaeologists revisited the site and were unable to relocate any evidence of the site. The site location was systematically surveyed, using the original boundaries recorded in 1992 and found to be heavily disturbed. Since no artifacts were observed on the surface, and visibility was extremely high (approximately 90 percent), the site has probably been displaced or destroyed.

Phase 1 Investigation: In 2014, Atkins observed an extensive lithic scatter, which included metates, manos, quartz crystal and debitage, rhyolite flakes, formed tools, and choppers. The presence of quartz crystals could be indicative of ceremonial activities at the site, while food preparation and tool manufacture activities are certainly represented. It is possible that a combined CA-RIV-3335, -3336 and -3339 represents a prehistoric residential locality. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, surface collection and one STP was performed at this site. During the 2014 Phase 1 survey, one granitic metate was recorded within the Project footprint for this site. The remainder of the site was outside of the Project footprint and was not surveyed. During 2015/2016 testing, one STP was excavated with negative results. The Atkins crew also noted the metate was not observed during the Phase 2 testing. There was no additional archaeological material within the Project area, so the site boundary was updated to depict the artifact assemblage. The updated site boundary is no longer within the Project footprint. For this specific Project, no impacts will occur.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: Prehistoric occupation outside the Project's permanent impact area; therefore, this site was not evaluated for consideration as a unique archaeological resource.

CRHR Evaluation: Prehistoric occupation outside the Project's permanent impact area; therefore, this site was not evaluated for a CRHR eligibility recommendation.

NRHP Evaluation: Prehistoric occupation outside the Project's permanent impact area; therefore, this site was not evaluated for a NRHP eligibility recommendation.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-3339

Previous Research: The site was originally recorded in 1987 by Archaeological Associates, Ltd., who noted a widely dispersed scatter of lithics. LSA archaeologists revisited the site in 1992 and recorded a similar scatter but also added a milling slick and three bedrock mortars to the record.

During the 2006/2007 study, LSA archaeologists revisited the site and recorded five bedrock mortars. No artifact scatter was noted. The mortars are in granitic boulders. Site soils, which may exhibit some depth, consist of decomposed granitics and silty sand with granitic gravels and cobbles intermixed. Disturbances to the site include erosion and extensive modern dumping. This, in combination with sporadically dense

vegetation and a high energy erosion environment, at least partially accounts for the lack of surface artifacts recorded during the 2006/2007 study.

Phase 1 Investigation: In 2014, Atkins observed an extensive lithic scatter, which included metates, manos, quartz crystal and debitage, rhyolite flakes, formed tools, and choppers. The presence of quartz crystals could be indicative of ceremonial activities at the site, while food preparation and tool manufacture activities are certainly represented. It is likely that a combined CA-RIV-3335, -3336 and -3339 represents a prehistoric residential locality. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2015, surface collection, 55 STP, two TEU, and one trench were performed at this site. Site CA-RIV-3339 consisted of one hearth feature, milling implements, cores, portable mortars, one pendant, stone tools, and debitage. Surface collection and subsurface testing were both positive for artifacts. Hearths are of significant note because it is indicative of a specific human activity. Hearths are generally used to cook food or process tools and can be used in a singular event or over multiple events. Hearths can take different forms, but the most common includes a lens of dark soil that has been enriched with carbon from burning organic matter. Often, rocks are placed on the bottom or in a circular shape around the hearth to solidify the area. Hearths are located throughout coastal, mountain, and desert areas.

Site CA-RIV-3339 is recommended eligible for listing on the CRHR under Criterion 4. Recommended mitigation measures include Phase 3 data recovery, controlled grading, capping of the site, and Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"CA-RIV-3339 is not associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1); is not associated with the lives of persons important to local, California, or national history (Criterion 2); and does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic value (Criterion 3). However, the intact subsurface deposits have the potential to yield information important to the prehistory or history of the local area, California, or the nation (Criterion 4)."

Therefore, CA-RIV-3339 is recommended eligible for listing on the CRHR under Criterion 4. The site exhibited subsurface deposits up to 50 cmbs, indicating a subsurface component with good integrity. The site also contains bedrock milling features indicating an intensified use area. This is another indicator of research potential that has not been exhausted, as milling can be tested for lipid and proteins from

prehistoric use. These tests may yield information important to understanding seasonal occupation of the site and resources that were processed in the area.

NRHP Evaluation: The site does not meet criteria a, b or c. It has no association with significant events or people in the past, and lacks any features that qualify it under Criterion c. The intact subsurface component, including the hearth feature have the potential to yield information important to the prehistory; therefore, the site is eligible under Criterion d.

The site retains integrity of location as nothing on the site appears to have been relocated. There are no attributes to the site that reflect design. The site lacks integrity of setting. Most of the site has been impacted by extensive ground-disturbing activity and the entire site's surroundings have been altered significantly. The site does retain integrity of materials and workmanship in its artifact assemblage. However, it lacks integrity of feeling. The site dates between A.D. 1015 and A.D. 185, and modern intrusions substantially alter the how the site "conveys the property's historic character." Elements of the site retain integrity of association. Although the surface of the site is significantly impacted, Atkins' Phase 2 testing suggests intact subsurface deposits are present. The subsurface assemblage may retain integrity of association.

The site is recommended eligible for nomination to the NRHP. It meets Criterion d for its intact archaeological assemblage. Although the site has been heavily impacted, it appears to retain sufficient integrity to be considered NRHP eligible.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12193 (ATK-MH-08)

Previous Research: Not applicable. Site was recorded during Phase 1 investigation.

Phase 1 Investigation: In 2014, site ATK-MH-08 included milling features and other milling implements as well as a lithic debitage scatter. Both core reduction and bifacial lithic reduction stages were noted on-site. Expedience tools were also recorded. These components are indicative of a temporary camp or special use site with limited chronological occupation. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, surface collection was performed, as well as ten STP and one TEU excavation. Despite surface inventory, ten STP and a TEU only 19 stone artifacts, including two volcanic biface fragments, and one unidentified non-human bone were recovered. There was no noteworthy stratigraphy and no material for absolute dating such as radiocarbon dating was recovered. One bedrock milling slick was present. Site CA-RIV-12193 is not recommended eligible for inclusion on the CRHR under any criteria. The recommended mitigation measures for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or

particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"Site CA-RIV-12193 is not recommended eligible for inclusion on the CRHR under any criteria… Despite surface inventory, ten STP and a TEU only 19 stone artifacts, including two volcanic biface fragments, and one unidentified (*non-human)* bone were recovered. There was no noteworthy stratigraphy and no material for absolute dating such as radiocarbon dating was recovered. One bedrock milling slick was present. Given the results of the Phase 2 testing, the site has no potential to contain any significant intact cultural component that would provide temporal or behavioral context for the milling feature. Therefore, it will not yield information important to the prehistory or history of the local area, California, or the nation."

NRHP Evaluation: For the same reasons described above, the site is not recommended eligible for nomination to the NRHP. It has no association to significant events or people in the past and lacks any features that would qualify it under Criterion c. Investigation only identified 19 artifacts, with no intact subsurface component. The site cannot yield information important to prehistory or history, and so the site is recommended not eligible under Criterion d. Because the site is not recommended eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12199 (ATK-MH-02)

Previous Research: Not applicable. Site was recorded during Phase 1 investigation.

Phase 1 Investigation: In 2014, site ATK-MH-02 was an extensive quarry site with dense shatter and debitage scatters. Core reduction stages of the lithic reduction sequence were predominant as were core fragments, battered cobbles and expediency tools. This is representative of a special use site focused on chipped stone raw material collection and tool production. While this site encroaches on LSA-CMU-532-H-1 it is clearly not associated with the historic occupation of the old homestead and has been considered to be a separate site for management purposes. While it is common for such occurrences to be considered a single multi-component site, the historic homestead has already been evaluated and found to not be eligible for listing on the CRHR or the NRHP. It is likely that ATK-MH-02 does retain characteristics that would ensure its eligibility for the CRHR or NRHP and so has been kept as a separate site. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, this site consisted of a naturally occurring quartz vein feature and debitage. Surface collection and subsurface excavation occurred in the form of 11 STP and one TEU.

During Phase 2 efforts, illegal prospecting and mining activities were discovered in and around CA-RIV-12199. On October 15, 2015, representatives from the Project team, the City and the Pechanga Tribe met at the Project site along with a member of the Riverside County Sheriff's Department to view and make a formal report of the illegal prospecting and mining activities.

Subsurface testing of the site confirmed that illegal prospecting and mining activities had destroyed the site integrity and eliminated any research potential for the resource. Site CA-RIV-12199 is recommended as not eligible for listing on the CRHR under any criteria. The recommended mitigation measures for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"Site CA-RIV-12199 is one of two known quartz quarries within one mile of the project area. There is no evidence to support this resource had made a significant contribution to the cultural heritage of California (Criterion 1); does not have a demonstrated association with the lives of persons important to local, California, or national history (Criterion 2); does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic value (Criterion 3). As a highly disturbed site, this resource does not have potential to yield information important to the prehistory or history of the local area, California, or the nation (Criterion 4)."

NRHP Evaluation: For the same reasons described above, the site is recommended not eligible for nomination to the NRHP. It has no association to significant events or people in the past. Although it provides a source for quartz, which are important to local tribes, consultation indicated this site is not recognized as important. The site lacks any features that would qualify it under Criterion c. The modern disturbance of the quarry has heavily impacted the integrity of the site, and Phase 2 investigations only identified 69 artifacts, with no significant subsurface component. The site cannot yield information important to prehistory or history, and so the site is recommended not eligible under Criterion d. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12242 (LSA-CMU-532-H-1 & ATK-MH-15)

Previous Research: This resource is the 1933 Edward Wright homestead, which includes a masonry residence, barbed wire fencing, masonry gateways, two masonry barbecues, masonry and concrete water conveyance and storage features, and an olive grove. The stone in the masonry structures was locally quarried. The historic features related to the homestead occupy approximately 50 acres. The site condition is considered fair. Although some of the resource's elements previously described or plotted on historic maps were not observed during the 2006/2007 study and appear to have been destroyed, most of the original features appear to be intact; the main building and some of the outlying stone structures are capable of performing their original functions. Disturbances within the homestead boundaries include

dense natural overgrowth and disturbances related to off-road vehicle use, which is sporadically heavy. The site boundaries have been plotted according the extent of the recorded features. No historic artifacts were identified.

Phase 1 Investigation: In 2014, site LSA-CMU-532-H-1 is reported as the remains of the Edward Wright Homestead. The site is comprised of 13 separate features built between 1933 and the mid 1940's. The buildings were constructed in the Stone Vernacular style. The site was assessed for eligibility in 2006 by LSA Associates based on nine features and found to not meet any of the criteria for listing in the NRHP or CRHR. During Atkins' survey, four newly recorded features were added to the site. These features include an expanded fence line, a fountain and pool feature, a bathhouse and possible associated privy, and a fire pit. These features are all located outside of the Project development footprint.

Atkins has reconsidered the eligibility of this resource in light of the newly discovered and recorded features; however, it has been determined that none of the newly recorded features exhibit features that would change the eligibility recommendations. This site is still considered to be not eligible for the NRHP and the CRHR. Recommended next step is Phase 2 testing and evaluation in select areas such as near the petroglyph.

Phase 2 Investigation: In 2015/2016, this site consisted of a previously evaluated historic homestead. Three STP were excavated within the Project footprint. The investigations found a prehistoric component of the site during subsurface testing, which consisted of six pieces of quartz debitage and petroglyphs. The boulder with petroglyphs has been relocated, compromising its integrity. While on-site, the potential of moving the boulder to open space prior to Project construction was discussed. Modern trash was noted at the same depths as prehistoric artifacts, indicating a high level of disturbance. Site CA-RIV-12242 is recommended as not eligible for listing on the CRHR under any criteria. The recommended mitigation measures for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"During the 2006 LSA survey, CA-RIV-12242 was recommended as not eligible for listing on the CRHR under any of the four criteria, although the homestead retains a moderate level of architectural integrity. The explanation was: "Although the Edward Wright Homestead was among the last granted in Riverside County, it does not appear to be more closely associated with homesteading or any other broad patterns of development that are significant in National, State, or local history (Criterion A and Criterion 1). In addition, research has revealed no evidence indicating that Edward Wright was a person of importance in National, State, or local history (Criterion B and Criterion 2). Although the very modest residence and related features are somewhat unique in their materials and method of construction the architectural

integrity of the features has been compromised and they do not represent a significant example of a type, period, region, or method of construction, nor are they the work of a notable architect (Criterion C and Criterion 3). Finally, none of the information recovered during the current study indicates that the Edward Wright Homestead is likely to yield any information important to the study of history or prehistory (Criterion D and Criterion 4)." (LSA 2007)"

And:

"The 2016 investigations found a prehistoric component of the site during subsurface testing, which consisted of six pieces of quartz debitage and petroglyphs. The sparse scatter cannot address any of the research goals for the project, and the boulder with petroglyphs has been relocated, compromising its integrity. While on-site, the potential of moving the boulder to open space prior to project construction was discussed. Modern trash was noted at the same depths as prehistoric artifacts, indicating a high level of disturbance. This prehistoric component does not fit any criteria for the CRHR."

Therefore, this site is not recommended eligible for inclusion on the CRHR under any criteria

NRHP Evaluation: For the same reasons described above, the site is recommended not eligible for nomination to the NRHP. It has no association to significant events or people in the past and lacks any features that would qualify it under Criterion c. Investigation identified the artifact assemblage is mixed with modern trash, indicating the site has no intact prehistoric component. The site cannot yield information important to prehistory or history, and so the site is not eligible under Criterion d. There is one boulder with petroglyphs, which could be considered ceremonial. Unlike other sites in the area where ceremonial items remain relatively in situ, the relocation has compromised this feature's integrity, rendering it ineligible for nomination to the NRHP. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12243 (LSA-CMU-532-S-4)

Previous Research: This site consists of a milling slick on a granitic boulder. Both the boulder and slick are in good condition.

Phase 1 Investigation: In 2014, site LSA-CMU-532-S-4 was a small, constrained site consisting of three milling slicks and a retouched flake. The restricted number and variety of artifact types at the site imply that it represents a limited or focused activity area of a special use site. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, this resource consisted of two bedrock milling features, one retouched flake, and quartz debitage. Surface collection, five STP, two TEU, and one trench were performed. Although two milling features were recorded, surface inventory, five STP, two TEU, and one trench only recovered 7 artifacts. Aside from the milling slicks, no other features were recorded. The site provides little to know stratigraphy and no material suitable for absolute dating such as radiocarbon dating. Site CA-RIV-12243 is not recommended eligible for inclusion on the CRHR under any criteria. The recommended mitigation measure for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"Site CA-RIV-12243 is not recommended eligible for inclusion on the CRHR under any criteria, and cannot address any of the research goals outlined previously. Although two milling features were recorded, surface inventory, five STP, two TEU, and one trench only recovered seven artifacts. Aside from the milling slicks, no other features were recorded. The site provides little to no stratigraphy and no material suitable for absolute dating such as radiocarbon dating. Given the results of Phase 2 testing, the site has no potential to contain any significant intact cultural component that would provide temporal or behavioral context for the milling slicks. Therefore, it will not yield information important to the prehistory or history of the local area, California, or the nation."

NRHP Evaluation: For the same reasons described above, the site is recommended not eligible for nomination to the NRHP. It has no association to significant events or people in the past and lacks any features that would qualify it under Criterion c. Investigation only identified seven artifacts, with no intact subsurface component. The site cannot yield information important to prehistory or history, and so the site is recommended not eligible under Criterion d. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12244 (LSA-CMU-532-S-3)

Previous Research: The site consists of a lithic scatter. Materials include at least 10 fine-grain quartzite core reduction flakes, at least five andesite core reduction flakes, and one quartzite core. Hundreds of quartz fragments litter the site, some are clear, and others are totally opaque. The poor quality of the quartz materials makes their cultural association dubious; the site boundaries have therefore been plotted by the location of the higher quality andesite and quartzite materials. The site condition is fair. Disturbances include erosion and impacts related to construction. One identifiable artifact was recorded. This is a small ground/hammerstone tool rounded on one end and flat on the other. The entire surface of the tool has been ground smooth; the rounded end shows subsequent signs of battering. The item's shape and size indicate that it was probably used for acorn processing. Soils, which may exhibit some depth, consist of decomposed granite and dark silt with small granitic boulders and granitic, quartzite, and andesite cobbles visible on the surface throughout the site.

Phase 1 Investigation: In 2014, site LSA-CMU-532-S-3 was an extensive lithic scatter that contains debitage, expediency tools and formed tools. It is lacking in groundstone artifact classes and any evidence

of religion or ceremonialism. From the information available on the surface of the site it is likely a seasonal or temporary camp. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: In 2015/2016, this site consisted of milling implements, bifaces, cores, stone tools, retouched flakes, and debitage. Surface collection, 74 STP, and two TEU were performed at this site. Due to the high density of subsurface artifacts, it is likely that this subsurface component is not exhausted, and data potential still exists where testing did not occur. Phase 2 testing returned positive results excavated to depths of 80 cmbs. Artifacts recovered from these depths exhibit an intact, subsurface portion of the site.

Potential information may still exist to date the site. The dense artifact distribution on the surface warrants additional analysis to ensure no further research potential is impacted by the Project. Protein residue analysis on recovered artifacts has the potential to increase the known types of plant or animal resources exploited at this site. Rabbit protein residue was found on a handstone and five soil samples. Further research also may answer a majority of the research questions posed at the beginning of this report, such as the chronological sequence of occupation within the Project area, inferences to seasonal mobility, and how the area was exploited by the native inhabitants.

CA-RIV-12244 is recommended as eligible for listing on the CRHR under Criterion 4. Recommended mitigation measures for this site include Phase 3 data recovery, controlled grading, temporary construction fencing, dust control plan implementation, site avoidance mitigation, and Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: Site CA-RIV-12244 is associated with TCP 3. CA-RIV-12244 contains high quantities of burned, fragmented metates. These metate pieces were of particular interest to the Pechanga Tribe, and they correspond to practices similar to what was documented in the Davis and Strong research reports. The majority of the parcel's burned faunal remains found on the Project site were recovered at CA-RIV-12244, along with many Tribe identified "killed" metates. However, no thermal features were found. These findings, when taken in the aggregate, support the Pechanga Tribe's interpretation that CA-RIV-12244 contains both ceremonial and/or ritual activities.

A total of 1,120 artifacts were collected at this site however, most of these artifacts are utilitarian rather than ceremonial.

This site was also likely used over multiple occupations, and at least one of those occupations included ceremonial activities. This area differs from TCP 1 in that it lacks rock art and rock shelters.

The contents of TCP 3 reflect ceremonial activities which the Pechanga Tribe has identified as important to their cultural practices.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"CA-RIV-12244 is not associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States (Criterion 1); is not associated with the lives of persons important to local, California, or national history (Criterion 2); and does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic value (Criterion 3). The recovered groundstone artifacts, intact subsurface archaeological deposits, and intense surface artifact distribution have yielded, or have the potential to yield, information important to the prehistory or history of the local area, California, or the nation (Criterion 4)."

The Ethnography 2020 information provided by the Pechanga Tribe demonstrates that the site may be eligible under Criterion 1 for the site's association with important events. The Pechanga Tribe associates the artifacts found at this site with important ceremonial activity. The site is not eligible under Criterion 2, for an association with the lives of a person important in our past (see CA-RIV-645 for additional details). Nor is the site eligible under Criterion 3 for the distinctive characteristics of a type, period, region, or method of construction, or for representing the work of an important creative individual, or for possessing high artistic values. [45]

Therefore, CA-RIV-12244 is recommended eligible for listing on the CRHR under criteria 1 and 4.

NRHP Evaluation: The site is likely associated with past ceremony, indicated by ceremonial artifacts. As such the site is associated with important events in the past and is eligible under Criterion a. It is not associated with any specific historically significant individual, and therefore is not eligible under Criterion b (see CA-RIV-645 for additional details). There are no built environment features and therefore does not include any of the attributes that qualify it under Criterion c. The extensive assemblage of artifacts and features, including a sub-surface component, has the potential to yield information important to prehistory, and so the site is eligible under Criterion d.

The site retains integrity of location; nothing on the site appears to have been relocated. There are no attributes to the site that reflect design. The site retains some integrity of setting. The site retains integrity of materials and workmanship in its artifact assemblage. It likely retains integrity of feeling. Although the age of the site is uncertain, and there are modern disturbances nearby, the disturbances are minimal enough that they do not substantially alter how the site "conveys the property's historic character." Elements of the site retain integrity of association in its significant archaeological assemblage.

The site is recommended eligible for listing on the NRHP under criteria a and d.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12245 (LSA-CMU-532-S-2)

Previous Research: The site consists of a single granitic boulder containing a bedrock mortar and an associated milling slick. The site condition is considered poor due to severe disturbances which include a

[45] Bright, J. (2020). *Cultural Resources Summary*. Page 20. Denver, CO: WSP. Confidential Appendix 9.4.4.

general trash scatter surrounding the site area, severe erosion due to sheet washing down the slope, and sporadically dense vegetation.

The presence of a bedrock mortar indicates that acorn processing probably took place here. Extreme disturbances present on the site have obscured visibility to approximately 10–30 percent, and soils include some organic material mixed with decomposing granitics and sand, indicating that additional site components may be buried.

Phase 1 Investigation: In 2014, site LSA-CMU-532-S-2 was an extensive artifact scatter with a large variety of artifact classes. Formed tools, expediency tools, grinding surfaces, lithic reduction activities and potentially ceremonial activities were carried out at this site. It is likely a residential base. Recommended next step is Phase 2 testing and evaluation.

Phase 2 Investigation: The 2015/2016 evaluation was for the portion of CA-RIV-12245 that is located within the Project footprint. The site boundary for CA-RIV-12245 that is within the Project footprint contained debitage in the surface collection and one of the twelve STP was positive. The portion outside of the Project footprint was not evaluated. Much of site CA-RIV-12245 is outside of the Project footprint and will not be impacted by the Project. Within the Project footprint, surface inventory and 12 STP only recovered seven artifacts, with no faunal remains, no features, and no stratigraphy or material suitable for absolute dating, such as radiocarbon dating. The portion of the site in the Project footprint cannot contribute any significance to the overall site. Therefore, no significant impacts will be made to the non-contributing portion of the site and no research potential will be lost due to Project impacts. Site CA-RIV-12245 within the Project footprint is not recommended eligible for inclusion on the CRHR under any criteria. The recommended mitigation measures for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility recommendation for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"The portion of CA-RIV-12245 within the project footprint is not associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States (Criterion 1); is not associated with the lives of persons important to local, California, or national history (Criterion 2); does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic value (Criterion 3). The portion of the site within the project footprint does not have the potential to yield information important to the prehistory or history of the local area, California, or the nation (Criterion 4)." Therefore, this site is not recommended eligible for inclusion on the CRHR under any criteria.

NRHP Evaluation: For the same reasons described above, the site is recommended not eligible for nomination to the NRHP. It has no association to significant events or people in the past and lacks any features that would qualify it under Criterion c. Investigation only identified seven artifacts, with no intact subsurface component. The site cannot yield information important to prehistory or history, and so the site is recommended not eligible under Criterion d. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

Resource Number CA-RIV-12326 (ATK-MH-16)

Previous Research: Not applicable. Site was recorded during Phase 1 investigation.

Phase 1 Investigation: The site was recorded by Atkins in 2014 along the Project site foothills. The site included one quartz end/side scraper, one granite metate, and one bedrock milling feature.

Phase 2 Investigation: In 2015/2016, this site consisted of one bedrock milling feature, one handstone, and debitage. Surface collection, five STP, and one TEU were performed at this site. Although a bedrock milling feature was present, surface inventory, five STP and one TEU only documented four artifacts. Efforts found no faunal remains, no discernible stratigraphy, and no material suitable for absolute dating. Given the results of the Phase 2 testing, the site has no potential to contain any significant intact cultural component that would provide temporal or behavioral context for the milling slicks. Site CA-RIV-12326 is not recommended eligible for inclusion on the CRHR under any criteria. The recommended mitigation measure for this site is Cultural and Native American monitoring during any ground-disturbing activities that may occur in pre-construction or construction phases.

TCP Recognition: This site is not associated with a TCP.

Unique Archaeological Resource Evaluation: This site is not considered a unique archaeological resource because it does not contain information needed to answer important scientific research questions for which there is a demonstrable public interest in that information (Criterion 1); does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2); nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

CRHR Evaluation: The site's eligibility for inclusion in the CRHR was discussed by Atkins in their Phase 2 report (Confidential Appendix 9.4.3):

"Site CA-RIV-12326 is not recommended eligible for inclusion on the CRHR under any criteria, and cannot address any of the research goals outlined previously. Although a bedrock milling feature was present, surface inventory, five STP and one TEU only documented four artifacts. Efforts found no faunal remains, no discernible stratigraphy, and no material suitable for absolute dating. Given the results Phase 2 testing, the site has no potential to contain any significant intact cultural component that would provide temporal or behavioral context for the milling slicks. Therefore, it will not yield information important to the prehistory or history of the local area, California, or the nation." Therefore, this site is not recommended eligible for inclusion on the CRHR under any criteria.

NRHP Evaluation: For the same reasons described above, the site is recommended not eligible for nomination to the NRHP. It has no association to significant events or people in the past and lacks any features that would qualify it under Criterion c. Investigation only identified three artifacts, with no intact subsurface component. The site cannot yield information important to prehistory or history, and so the site is recommended not eligible under Criterion d. Because the site is recommended not eligible under any criteria, an assessment of integrity is not necessary.

Final eligibility determinations for the NRHP and findings of effect pursuant to Section 106 will be the responsibility of the USACE.

SUMMARY

Table 4.4-2, *Summary of Cultural Resources Located Within the MHSPA Project Site,* describes the 12 sites and identifies their Phase 1 and 2 investigation results, TCP findings, CRHR and NRHP eligibility recommendations, and unique archaeological resource recommendation. Four of the sites are recommended eligible for the CRHR and the NRHP.

Table 4.4-2: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
P-33-11236	Grinding slick (three surfaces) (granite)	Four bedrock milling features, one piece of debitage, and one non-human bone.	None	No	No	No
CA-RIV-645	Atkins revisited the site and noted the presence of grinding slicks, a broken projectile point, debitage and bedrock mortars.	24 bedrock milling features, six rockshelters, one petroglyph, one pictograph, multiple bifaces, cores, milling implements, flaked tools, and debitage.	Petroglyphs, pictographs, tourmaline, crystal, non-human burned bone, rock shelters, bedrock milling features, pestles, stone tool fragments, debitage, and apparently "killed" metates. 2,833 artifacts were collected at this site.	Yes, Criteria 1, 3 and 4	Yes, Criterion 1	Yes, Criteria a, c, and d
CA-RIV-3335	Two metate fragments and groundstone fragments were distributed across the site.	Midden soil, milling implements, cores, bifaces, flaked tools, and debitage.	Crystal, non-human burned bone and many apparently "killed" metates. 1,718 artifacts were collected at the site.	Yes, Criteria 1 and 4	No	Yes, Criteria a and d
CA-RIV-3336	Atkins revisited the area and recorded a large, geographically extensive lithic scatter that includes debitage from the complete lithic reduction sequence,	During 2016 testing, one STP was excavated with negative results. Site boundary was updated to depict the artifact assemblage and the	None	CA RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site

Table 4.4-2: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	quartz crystals, groundstone fragments and many expediency tools. Lithic materials present included quartz, jasper and rhyolite.	updated site boundary is no longer within the Project footprint.				
CA-RIV-3339	Four of the bedrock milling features were identified and a much more extensive artifact scatter was recorded. Groundstone and chipped stone tools were observed in addition to quartz crystals, core fragments, and debitage.	One hearth feature, milling implements, cores, portable mortars, one pendant, stone tools, and debitage.	None	Yes, Criterion 4	No	Yes, Criterion d
CA-RIV-12193 (ATK-MH-08)	Site consists of two grinding slicks on two adjacent bedrock outcroppings A metate was also recorded nearby. An associated lithic debitage scatter included quartz core reduction and bifacial reductions flakes, a utilized flake and a metavolcanic bifacial reduction flake.	19 stone artifacts, including two volcanic biface fragments, and one unidentified non-human bone were recovered. One bedrock milling slick was present.	None	No	No	No
CA-RIV-12199 (ATK-MH-02)	Site is an extensive lithic scatter and quartz quarry site comprised of core reduction sequence debitage, core frags, battered cobbles and expediency tools. A pure crystal chopper and four crystal micro-blades	This site consisted of a naturally occurring quartz vein feature and debitage. Site CA-RIV-12199 is one of two known quartz quarries within one mile of the project area. Prospecting pits were dug throughout the site resulting in the	None	No	No	No

Table 4.4-2: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	were also recorded at the site.	complete removal of the quartz vein, up to eight feet below the surface, in pursuit of minerals.				
CA-RIV-12242 (LSA-CMU-532-H-1 & ATK-MH-15)	Stone and mortar residence; masonry watering trough; concrete reservoir; stone gateways; olive grove; barbecue structures; fence liens; pool with fountain with feature of frog spout; bath house and outhouse; and fire pit.	Historic homestead, boulder with petroglyphs, six pieces of quartz debitage and petroglyphs.	None	No	No	No
CA-RIV-12243 (LSA-CMU-532-S-4)	Atkins revisited the area and recorded a retouched flake in the vicinity of the grinding slicks.	Two bedrock milling features, seven artifacts, one retouched flake, and quartz debitage.	None	No	No	No
CA-RIV-12244 (LSA-CMU-532-S-3)	Atkins revisited the area and noted further lithic scatter beyond the previously recorded boundaries. The boundaries have been modified accordingly to accommodate the presence of quartz debitage, expediency tools, a projectile point perform and a core fragment.	High density of subsurface artifacts. Milling implements, bifaces, cores, stone tools, retouched flakes, and debitage. Rabbit protein residue was found on a handstone and five soil samples.	High quantities of burned, fragmented metates. Majority of the parcel's burned non-human bone is found in this site, along with many killed metates, but no thermal features. 1,120 artifacts were collected at this site.	Yes, Criteria 1 and 4	No	Yes, Criteria a and d
CA-RIV-12245 (LSA-CMU-532-S-2)	Atkins surveyed the area surrounding the site and expanded the boundaries significantly. There is a large lithic scatter that includes chert, quartz and rhyolite debitage, expediency tools,	Within Project footprint, seven artifacts recovered.	None	No	No	No

Table 4.4-2: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	manos, a burin, and formed tools.					
CA-RIV-12326 (ATK-MH-16)	This site consists of one quartz end/side scraper, one granite metate, and one bedrock milling feature.	Four artifacts, one bedrock milling feature, one handstone, and debitage	None	No	No	No

As demonstrated above, a number of cultural resources investigations culminated in the identification/relocation and recording of 12 archaeological sites. Three of those sites have a ceremonial component that qualifies them as TCPs (CA-RIV-645, -3335 and -12244). Two sites have or had an historic component (CA-RIV-645 and CA-RIV-12242), although the historic component of CA-RIV-645 no longer exists. Four of the twelve sites are recommended eligible for both the CRHR and NRHP. The Project will require a Section 404 permit which means the USACE will review and make a final determination under the NHPA with respect to eligibility pursuant to the Section 106 assessment process.

4.4.5 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been used as significance criteria in this section. Accordingly, the Project may have a significant environmental impact if one or more of the following occurs:

- Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 (see Impact 4.4-1);
- Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 (see Impact 4.4-2);
- Would the Project disturb any human remains, including those interred outside of formal cemeteries (see Impact 4.4-3)?

METHODOLOGY AND ASSUMPTIONS

The Project is evaluated against the aforementioned significance criteria/thresholds as the basis for determining the impact's level of significance concerning cultural resources. In addition to project design features (PDFs), this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impacts. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on cultural resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: temporary impacts and permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on field reconnaissance conducted by LSA in 2006; Atkins from 2014 through 2016; WSP in 2018; and Kimley-Horn on January 10, 2019; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents.

PROJECT DESIGN FEATURES

- The City and Project Applicant have engaged in long-term, extensive consultation discussions with representatives from the Pechanga Tribe in order to address specific concerns regarding sensitive environmental resources such as cultural resources (see Table 4.4-1: *Consultation History with the Pechanga Tribe*). The Project Applicant has made modifications to the land use plan and associated grading footprint in order to avoid, where feasible, the significance bearing portion of an identified site. Where avoidance is not feasible mitigation measures, beyond what was recommended in the Project's cultural resource technical reports, are included to further minimize cultural resources impacts.
- Preservation of over 600 acres of open space. Open space preservation allows for the land to be left in its present condition with no ground-disturbing activities. The absence of construction activities allows undiscovered cultural resources to remain undisturbed.
- In consultation with the Pechanga Tribe, the City and the Project Applicant modified the McElwain Road right-of-way and alignment to minimize disturbance to sensitive resource areas.

4.4.6 IMPACTS AND MITIGATION MEASURES

The Project's grading plan proposes to minimize impacts to the site's natural topography by focusing development in areas where previous disturbances have occurred and by preserving major topographical landforms in designated permanent open space areas. Conventional cut and fill grading will be used to construct the graded pads and roadways, except in those areas where controlled grading is required (see MM CUL-10, page 4.4-58). The EIR analysis assumes just over three million cubic yards of cut and fill material that will be balanced on-site. The maximum proposed cuts are approximately 80 feet with the majority of the cuts to be 15 feet. While the Project site is currently vacant and undeveloped, there are several box culverts and corrugated metal pipes on the Project site.

Impact 4.4-1: Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

Two sites have an historic component (CA-RIV-645 and CA-RIV-12242). With respect to CA-RIV-645, the historic component of the site was indicated only by groves of trees and structures visible in historic aerials, and a cleared area in the north. The only remaining aspect of the historic component is the cleared field on the north end, which has been regularly disturbed. Nothing remains of the structures or grove and so the historic component lacks any integrity; therefore, the Project would not cause a significant adverse impact to a historical resource which has already been compromised. However, the site is recommended CRHR eligible under criteria 1, 3 and 4; as a unique archaeological resource under Criterion 1; and recommended NRHP eligible under criteria a, c, and d.

With respect to CA-RIV-12242, although the Edward Wright Homestead was among the last granted in Riverside County, it does not appear to be more closely associated with homesteading or any other broad patterns of development. Edward Wright was not a person of importance in national, state, or local history. The architectural integrity of the structure's features has been compromised and do not represent a significant example of a type, period, region, or method of construction, nor are they the work of a notable architect. None of the information recovered during the current study indicates that the Edward Wright Homestead is likely to yield any information important to the study of history or prehistory. Neither CA-RIV-645 nor CA-RIV-122242 are significant historic resources.

Although no significant impacts are anticipated, MM CUL-9 (see page 4.4-58) and MM CUL-12 (see page 4.4-59) are proposed to address the discovery of potential unknown historic resources during ground-disturbing activities.

Impact 4.4-2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

A significant impact will occur if grading and construction activities result in a substantial adverse change in the significance of an archaeological resource determined to be "historic" or "unique." As defined in PRC §21083.2, a "unique" archaeological resource is 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 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.

According to CEQA, if a resource is neither unique nor historical, the effects of a project on that resource will not be considered significant effects on the environment (CEQA Guidelines §15064(C)(4)).

Under a worst-case scenario, it is assumed that any archaeological resources located within the development areas of the Project will be eliminated through grading and construction activities. However, the significance of the impact shall be based upon the criteria presented in the thresholds of significance (i.e., is archaeological resource determined to be "historic" or "unique"). If a site is not in a development area, there will be no direct impact.

CONSTRUCTION

Of the 12 known cultural resources sites within the Project site, four sites are recommended for further data recovery efforts for areas that cannot feasibly be avoided by the Project design (Phase 3 data recovery[46]): CA-RIV-645, CA-RIV-3335, CA-RIV-3339, and CA-RIV-12244. Phase 3 data recovery is required under MM CUL-1 (see page 4.4-54).

As previously discussed, eight sites within the Project site are recommended not eligible for inclusion on the CRHR or NRHP. These sites offer no future research potential due to the sparsity of artifacts and features. Therefore, these eight resources are not considered historical resources. The portion of site CA-RIV-12245 within the Project footprint does not contribute to any significance.

CA-RIV-645. Portions of CA-RIV-645 are within the Project planning areas, open space, interior streets, and the off-site improvements. Detailed information is available in Confidential Appendix 9.4. MMs CUL-1 through CUL-11, MM CUL-13, MM CUL-14, and MM CUL-18 are required (see pages 4.4-54 through -61). MM CUL-1 requires Phase 3 data recovery. Implementation of these measures will reduce impacts to a less than significant level.

CA-RIV-3335. Portions of CA-RIV-3335 are located within Project planning areas, open space and an interior street. Detailed information is available in Confidential Appendix 9.4. MMs CUL-1 through CUL-11, MM CUL-16, and MM CUL-18 (see pages 4.4-54 through -61) are required. Implementation of these measures will reduce impacts to a less than significant level.

CA-RIV-3339. Portions of CA-RIV-3339 are within a Project planning area, open space, interior streets, and the off-site improvements. Detailed information is available in Confidential Appendix 9.4. MMs CUL-1 through CUL-11, MM CUL-17, and MM CUL-18 (see pages 4.4-54 through -61) are required. Implementation of these measures will reduce impacts to a less than significant level.

CA-RIV-12244. Portions of CA-RIV-12244 are located within a Project planning area, open space and interior streets. Detailed information is available in Confidential Appendix 9.4. MMs CUL-1 through CUL-11, and MM CUL-13 through MM CUL-15, and MM CUL-18 (see pages 4.4-54 through -61) are required. Implementation of these measures will reduce impacts to a less than significant level.

Unique Archaeological Resource. Only one of the recommended CRHR sites is also recommended as a unique resource under CEQA. CA-RIV-645 is considered a "unique archaeological resource" because it contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information (Criterion 1). CA-RIV-645 does not have a special or particular quality such as being the oldest of its type or the best available example of its type (Criterion 2), nor is the site directly associated with a scientifically recognized important prehistoric or historic event or person (Criterion 3).

[46] The Project Applicant will identify avoidance to the greatest extent possible. Phase 3 testing will only occur where avoidance is not feasible.

Phase 2 testing returned positive results excavated to depths of 80 cmbs. This indicates a varied cultural deposit that is below the surface with good integrity that has not been exhausted by Phase 2 testing. Therefore, there is a high probability that more unique archaeological resources are present at deeper depths at this site. Therefore, implementation of MM CUL-3, MM CUL-6, and MM CUL-10 (see page 4.4-55 through -58) will be required to reduce impacts to a less than a significant level.

Following tribal consultation meetings between the Lead Agency, the Project Applicant, and the Pechanga Tribe, the Project boundaries and land use development plan was altered to further avoid impacts to identified cultural resources. The Project currently reflects this revision. Specifically, the Project's development plan was revised to avoid the significance-bearing portions of CA-RIV-645 and CA-RIV-12244 to the greatest extent feasible and possible.

Although Project construction may still impact the resources, implementation of MM CUL-3 through MM CUL-7 and MM CUL-10, MM CUL-11, MM CUL-13, MM CUL-14 (see pages 4.4-55 through -60) will reduce impacts to a less than significant level. MM CUL-18 (see page 4.4-61) would also implemented. Impacts to archaeological resources will be less than significant with mitigation incorporated.

On-Site Reburial Location

The Project Applicant and Lead Agency, with input and guidance from the Pechanga Tribe, identified a location for repatriation and reinterment of cultural resources discovered during Project construction activities. The reinterment location is located with the MHSPA site boundary, but outside of designated open space. Ground-disturbing activities and development on the reburial location will be prohibited, with the intent to preserve the artifacts in perpetuity. See MM CUL-11 (see page 4.4-59) for detailed information.

OPERATIONS

Upon Project construction and completion, the Project site will consist of single- and multi-family housing, mixed-use development, parks and recreation opportunities, and commercial use. These land use activities will not further impact archaeological resources. Therefore, operation of these Project development types shall not cause a substantial adverse change in the significance of an archaeological resource.

Off-Site Construction and Operations Impacts

The Project proposes off-site utility and circulation improvements. While records and archival research conducted for the Project cultural resources analyses typically included the Project site and surrounding areas (one-mile buffer), the field surveys did not include off-site portions of the Project.

Construction and operations impacts from the off-site utility improvements within Keller Road and Zeiders Road are unlikely due to their previous disturbance from earlier roadway construction and utility placement activities. However, in the event that unanticipated cultural resources are encountered during construction, MM CUL-3 (see page 4.4-55) would be implemented to address inadvertent finds.

The McElwain Road extension construction occurs in the southeast area of the Project area, within proximity to the Greer Ranch residential community. The off-site portion of the McElwain Road extension was not included in the study area for cultural resources. However, the on-site construction and operations discussions above are inclusive of the off-site improvements and impacts. As are the below

mitigation measures. MMs CUL-3 through CUL-7, MM CUL-10, MM CUL-11, MM CUL-13, and MM CUL-14 (see pages 4.4-55 through -60) are applicable.

Impact 4.4-3: Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The archaeological records search and field survey did not reveal any resources known to contain human remains within or near the Project site. However, the entirety of the Project area is considered sensitive for archaeological resources due to the presence of archaeological sites, and ground-disturbing activities have the potential to reveal human remains.

While human remains have not been discovered on the Project site, consultation with the Pechanga Tribe has yielded information involving tribal concerns for the potential recovery of human remains. MM CUL-2, MM CUL-4, MM CUL-6, and MM CUL-10 (see pages 4.4-55 through -58) are included to address these concerns.

Therefore, ground-disturbing activities could significantly impact unknown human remains. If human remains are found, those remains require proper treatment in accordance with applicable laws, including CCR §15064.5, HSC §7050.5 through 7055, and PRC §5097.98 and §5097.99. HSC §7050.5 through 7055 describe the general provisions for treatment of human remains. Specifically, HSC §7050.5 prescribes the requirements for the treatment of any human remains that are accidentally discovered during excavation of a site. HSC §7050.5 also requires that all activities in the immediate vicinity of the discovery cease immediately, and a qualified archaeologist and Native American monitor be contacted immediately.

As required by state law, the procedures set forth in PRC §5097.98 shall be implemented, including evaluation by the County Coroner and notification of the NAHC. The NAHC shall then designate the MLD of the unearthed human remains. Note that the NAHC previously designated the Pechanga Tribe as the Native American monitors for the survey and as the MLD for further consultation by the City of Murrieta. Coordination shall continue with the Pechanga Tribe.

If human remains are found during excavation, excavation will be halted near the find and any area that is reasonably suspected to overlay adjacent remains shall remain undisturbed until the County Coroner has investigated the discovery, and appropriate recommendations have been made for the treatment and disposition of the remains. Compliance with the established regulatory framework (i.e., HSC §7050.5 through §7055 and PRC §5097.98 and §5097.99) will reduce impacts to a less than significant level. Compliance with MM CUL-2, MM CUL-4, MM CUL-6 and MM CUL-10 (see pages 4.4-55 through -58) will further minimize potential impacts to human remains.

OPERATIONS

Occupation of the Project site will not further impact human remains. The Project will consist of single- and multi-family housing, mixed-use development, parks and recreation opportunities, and commercial use. Therefore, operation of these Project development types will not cause a substantial adverse effect to undiscovered human remains.

Off-site Construction and Operations Impacts

The Project proposes off-site utility and circulation improvements. While archaeological records search and field survey did not reveal any resources known to contain human remains within or near the Project site, the field surveys did not include off-site portions of the Project.

Construction and operations impacts from the off-site utility improvements within Keller Road and Zeiders Road are unlikely due to their previous disturbance from earlier roadway construction and utility placement activities. However, in the event that human remains are encountered during construction, MM CUL-2 (see page 4.4-55) would be implemented to address discovery of human remains.

The McElwain Road extension construction occurs in the southeast area of the Project area, within proximity to the Greer Ranch residential community. The off-site portion of the McElwain Road extension was not included in the study area for cultural resources. However, the on-site construction and operations discussions above are inclusive of the off-site improvements and impacts. As are the below mitigation measures pertaining to the discovery of human remains. MM CUL-2, MM CUL-4, MM CUL-6, and MM CUL-10 (see pages 4.4-55 through -58) are applicable.

4.4.7 IMPACTS ASSESSMENT AND MITIGATION MEASURES

Of the 12 resources discussed in this section that were evaluated for eligibility recommendation:

- Six of the sites are recommended as not eligible for inclusion on the CRHR (P-33-11236, CA-RIV-12193, CA-RIV-12199, CA-RIV-12242, CA-RIV-12243, and CA-RIV-12326). These six sites offer no future research potential due to the sparsity of artifacts and features. Cultural and Native American monitoring is recommended during Project-related ground-disturbing activities in these areas in the event subsurface components still exist.
- The portion of site CA-RIV-12245 within the Project footprint does not contribute to any significance.
- The site boundary for CA-RIV-3336 was updated during Phase 2 testing. This site is no longer within the Project footprint and no impacts will occur. The site remains unevaluated for an eligibility recommendation.
- The remaining four sites (CA-RIV-645, CA-RIV-3335, CA-RIV-3339, and CA-RIV-12244) are recommended eligible for inclusion in the CRHR. Eligibility determinations for the NRHP and findings of effect pursuant to Section 106 are the responsibility of the USACE. Recommended future action for the four sites includes Phase 3 data recovery and monitoring. Appropriate avoidance, data recovery, and monitoring will mitigate impacts to a less than significant level.

  The potential to move the petroglyph boulder located at site CA-RIV-12242 to open space prior to Project construction was discussed.

  Note that no human remains have been documented anywhere in the Project area.

MITIGATION MEASURES

MM CUL-1: **Phase 3 Data Recovery Plan.** Sites CA-RIV-645, -3335, -3339, and -12244 will be impacted during earthwork and ground-disturbing activities during development of the Project.

Prior to approval of a Project grading plan by the City, a Phase 3 data recovery plan will be prepared by the Project Archaeologist to address the areas of these sites that will be impacted by development of the Project. All Phase 3 work will be conducted in accordance with applicable professional standards and applicable standards of SHPO and will provide sufficient scientific information to fully mitigate the impacts of development as those relate to these sites.

Prior to finalization of the Phase 3 data recovery plan, the Project Archaeologist will circulate the draft plan to the City and any tribe(s) requesting monitoring of the Project for review and comment.

The City Planner will have final review and approval authority for the Phase 3 data recovery plan. Upon completion of the Phase 3 work, a final report will be prepared and circulated to the tribe(s) and City, and will include information substantiating the implementation of the plan and its findings.

MM CUL-2: **Human Remains**. For discoveries of Native American human remains, PRC §5097.98 and HSC §7050.5 will be followed. If human remains are encountered, all ground-disturbing activities will halt within 100 feet ("buffer area") of the discovery, and the human remains, along with any associated grave goods and associated burial and sacred items will remain in place until the coroner makes its findings in accordance with the applicable law. The halt will continue until the processes and procedures required under PRC §5097.98 and HSC §7050.5 are completed.

MM CUL-3: **Inadvertent Archaeological/Cultural Find – Unique Resources**. If, during earthwork and ground-disturbing activities, unique cultural resources, as that term is defined in PRC §21083.2(g), are discovered and the resources were not assessed or addressed by the prior archaeological investigations or environmental assessment conducted prior to Project approval, the following procedures will be implemented:

a. All earthwork and ground-disturbing activities within 100 feet ("buffer area") of the discovery will be halted while the Project Archaeologist makes an initial assessment of the significance of the discovery;

b. Once the Project Archaeologist makes the initial assessment, the City Planner will convene a meeting with the Project Applicant, Project Archaeologist, and tribe(s) to discuss the significance of the discovery and what mitigation measures are feasible in accordance with the requirements of PRC §21083.2(b). If the parties cannot reach agreement on a feasible mitigation measure, the City Planner will make a final determination on the appropriate mitigation and treatment of the resources;

c. Earthwork and ground-disturbing activities will not resume within the buffer area of the discovery until an agreement has been reached by all parties as to the appropriate mitigation and treatment of the resources. Earthwork and ground-disturbing activities will be allowed to continue outside of the buffer area and will be monitored by archaeological and tribal monitor(s).

d. Treatment and avoidance of the newly discovered resources will be consistent with these mitigation measures and the Cultural Resources Treatment and Monitoring Agreement as required by MM CUL-4.

MM CUL-4: **Cultural Resources Monitoring Plan.** At least thirty (30) days prior to submittal of final grading plans to the City, the Project Applicant, Project Archaeologist, City Planner and tribe(s) will meet and develop a Cultural Resources Monitoring Plan ("CRMP") for the treatment and mitigation of Native American cultural resources discovered during Project development. Treatment of the newly discovered cultural resource(s) will be consistent with the terms and provisions of the CRMP, as may be amended. All parties are required to withhold public disclosure of information related to the treatment and mitigation of cultural resource(s) pursuant to the specific exemption set forth in CGC §6254(r).

The CRMP will include/address each of the following:

a. The parties entering into the CRMP, and their contact information.

b. The Project schedule including the frequency and location of monitoring of earthwork and ground-disturbing activities and details regarding what types of construction related activities will require monitoring.

c. Roles and responsibilities of the Project Archaeologist, tribal monitor(s), and the contact information and protocols for notification of the Project Applicant, City and tribe(s).

d. The terms of compensation for the tribal monitor(s) and insurance requirements for tribal monitor(s).

e. Treatment options for newly discovered cultural resources encountered during Project development. Treatment of the cultural resource(s) may include avoidance of the cultural resource(s), if feasible and possible through changes in Project design, in place preservation of resource(s) (capping), cataloging and curation of the resources (MM CUL-9), and/or reburial of the cultural resource(s) in the on-site preservation location (MM CUL-11).

f. Reburial of the resources on the Project property, in accordance with MM CUL-11, will be completed in a culturally appropriate manner and will not take place until all legally required cataloging, recordation and study activities have been completed.

g. Items identified by the tribe(s) as sacred, ceremonial, or grave goods will be identified, cataloged by description only, with no photography of the items being conducted, analyzed and tested (by non-destructive means), and will remain on the Project site, in a secured location, until those items can be reburied in accordance with this mitigation measure. In no event will sacred, ceremonial or grave goods be removed from the Project site.

h. Reporting requirements for the Project Archaeologist including summaries of all activities and finds and an update on the progress of the CRMP implementation. At a minimum, the Project Archaeologist will submit monthly status reports to the City

Planner and the tribe(s) summarizing all activities during the period and the status of progress on compliance with the Project mitigation measures.

i. Any disagreements or disputes between the Project Archaeologist and tribal monitor(s) as to the classification, treatment and disposition of any finds will be discussed at a meeting with the City Planner to determine a resolution. The City Planner will have the final authority as to the treatment and disposition of resources.

MM CUL-5: **Project Archaeologist.** At least thirty (30) days prior to submittal of final grading plans to the City, the Project Applicant will retain a City of Murrieta-approved Project Archaeologist that meets the minimum qualifications of the United States Secretary of the Interior's Standards and Guidelines (NPS 1983). The Project Archaeologist will be on the Project site during all earthwork and ground-disturbing activities. The Project Applicant will submit a fully executed copy of the contract with the Project Archaeologist to the City Planner and the tribe(s) as evidence of compliance with this mitigation measure.

The Project Archaeologist will participate in any required testing and monitoring, in accordance with these mitigation measures and the CRMP. The Project Archaeologist will have the authority to temporarily divert, redirect or halt the earthwork and ground-disturbing activities within 100 feet ("buffer area") of any discovery of Native American cultural resources in order to allow for the identification, evaluation and recovery of discovered Native American cultural resources in coordination with the tribal monitor(s).

MM CUL-6: **Native American Tribal Monitoring.** At least thirty (30) days prior to applying for the first grading permit for the Project, the Project Applicant by and through the Project Archaeologist will contact the tribe(s) that have requested construction monitoring, and will notify the tribe(s) of their intent to pull permits for the proposed earthwork and ground-disturbing activities and coordinate with the tribe(s) in accordance with the terms and requirements of the CRMP (MM CUL-4).

Both the Project Archaeologist and the tribal monitor(s) will be on-site during all earthwork and ground-disturbing activities, including stockpiling of materials, engineering fill, rock crushing, and trenching, in accordance with the terms and provisions of the CRMP (MM CUL-4).

Prior to issuance of the first grading permit for the Project, the Project Applicant will submit a fully executed copy of the contract(s) with the tribal monitor(s) to the City Planner as evidence of compliance with this mitigation measure.

MM CUL-7: **Pre-Construction Meeting.** The Project Archaeologist and tribal monitor(s) will attend a pre-grading meeting with the construction manager and general contractors for the purpose of conducting a Cultural Resources Worker Sensitivity Training (the "Training") for those in attendance. The Training will include a thorough review of the cultural sensitivity of the Project and the surrounding area, an outline of what resources may potentially be identified during earthmoving and ground-disturbing activities, the requirements of the CRMP, the protocols that apply in the event of an inadvertent discovery of Native American cultural resources including who to contact and appropriate avoidance measures, the requirements of the temporary fencing around those Native

American cultural resources that are being avoided, and the requirements for the controlled grading in accordance with MM-CUL-10. All new construction personnel that begin work on the Project following the initial Training shall be informed of the Training requirement and participate in the Training. The Project Archaeologist and tribal monitor(s) will make themselves available to provide additional sessions of the Training on an as-needed basis.

MM CUL-8: **Final Phase 4 Report.** Upon completion of the archaeological/tribal monitoring tasks, a final report will be prepared by the Project Archaeologist substantiating that earthwork and ground-disturbing activities are completed and documenting the discovery, recovery and treatment of all Native American resources encountered during the earthwork and ground-disturbance phases of the Project.

The Phase 4 report will be completed in accordance with the applicable SHPO guidelines and will include, at a minimum, a discussion of the monitoring methods and techniques used, the results of the monitoring program and CRMP including any artifacts recovered, an inventory of any resources recovered and the treatment methods for those resources, any updated California Office of Historic Preservation, Department of Parks and Recreation 523 series data recordation forms and new data recordation information for any newly identified sites, and any additional information or recommendations. A final copy of the Phase 4 report will be submitted to the City, Project Applicant, Eastern Information Center at the University of California, Riverside, and any culturally affiliated tribe(s) that request a copy.

MM CUL-9: **Curation of Resources.** The Final Phase 4 report will include evidence that all Native American resources collected during the earthwork and ground-disturbance activities, and that are not remaining on the Project site in accordance with MM-CUL-3, MM-CUL-4, and MM-CUL-10, have been/will be curated in the Western Science Center curation facility in accordance with then-current professional repository standards. The collections and associated records will be transferred, including title, to the Western Science Center curation facility which meets the standards set forth in 36 CFR Part 79 for Federal Repositories.

The Final Phase 4 report will include evidence that all historic materials and resources, that are not also Native American resources, have been curated at the Western Science Center which meets the standards set forth in 36 CFR Part 79 for Federal Repositories.

MM CUL-10: **Controlled Earthwork and Grading.** Portions of the cultural resource sites CA-RIV-645, -3335, -3339 and -12244 will be impacted during the earthwork and ground-disturbing activities. At least thirty (30) days prior to submittal of final grading plans to the City, the Project Applicant, Project Archaeologist, City Planner, City Engineer and tribe(s) will meet and develop an exhibit that outlines the areas subject to controlled earthwork and grading, including grubbing, and those areas will be identified on a set of confidential grading plans for the Project site. The tribe(s), in coordination with the Project Archaeologist and grading contractor, will be present for the delineation, by staking, of the controlled grading areas.

For purposes of this mitigation measure, the term "controlled grading" means the slow and deliberate excavation and removal of soils employing the smallest reasonable cuts in certain areas, utilizing equipment including, without limitation, light scrapers (for example Caterpillar 623 or 627), dozers (for example D6-D8), front end loaders, excavators, skip loaders, dump trucks and motor graders. The controlled earthwork and grading activities will be monitored by the Project Archaeologist and tribal monitor(s) to ensure the methodic removal of the ground surface and to allow for the identification and recovery of Native American resources. The results of the controlled grading work will be summarized as part of the Final Phase 4 report.

In the event there is a disagreement between the Project Applicant and the tribal monitor(s) on the locations, process or procedure for controlled grading, as provided for in this mitigation measure, the City Engineer, in consultation with the City Planner, will have final decision-making authority. The set of confidential grading plans shall be maintained by the City Engineer and City Planner under confidential cover.

MM CUL-11: **On-Site Preservation/Reburial Location for Sensitive Native American Resources.** In accordance with MM CUL-4, all Native American sensitive resources including, without limitation, ceremonial items, sacred items and grave goods as those same are identified by the tribal monitor(s) during the Phase 3 efforts and Project earthwork and ground-disturbing activities, will be reburied on the Project property. At least thirty (30) days prior to submittal of final grading plans to the City, the Project Applicant, Project Archaeologist, City Planner and tribal monitor(s) will meet to identify the location(s) for on-site reburial (the "Preservation Site(s)"). During the meeting, the group will develop a confidential exhibit depicting and describing the Preservation Site(s), which exhibit will be kept by the City Planner under confidential cover.

The Preservation Site(s) will be located within the development envelope of the Project, outside of any known and identified cultural resource sites. Prior to the issuance of the first building permit for the applicable tract or phase that includes a Preservation Site location, the Project Applicant will record a restrictive covenant over the Preservation Site with the intent to ensure the site remains in an undisturbed state in perpetuity.

Any Preservation Site that includes relocated/reburied Native American cultural resources will be capped by first placing a layer of geomat fabric over the reburied resources, and then filling the site with clean, sterile soil and contouring the site to appear in a natural state. Once a Preservation Site has been filled and contoured, no earthwork or ground-disturbing activities or subsurface facilities will be permitted in the Preservation Site, with the exception of those activities and requirements that may be required pursuant to the Fire Protection Technical Report (See Section 4.16, *Wildfire Hazards* and MM WH-5 on page 4.16-34).

MM CUL-12: **Inadvertent Discovery - Historical Resources**. In the event that buried historic resources, other than Native American resources, are discovered during construction-related activities, all earthwork and ground-disturbing activities will halt within 100 feet ("buffer area") of the discovery and the Project Archaeologist will determine whether the resource requires further study. The Project Archaeologist will make recommendations to the City

Planner on the measures that will be implemented to protect, preserve, document and mitigate the newly discovered resources. In accordance with CEQA Guidelines Section 15064.5 mitigation measures may include, but are not limited to, avoidance excavation of the resources, collection, evaluation of the resources, additional testing and curation of the resources.

Potentially significant historic resources consist of, but are not limited to, metal elements, tools, equipment, building materials, structural foundations, dumpsites, privies and refuse deposits, bottles and cans. Any previously undiscovered resources found during construction within the Project site will be recorded on appropriate California Office of Historic Preservation, Department of Parks and Recreation 523 series data recordation forms and evaluated for CEQA significance in accordance with the applicable code sections.

MM CUL-13: **Temporary Construction Fencing.** During the meeting outlined in MM-CUL-10, in order to mitigate for potential impacts to avoidance areas within sites CA-RIV-645 and -12244, the Project development area during construction of the Project, the Project Applicant, Project Archaeologist, City Planner and tribal monitor(s) will develop an exhibit showing the location of temporary construction fencing in accordance with the guidance contained in CEQA Guidelines §15064.5. A copy of the exhibit showing the location of the fencing will be submitted to the City Planner and maintained under confidential cover.

MM CUL-14: **Dust Control Plan.** Prior to the issuance of a grading permit for the Project and in order to mitigate for potential impacts to Native American resources on the Project site within CA-RIV-645 and -12244, the Project Archaeologist, City Planner, dust control supervisor and tribal monitor(s) will develop a list of dust control measures that will be implemented in accordance with CEQA Guidelines §15064.5 (the "Dust Control Plan").

The Dust Control Plan will be implemented by the grading contractor and dust control supervisor in consultation with the City Planner, Project Archaeologist and tribal monitor(s). The Dust Control Plan will include, without limitation, the following information and requirements:

a. Use of protective materials to shield certain Native American cultural resources and a visual inspection and written documentation of the current condition of the resources will be completed. Photography of the resources is specifically prohibited.

b. Upon conclusion of construction, the protective materials will be removed, and the resources will again be visually inspected and written documentation of the current condition of the resources will be completed. Again, photography of the resources is specifically prohibited.

c. After construction is complete, the Project Archaeologist will prepare a final letter report that details how the Dust Control Plan was implemented and the condition of the Native American cultural resources immediately prior to and immediately following construction activities.

d. The Dust Control Plan will be incorporated into the CRMP.

The provisions of this mitigation measure are in addition to the requirements of mitigation measures MM AQ-1 and MM AQ-2 (see Section 4.2, page 4.2-35).

MM CUL-15: **Environmentally Sensitive Open Space Area – Avoidance Mitigation for CA-RIV-12244**. A portion of site CA-RIV-12244 will be avoided by the Project. For purposes of preserving this site in perpetuity, the Project Applicant will record a restrictive covenant, or similar legal restriction, over the preservation portion of site CA-RIV-12244 prior to the issuance of any grading permits for the Project.

The Project Applicant, in consultation with the Project Archaeologist, City Planner, dust control supervisor, grading contractor, and tribal monitor(s), will create an exhibit for the placement of a temporary construction fence, in accordance with MM-CUL-14, around the preservation portion of site CA-RIV-12244.

Permanent fencing around the preservation portion of site CA-RIV-12244 will be installed in accordance with and in conformance to the Project's fencing plan as depicted on Figure 7-12 of the MHSPA. Future maintenance and upkeep of the fencing and preservation site will be the responsibility of the Murrieta Hills Homeowners Association.

MM CUL-16: **Capping of Site CA-RIV-3335.** Upon completion of the Phase 3 work, in accordance with MM-CUL-1, and upon completion of all earthwork and ground-disturbing activities within site CA-RIV-3335, the site will be capped prior to the construction of any permanent improvements, including road or utility improvements. For purposes of this mitigation measure, capping will mean the placement of geomat fabric over the excavated portion of the site and then filling the site with clean, sterile soil.

MM CUL-17: **Capping of Site CA-RIV-3339.** Upon completion of the Phase 3 work, in accordance with MM-CUL-1, and upon completion of all earthwork and ground-disturbing activities within site CA-RIV-3339, the site will be capped prior to the construction of any permanent improvements, including road or utility improvements. For purposes of this mitigation measure, capping will mean the placement of geomat fabric over the excavated portion of the site and then filling the site with clean, sterile soil.

MM CUL-18: **Preservation and Maintenance Plan.** For those areas outlined in MM-CUL-11 and MM-CUL-15, prior to the issuance of the first building permit for the Project, the Project Applicant, City Planner and tribal monitor(s) shall meet to develop a preservation and maintenance plan (the "Maintenance Plan") for the long-term care and maintenance of the preservation and open space areas. The Maintenance Plan will be included in the Murrieta Hills Homeowners Association documents and will be maintained as permanent open space in accordance with the requirements of the associate documents and the Murrieta Hills Fire Protection Plan.

The Maintenance Plan will include, at a minimum, the specific areas included and excluded from long-term maintenance requirements, a list of prohibited activities, methods of preservation for the sites (fencing, vegetative deterrence, etc.), the entity or entities responsible for the long-term maintenance, maintenance scheduling and notification requirements, appropriate avoidance protocols, provisions for monitoring maintenance activities by the tribe(s) and any necessary emergency protocols. The

Project Applicant will submit an executed copy of the Maintenance Plan to the City Planner as evidence of compliance with this mitigation measure.

MITIGATION SUMMARY

Table 4.4-3, *Cultural Resource Impacts and Mitigation* below lists the 12 resources discussed in this section that were evaluated for eligibility recommendation and their significance before mitigation; recommended mitigation; and significance after mitigation.

Table 4.4-3: Cultural Resources Impacts and Mitigation

Resource Number	Site Eligibility Recommendations with Significance Criteria			Impact Before Mitigation	Site-Specific Recommended Mitigation	Impact After Mitigation
	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?			
P-33-11236	No	No	No	Less than Significant	N/A	Less than Significant
CA-RIV-645	Yes, Criteria 1, 3 and 4	Yes, Criterion 1	Yes, Criteria a, c, and d	Significant	MM CUL-1, MM CUL-10, MM CUL-13, MM CUL-14	Less than Significant with Mitigation Incorporated
CA-RIV-3335	Yes, Criteria 1 and 4	No	Yes, Criteria a and d	Significant	MM CUL-1, MM CUL-10, MM CUL-16	Less than Significant with Mitigation Incorporated
CA-RIV-3336	CA RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site	N/A. Site boundary updated after Phase 2 testing and investigations; site not in Project footprint.	N/A	N/A
CA-RIV-3339	Yes, Criterion 4	No	Yes, Criterion d	Significant	MM CUL-1, MM CUL-10, MM CUL-17	Less than Significant with Mitigation Incorporated
CA-RIV-12193 (ATK-MH-08)	No	No	No	Less than Significant	N/A	Less than Significant
CA-RIV-12199 (ATK-MH-02)	No	No	No	Less than Significant	N/A	Less than Significant
CA-RIV-12242 (LSA-CMU-532-H-1 & ATK-MH-15)	No	No	No	Less than Significant	N/A	Less than Significant
CA-RIV-12243 (LSA-CMU-532-S-4)	No	No	No	Less than Significant	N/A	Less than Significant
CA-RIV-12244 (LSA-CMU-532-S-3)	Yes, Criteria 1 and 4	No	Yes, Criteria a and d	Significant	MM CUL-1, MM CUL-10, MM CUL-13, MM CUL-14, MM CUL-15	Less than Significant with Mitigation Incorporated

Table 4.4-3: Cultural Resources Impacts and Mitigation

Resource Number	Site Eligibility Recommendations with Significance Criteria			Impact Before Mitigation	Site-Specific Recommended Mitigation	Impact After Mitigation
	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?			
CA-RIV-12245 (LSA-CMU-532-S-2)	No	No	No	N/A	N/A	N/A
CA-RIV-12326 (ATK-MH-16)	No	No	No	Less than Significant	N/A	Less than Significant
N/A = not applicable						

4.4.8 CUMULATIVE IMPACTS

The Tribe's Correspondence asks the City, in completing the Project DEIR, to consider that development of the Project may result in cumulative impacts to historic resources and historic properties.

Cumulative impacts are defined in CEQA Guidelines §15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."[47] While the effects of any single project may be individually limited, the impacts, when taken with other projects are cumulatively considerable.[48]

The very nature of cultural and tribal resource evaluations make cumulative impacts evaluations difficult. There are no unified or comprehensive records of the scope and nature of resources, and the fact that many sites remain unknown/undocumented creates further complications. Added to those issues is the fact that prior projects have concluded that impacts to cultural and tribal resource impacts are mitigated to a level of less than significant so the foundation for a cumulatively significant finding does not exist in the public record. Making a cumulative finding is equally difficult for future projects in the area because of the lack of information on existing cultural sites, the unknowns of undiscovered cultural sites, and the fact that future project design can be adjusted to avoid impacts to cultural sites.

Unfortunately, without a regional or area study or ethnography which the City can rely on to set the baseline for a cumulative impacts analysis it is not feasible or possible for the City to determine whether or to what extent development, including the Project, will result in impacts to cultural resources and if those impacts can be mitigated to a level of less than significant. Without substantial evidence to support the conclusion that the Project, when constructed, will contribute to a cumulative impact on area-wide resources, making a legally valid finding that one development, like the Project, will result in cumulative impacts to historic resources and historic properties is not possible.

[47] See also CEQA Guidelines §15130.

[48] See California Public Resources Code §21083(b)(2). As used in this section, "cumulatively considerable" means the incremental effects of any individual project are considerable when viewed in connection with the effects of past projects, the effects of other projects, and the effects of probable future projects.

4.4.9 SIGNIFICANT UNAVOIDABLE IMPACTS

The Tribe's Correspondence asserts that, in the event the Pechanga Tribe's proposed mitigation measures are not feasible, the City must make a significant impact finding with respect to historic resources. However, when one reviews the public record for this Project, including all relevant studies, mitigation measures and data, there is a lack of substantial evidence in the record to support the Tribe's Correspondence conclusion of a significant and unavoidable impact.

California Public Resources Code section 21081 requires lead agencies to either require mitigation for potentially significant impacts or provide a statement of overriding considerations justifying approval of a project that may result in significant impacts on the environment[49]. As documented in the Project DEIR, the City has identified, for each significant site, feasible mitigation measures to reduce project impacts to a less than significant level. Examples of those mitigation measures include requiring archaeological and tribal monitoring, controlled grading, and providing reburial and repatriation areas on the Project site.

It is also important to note that the environmental impact report for the County of Riverside General Plan EIR for cultural resources (County's General Plan EIR) concludes:

> *Development and implementation activities resulting from the proposed project, General Plan Amendment No. 960, would be subject to a number of existing state and federal laws, General Plan policies, Riverside County Ordinance; Planning Department procedures, standard and tailored conditions of approval and existing Mitigation Measures 4.7.1A and 4.7.1B from EIR 441, as well as new Mitigation Measure 4.9.1-N1, as identified [in the document]. Collectively, these regulatory compliance and mitigation measures would reduce to below the level of significance any potential adverse changes in the significance of either archaeological or historical resources, as they are defined in CCR Section 15064.5 . . . In total, these measures ensure that any significant adverse impacts to cultural resources resulting from future development accommodated by GPA No. 960 would be mitigated to below the level of significance. See County General Plan EIR, page 4.9-49.*[50]

CEQA requires a statement of overriding considerations only when a project's significant impacts are not substantially mitigated. When a lead agency makes a determination that an impact is less than significant, a statement of overriding considerations is not required. The City finds no substantial evidence at this

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[49] See also CEQA Guidelines Section 15043 and Guidelines Section 15093.

[50] A similar conclusion was made for the environmental impact report (EIR) for the City's General Plan where it specifically concludes that buildout of the City will not result in significant and unavoidable impacts to cultural and historic resources. Specifically, the General Plan EIR makes the following finding:

> Potential cultural resource impacts associated with the development of individual projects under the proposed General Plan 2035 would be specific to each site. All new developments would be required to comply with existing Federal, State, and local regulations concerning the protection of archaeological, paleontological and historic resources on a project-by-project basis. Additionally, implementation of the goals and policies of the proposed General Plan 2035, and recommended mitigation measures, would reduce potential impacts to undocumented archaeological resources, cultural resources, and historical structure/resources to less than significant levels. Thus, implementation of the proposed General Plan 2035 would not result in cumulatively considerable cultural resource impacts.

See City's General Plan EIR, Section 5.9.5, page 5.9-28.[50]

An additional finding, specific to significant unavoidable impacts, is also made in the City's General Plan environmental impact report:

> Impacts related to cultural resources associated with implementation of the proposed General Plan 2035 would be less than significant by adherence to and/or compliance with the existing regulatory framework, proposed General Plan 2035 goals and policies, and mitigation measures. No significant unavoidable cultural resource impacts would occur as a result of buildout of the proposed General Plan 2035.

See City's General Plan EIR, Section 5.9.6, page 5.9-28.[50]

point in time in the Tribe's Correspondence or the DEIR for the Project to substantiate a finding of a significant and unavoidable impact to historic resources, including tribal cultural resources. Therefore, a statement of overriding considerations is not necessary nor required for the Project.

4.4.10 REFERENCES

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4.5 ENERGY

4.5.1 INTRODUCTION

This section examines the existing setting of the Murrieta Hills Specific Plan Amendment (MHSPA or Project) as it relates to energy conservation, identifies associated regulatory conditions and requirements, and presents the criteria used to evaluate potential impacts related to use of fuel and energy upon implementation of the Project.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Analysis of area cumulative impacts is also included in the discussion portions of this section. As will be demonstrated in Section 4.5.5, *Impacts and Mitigation Measures* below, impacts will be less than significant.

Information presented in this analysis is derived largely from the *Air Quality/Greenhouse Gas Assessment for the Murrieta Hills Specific Plan Amendment* prepared by Michael Baker International (2018, Appendix 9.2 of EIR). Other information in this section, such as regulatory framework, is derived from federal law and state standards, such as the California Building Energy Efficiency Standards.

Note that the air quality/greenhouse gas assessment technical report for this Project (Appendix 9.2.1) analyzed two alternatives. Alternative 1 (Originally Proposed Project) would include 578 single-family units and 172 multi-family units, with 346,302 square feet of commercial retail. Alternative 2 (Environmentally Preferred Alternative) would have fewer single-family units (557 total), more multi-family units (193 total); and less commercial square footage (222,156 square feet) than Alternative 1. Analyses and data presented in this section are for Alternative 2.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.5.2 ENVIRONMENTAL SETTING

The Murrieta Hills Specific Plan Amendment (MHSPA) area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-04 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

Pursuant to Section 15126.2(b), Section 15126.4(a)(1)(C), and Appendix F of the State CEQA Guidelines, the environmental setting may include "existing energy supplies and energy use patterns in the region and locality." Energy use is analyzed in this document by evaluating the potential direct and indirect environmental impacts associated with the Project. Such impacts include, without limitation, the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emissions of pollutants during both Project construction and operations. Refer to Section 4.2, *Air Quality* and Section 4.7, *Greenhouse Gas Emissions* for additional regulatory background and details on the environmental setting regarding the Project's energy use.

EXISTING ELECTRICITY AND NATURAL GAS SUPPLIES

Electricity

Electricity as a utility is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in

megawatts (MW), which is one million watts, while energy use is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services are provided to the Project by Southern California Edison (SCE). SCE provides electricity to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area[1]. SCE produces and purchases their energy from a mix of conventional and renewable generating sources. Table 4.5-1**,** *Electric Power Mix Delivered to SCE Retail Customers in 2017* shows the SCE electric power mix in 2017 compared to the statewide 2017 power mix. In 2017, electricity use attributable to the County of Riverside was approximately 15,937 GWh from residential and non-residential sectors[2].

Table 4.5-1: Energy Resources Used to Generate Electricity for SCE in 2017

Energy Resources	2017 SCE Power Mix	2017 CA Power Mix
Eligible Renewable	32%	29%
Biomass and Biowaste	0%	2%
Geothermal	8%	4%
Eligible Hydroelectric	1%	3%
Solar	13%	10%
Wind	10%	10%
Coal	0%	4%
Large Hydroelectric	8%	15%
Natural Gas	20%	34%
Nuclear	6%	9%
Other	0%	<1%
Unspecified Sources of Power[1]	34%	9%
Total	**100%**	**100%**

[1] Electricity from transactions that are not traceable to specific generation sources.

Source: CEC. (2018). *2017 Power Content Label, Southern California Edison*. Retrieved from CEC Website: https://ww2.energy.ca.gov/pcl/labels/2017_labels/SCE_2017_PCL.pdf. Accessed July 23, 2019.

Natural Gas

The Southern California Gas Company (SoCalGas), the service provider for the Project, services approximately 21 million people in a 20,000-square mile service territory. SoCalGas has four storage fields; Aliso Canyon, Honor Rancho, La Goleta, and Playa del Rey, as well as a combined storage capacity of approximately 134 billion cubic feet. According to the CEC, natural gas demand in the SoCalGas service area was 7,431 million therms (or 743,100 million cubic feet) in 2010. The CEC prepared three scenarios for forecasting future growth in natural gas demand between 2012 and 2022: a high-energy demand case, a low-energy demand case, and a mid-energy demand case. The low-demand scenario, which incorporates relatively high economic/demographic growth, relatively low electricity and natural gas rates, and relatively low efficiency program and self-generation impacts, estimates that natural gas

[1] SCE. (2019). *By the Numbers: Who We Serve*. Retrieved from SEC Website: https://www.sce.com/about-us/who-we-are. Accessed July 23, 2019.
[2] California Energy Commission (CEC). (2019). *Electricity Consumption by County*. Retrieved from CEC Website: http://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed July 23, 2019.

demand in the SoCalGas service area would be 7,951 million therms in 2022 (the latest year in the demand forecast).

Natural gas provides almost a third of California's total energy requirements and will continue to be a major fuel in California's energy supply. Only 13.5 percent of the natural gas California used came from in-state production in 2006; the rest was delivered by pipelines from several production areas in the western United States and western Canada. Once the gas arrives in California, it is distributed by the State's three major gas utilities that provide a collective of 98 percent of the State's natural gas.

In 2017, natural gas use attributable to Riverside County was approximately 393 million therms from residential and non-residential sectors[3], equivalent to approximately 39,343 million cubic feet.

Energy Use

Energy use is typically quantified using the British Thermal Unit (BTU). Total energy use in California was 7,829 trillion BTU in 2016 (the most recent year for which this specific data is available), which equates to an average of approximately 198 million BTU per capita. Of California's total energy use, the breakdown by sector is approximately 40 percent transportation, 23 percent industrial, 19 percent commercial, and 18 percent residential. Electricity and natural gas in California are generally used by stationary sources such as residences, commercial sites, and industrial facilities, whereas petroleum use is generally accounted for by transportation-related energy use[4]. In 2018, taxable gasoline sales (including aviation gasoline) in California accounted for 15,589,042,965 gallons of gasoline[5].

4.5.3 REGULATORY FRAMEWORK

FEDERAL

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 (Public Law 109-58) into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure;
- Remove outdated obstacles to investment in electricity transmission lines;
- Make electric reliability standards mandatory instead of optional; and
- Give Federal officials the authority to site new power lines in Department of Energy-designated national corridors in certain limited circumstances.

The Renewable Fuel Standard (RFS) program was created under the Energy Policy Act of 2005, and established the first renewable fuel volume mandate in the United States. The program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. As

[3] CEC. (2019). *Gas Consumption by County*. Retrieved from CEC Website: http://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed February 7, 2019.
[4] U.S. Energy Information Administration (EIA). (2019). *California State Profile and Energy Estimates*. Retrieved from EIA Website: www.eia.gov/state/?sid=CA. Accessed February 7, 2019.
[5] California Department of Tax and Fee Administration (CDTFA). (2019). *Net Taxable Gasoline Gallons*. Retrieved from CDTFA Website: www.cdtfa.ca.gov/taxes-and-fees/MVF-10-Year-Report.pdf. Accessed February 7, 2019.

required under Energy Policy Act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA; Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas (GHG) capture and storage. Under the EISA, the RFS program (RFS2) was expanded in several key ways:

- Expanded the RFS program to include diesel, in addition to gasoline;
- Increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- Established new categories of renewable fuel and set separate volume requirements for each; and
- Required U.S. Environmental Protection Agency (U.S. EPA) to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions of GHG emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

The EISA also includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

STATE

California Building Energy Efficiency Standards: Title 24, Part 6 (California Energy Code)

The California Energy Code (Title 24, Part 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations [CCR]) by the California Building Standards Commission in 1978 to establish statewide building energy efficiency standards to reduce California's energy use. These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets the standards[6]. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air Conditioning Systems
- Heat Pumps

[6] CEC. (May 2012). *2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*. Retrieved from CEC Website: www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf. Accessed February 7, 2019. and California Energy Commission. (June 2015). *California's Energy Efficiency Standards for Residential and Nonresidential Buildings.* Retrieved from https://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf. Accessed February 7, 2019.

- Water Chillers
- Gas- and Oil-Fired Boilers
- Cooling Equipment
- Water Heaters and Equipment
- Pool and Spa Heaters and Equipment
- Gas-Fired Equipment Including Furnaces and Stoves/Ovens
- Windows and Exterior Doors
- Joints and Other Building Structure Openings (Envelope)
- Insulation and Cool Roofs
- Lighting Control Devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, indoor and outdoor lighting systems, as well as equipment in non-residential, high-rise residential, and hotel or motel buildings. Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation, and water piping. In addition to the mandatory requirements, the standards call for further energy efficiency that can be provided through a choice between performance and prescriptive compliance approaches. Separate sections apply to low-rise residential and to non-residential, high-rise residential, and hotel or motel buildings. In buildings designed for mixed use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy.

The performance approach set forth under these standards provides for the calculation of an energy budget for each building and allows flexibility in building systems and features to meet the budget. The energy budget addresses space-conditioning (cooling and heating), lighting, and water heating. Compliance with the budget is determined using a CEC-approved computer software energy model. The alternative prescriptive standards require demonstrating compliance with specific minimum efficiency for components of the building such as building envelope insulation R-values, fenestration (areas, U-factor and solar heat gain coefficients of windows and doors) and heating and cooling, water heating and lighting system design requirements. These requirements vary depending on the building's location in the State's 16 climate zones.

California's Building Energy Efficiency Standards (CBEES) are updated on an approximately three-year cycle as technology and methods evolve. As a result of new law under Assembly Bill (AB) 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the standards went into effect in June 2001. The CEC then initiated an immediate follow-on proceeding to consider and adopt updated standards that could not be completed during the emergency proceeding. The 2013 Standards went into effect July 1, 2014. The 2016 CBEES went into effect on January 1, 2017 and improve upon the 2013 CBEES for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 CBEES were adopted on May 9, 2018 and take effect on January 1, 2020 (for building permit applications submitted on or after that date). The 2019 standards require solar photovoltaic

systems for new homes; establish requirements for newly constructed healthcare facilities; encourage demand-responsive technologies and improving the thermal envelope of residential structures; update indoor and outdoor lighting making maximum use of LED technology in nonresidential buildings; and enable the use of highly efficient air filters to trap hazardous particulates and improve kitchen ventilation systems in residential and nonresidential buildings.[7] The Project will be constructed in compliance with the CBEES that are current at the time of construction. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards. The CBEES updates focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations.

California Green Building Standards

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code was published in July 2019 and will be effective January 1, 2020.[8]

As previously discussed, effective January 1, 2020, new homes in California will be required to have solar photovoltaic systems installed. In compliance with this mandate, Project single-family residences will be constructed with solar photovoltaic systems automatically installed. In addition, Project multi-family residences up to three stories in height will also be constructed with solar photovoltaic systems automatically installed.

Appendix F to CEQA Guidelines

Public Resources Code (PRC) §21100(b)(3) and CEQA Guidelines §15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary use of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the California State Legislature adopted AB 1575, which created the CEC. The CEC's statutory mission is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct state responses to energy emergencies, and promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended PRC §21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary use of energy caused by a project. In addition, CEQA Guidelines §15126.4 was adopted in 1998 which requires that an EIR describe feasible mitigation measures which would minimize the inefficient and unnecessary use of

[7] CEC, Efficiency Division. (2018). *2019 Building Energy Efficiency Standards Frequently Asked Questions*. Retrieved from CEC Website: https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf. Accessed April 1, 2019.

[8] International Code Council (ICC). (2019). *2019 California Green Building Standards Code, Title 24, Part 11.* Retrieved from ICC Website: https://codes.iccsafe.org/content/chapter/15762/. Accessed July 24, 2019.

energy. Thereafter, the State Resources Agency created CEQA Guidelines Appendix F – Energy Conservation.

Pursuant to Appendix F, an EIR must include a "discussion of the potential energy impacts of proposed projects…[9]." However, because lead agencies have not consistently included such analysis in their EIRs, California's Natural Resources Agency amended Appendix F to the CEQA Guidelines in 2009 "to ensure that lead agencies comply with the substantive directive in §21100(b)(3)." CEQA Guidelines Appendix F lists environmental impacts and mitigation measures that an EIR may include. What is required is a "discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy." Potential impacts that may be discussed include:

- The Project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the Project including construction, operation, maintenance, or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the Project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the Project on peak and base period demands for electricity and other forms of energy.
- The degree to which the Project complies with existing energy standards.
- The effects of the Project on energy resources.
- The Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

State CEQA Guidelines Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary use of energy. The discussion below analyzes the Project's effect on energy resources.

Senate Bill 100 or The 100 Percent Clean Energy Act of 2018

Senate Bill (SB) 100, approved September 10, 2018, declares that the Public Utilities Commission (PUC), State Energy Resources Conservation and Development Commission, and State Air Resources Board (ARB) should plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. The last 40 percent of the 100 percent total can come from "carbon-free" sources, including large dams, nuclear power, and even natural gas-fired power plants, if they can capture and store the carbon in the ground, which so far is an unproven technology. California has only one nuclear power plant, Diablo Canyon in San Luis Obispo County, and its owner, PG&E, has announced it will close by 2025.[10]

SB 100 revises existing law to state that the goal of the California Renewables Portfolio Standard Program is to achieve 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent

[9] Association of Environmental Professionals. (2020). *2020 CEQA California Environmental Quality Act Statute & Guidelines.* Palm Desert, CA.
[10] Rogers, P. and Murphy, K. (2018). *California mandates 100 percent clean energy by 2045*. Retrieved from: https://www.mercurynews.com/2018/09/10/california-mandates-100-percent-clean-energy-by-2045/. Accessed September 11, 2019.

target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.[11]

Executive Order B-55-18 to Achieve Carbon Neutrality

Executive Order (EO) B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The EO requires the State ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks the progress toward this goal. The State ARB will also be required to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.[12] Carbon neutrality, or having a net zero carbon footprint, refers to achieving net zero carbon dioxide emissions by balancing carbon emissions with carbon removal or simply eliminating carbon emissions altogether.[13]

LOCAL

Murrieta General Plan 2035

As part of the Project approval process, the Project site will be annexed into the City of Murrieta and will be required to comply with the regulations set forth in the Murrieta GP.

CONSERVATION ELEMENT

This Element provides direction regarding the conservation, development, and utilization of natural and cultural resources.[14] It serves as a guide for the City of Murrieta, its residents, and its businesses to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve or conserve these resources. The Conservation Element considers the following resources in the natural environment: water; hills and ridges; and mineral, paleontological, and biological resources. It also considers resources within the built environment: urban ecology, farmland, cultural resources, energy, and solid waste.

Goal CSV-12: ***Energy conservation and the generation of energy from renewable sources is prioritized as part of an overall strategy to reduce greenhouse gas emissions.***

Policy CSV-12.1: Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Code.

[11] California Legislative Information (CLI). (2018). *Senate Bill No. 100*. Retrieved from CLI Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Accessed September 11, 2019.
[12] State of California. (2018). *Executive Order B-55-18 to Achieve Carbon Neutrality*. Retrieved from State of California Website: https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf. Accessed September 11, 2019.
[13] Wikipedia. (2019). *Carbon neutrality*. Retrieved from Wikipedia Website: https://en.wikipedia.org/wiki/Carbon_neutrality. Accessed September 11, 2019.
[14] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 8: Conservation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed September 10, 2019.

Policy CSV-12.2: Work with energy utilities to encourage and incentivize the retrofitting of building systems with energy-conserving fixtures and appliances.

Policy CSV-12.3: Support the on-site installation and use of renewable energy generation systems for residential, commercial, institutional, and industrial uses.

Policy CSV-12.6: Encourage new development projects and significant rehabilitation or expansion projects to incorporate innovative energy conservation or generation amenities such as electric vehicle charging stations, solar canopies, and carports.

GOAL CSV-14: A community that encourages and incentivizes the sustainable development of buildings and neighborhoods, particularly with respect to durability, energy and water use, and transportation impacts.

Policy CSV-14.1: Ensure all applicable construction projects comply with the California State Green Building Standards Code.

Policy CSV-14.2: Encourage the integration of other principles of green building into development standards and guidelines, looking for opportunities to realize other benefits such as improved health and increased bicycle transportation.

4.5.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation. (see Impact 4.5-1); or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (see Impact 4.5-2).

Based on these standards and thresholds, the effects of the Project have been categorized as “less than significant impact.”

METHODOLOGY AND ASSUMPTIONS

In determining whether implementation of the Project will result in the inefficient, wasteful or unnecessary use of fuel or energy, this analysis considers the recommendations of Appendix F to CEQA Guidelines as described above.

This section analyzes energy use on three sources of energy that are relevant to the Project, including electricity, natural gas, and transportation fuel for vehicle trips associated with new development, as well as the fuel necessary for Project construction. The analysis of Project electricity and natural gas use is based on the California Emissions Estimator Model (CalEEMod), which quantifies energy use for occupancy. The results of CalEEMod are included in Appendix 9.2.1, *Air Quality and Greenhouse Gas Assessment* of this document. Modeling related to Project energy use was based primarily on the default settings in CalEEMod for Riverside County. The amount of operational fuel use was estimated using

CalEEMod outputs for the Project and the California Air Resources Board (CARB) Emissions Factor (EMFAC) 2017 computer program for typical daily fuel use in Riverside County. Construction fuel was calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry.

Energy impacts are analyzed below according to topic.

Approach to Analysis

This analysis of impacts on energy resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by Kimley-Horn, review of project maps and drawings, analysis of aerial and ground-level photographs, and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on energy resources considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- The Project will install solar photovoltaic systems for all single- and multi-family residences (up to three stories) in compliance with the solar panel mandate effective January 1, 2020.
- LED streetlights where streetlights are needed.
- The Project has reduced energy resource usage by reducing the total development area in comparison to the currently approved Specific Plan, which reduces the area required for grading and other construction activities.
- The Project has reduced energy resource usage by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses).
- Commercial uses are proposed within proximity to the residential neighborhood, with pedestrian connections, thereby reducing vehicle miles traveled (VMT), and associated energy/fuel resources, to obtain goods and services.
- The Project would include amenities to serve future residents and reduce the need to travel off-site; thereby reducing energy resource/fuel consumption. This MHSPA describes a walkable community, with sidewalks that border all neighborhood streets, walking paths, and active recreational facilities, including dedicated neighborhood parks, an HOA community park, and a 4.6-acre public park.

4.5.5 IMPACTS AND MITIGATION MEASURES

Impact 4.5-1: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Level of Significance: Less than Significant Impact

CONSTRUCTION

The energy associated with Project construction includes electricity use associated with water utilized for dust control, diesel fuel from on-road hauling trips, vendor trips, and off-road construction diesel equipment, as well as gasoline fuel from on-road worker commute trips. The methodology for each category is discussed below. This analysis relies on the construction equipment list and operational characteristics, as stated in Section 4.2, Air *Quality* and Section 4.7, *Greenhouse Gas Emissions*, as well as Appendix 9.2.1, *Air Quality/Greenhouse Gas Assessment*. Quantifications of construction energy are provided for the Project below.

ELECTRICITY

Water for Construction Dust Control

Electricity use associated with water use for construction dust control is calculated based on total water use and the energy intensity for supply, distribution, and treatment of water.

The total number of gallons of water used is calculated based on acreage disturbed during grading and site preparation, as well as the daily watering rate per acre disturbed.

- The total acres disturbed are calculated using the methodology described in Chapter 4.2 of Appendix A of the *CalEEMod User's Guide,* available at: http://www.caleemod.com/.
- The water application rate of 3,020 gallons per acre per day is from the Air and Waste Management Association's *Air Pollution Engineering Manual* (1992).

The energy intensity value is based on the CalEEMod default energy intensity per gallon of water for Riverside County.

As summarized in Table 4.5-2, *Project Energy Use During Construction*, the total electricity associated with water use for construction dust control will be approximately 40 GWh over the duration of Project construction.

Table 4.5-2: Project Energy Use During Construction

Project Source	Total Construction Energy	Riverside County Annual Energy	Percentage Increase Countywide
Electricity Use		**GWh**	
Water Use[1]	40	15,906	0.25%
On-Road Electric Vehicle Trips[2]	0.0003		1.61×10^{-6} %
Electricity Total	40		0.25%
Diesel Use		**Gallons**	
On-Road Construction Trips[3]	313,870	217,461,716	0.14 %
Off-Road Construction Equipment[4]	1,192,368		0.55 %
Construction Diesel Total	1,506,238		0.69 %
Gasoline		**Gallons**	
On-Road Construction Trips[2]	395,817	716,606,501	0.06 %

Notes:

[1] Construction water use based on acres disturbed per day per construction sequencing and estimated water use per acre.

[2] On-Road electricity use determined by using VMT from construction worker trips in CalEEMod and determining the percentage of electric VMT from EMFAC data in Riverside County. Conversion of electric VMT to electric use based on the average kWh per mile of available electric vehicles on the market.

[3] On-Road mobile source fuel use based on VMT from CalEEMod and fleet-average fuel use in MPG from EMFAC in Riverside County.

[4] Construction fuel use was calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry.

Source: Refer to energy calculations in Appendix 9.2.1.

On-Road Electric Vehicle Trips

The EMFAC model includes the fraction of electric vehicles projected to be in the on-road fleet during construction. Using this data, electricity use related to electric vehicle traffic was estimated. The electric vehicles included in the EMFAC model are all in the light-duty auto and light-duty truck category. As such, electric vehicle trips will only exist among the construction worker fleet and not the vendor or haul truck fleets. Total electricity use from the on-road worker fleet throughout the duration of Project construction will be approximately 297 kWh (0.0003 GWh).

PETROLEUM FUEL

On-Road Diesel Construction Trips

The diesel fuel associated with on-road construction mobile trips is calculated based on vehicle miles traveled (VMT) from vehicle trips (i.e., worker, vendor, and hauling), the CalEEMod default diesel fleet percentage, and vehicle fuel efficiency in miles per gallon (MPG). VMT for the entire construction period is calculated based on the number of trips multiplied by the trip lengths for each phase shown in CalEEMod. Construction fuel was calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry.

As summarized in Table 4.5-2, the total diesel fuel associated with on-road construction trips will be approximately 313,870 gallons over the duration of buildout of the Project.

Off-Road Diesel Construction Equipment

Similarly, the construction diesel fuel associated with the off-road construction equipment is calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry. As summarized in Table 4.5-2, the total diesel fuel associated with off-road construction equipment is approximately 1,192,368 gallons for duration of buildout of the Project.

On-Road Gasoline Construction Trips

The gasoline fuel associated with on-road construction mobile trips is calculated based on VMT from vehicle trips (i.e., worker, vendor, and hauling), the CalEEMod default gasoline fleet percentage, and vehicle fuel efficiency in MPG using the same methodology as the construction on-road trip diesel fuel calculation discussed above. As summarized in Table 4.5-2, the total gasoline fuel associated with on-road construction trips will be approximately 395,817 gallons over the duration of buildout of the Project.

ANALYSIS

In total, construction of the Project will use approximately 40 GWh of electricity, 395,817 gallons of gasoline, and 1,506,238 gallons of diesel. As indicated previously, Californians used 288,614 GWh of electricity in 2017, of which Riverside County used 15,906 GWh. Project construction electricity use will represent approximately 0.01 percent of current electricity use in the state, and 0.25 percent of the current electricity use in Riverside County.

In 2018, Californians used approximately 15,589,042,965 gallons of gasoline and approximately 3,107,823,655 gallons of diesel fuel[15]. Riverside County annual gasoline fuel use in 2018 was 716,606,501 gallons and diesel use was 217,461,716 gallons. Total Project construction gasoline fuel will represent 0.06 percent of annual gasoline used in the County, and total Project construction diesel fuel will represent 0.69 percent of annual diesel used in the County. Based on the total Project's relatively low construction fuel use proportional to annual state and County use, the Project will not substantially affect existing energy fuel supplies or resources. New capacity or additional sources of construction fuel are not anticipated to be required.

Furthermore, there are no unusual characteristics that will necessitate the use of construction equipment that will be less energy-efficient than at comparable construction sites in the region or state. In addition, some energy conservation will occur during construction through compliance with state requirements that equipment not in use for more than five minutes be turned off. Project construction equipment will also be required to comply with the latest EPA and CARB engine emissions standards. These engines use highly efficient combustion engines to minimize unnecessary fuel use.

The Project will entail construction activities that will use energy, primarily in the form of diesel fuel (e.g., mobile construction equipment) and electricity (e.g., power tools). Contractors will be required to monitor air quality emissions of construction activities using applicable regulatory guidance such as from SCAQMD CEQA Guidelines. This requirement indirectly relates to construction energy conservation because when air pollutant emissions are reduced from the monitoring and the efficient use of equipment

[15] CDTFA. (2019). *Fuel Taxes and Statistics & Reports, Motor Vehicle Fuel and Diesel Fuel*. Retrieved from CDTFA Website: https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed July 24, 2019.

and materials, energy use is reduced. There are no aspects of the Project that will foreseeably result in the inefficient, wasteful, or unnecessary use of energy during construction activities.

Due to increasing transportation costs and fuel prices, Contractors and Owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary use of energy during construction. There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive and that there is a significant cost-savings potential in green building practices. Substantial reduction in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to produce than non-recycled materials. The Project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes, and manufactured or processed materials (e.g., lumber and gas) will not substantially increase demand for energy compared to overall local and regional demand for construction materials. It is reasonable to assume that production of building materials such as concrete, steel, etc., will employ all reasonable energy conservation practices in the interest in minimizing the costs of business.

As described above, the Project's fuel from the entire construction period will increase fuel use in the County by less than one percent. It should be noted that the CEQA Guideline Appendix G and Appendix F criteria requires the Project's effects on local and regional energy supplies and on the requirements for additional capacity to be addressed. A less than one percent increase in construction fuel demand is not anticipated to trigger the need for additional capacity. Additionally, use of construction fuel will be temporary and will cease once the Project is fully developed. As such, Project construction will have a nominal effect on the local and regional energy supplies.

As stated above, there are no unusual characteristics that will necessitate the use of construction equipment that will be less energy-efficient than at comparable construction sites in the region or state. Therefore, it is expected that construction fuel use associated with the Project will not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. Therefore, potential impacts are considered less than significant.

Off-Site Construction Impacts

Refer to Construction analysis above.

OPERATIONS

The energy consumption associated with Project operations will occur from building energy (electricity and natural gas) use, water use, and transportation-related fuel use. The methodology for each category is discussed below. Quantifications of operational energy use are provided for the Project.

Petroleum Fuel

The gasoline and diesel fuel associated with on-road vehicular trips is calculated based on total VMT calculated for the analyses within Section 4.2: *Air Quality*, and Section 4.7: *Greenhouse Gas Emissions*, and average fuel efficiency from the EMFAC model. The EMFAC fuel efficiency data incorporates the Pavley

Clean Car Standards and the Advanced Clean Cars Program[16]. As summarized in Table 4.5-3, *Project Annual Energy Use During Operations*, the total gasoline and diesel fuel associated with on-road trips will be approximately 1,720,354 gallons per year and 562,147 gallons per year, respectively.

Table 4.5-3: Project Annual Energy Use During Operations

Project Source	Annual Operational Energy	Riverside County Annual Energy	Percentage Increase Countywide
Electricity Use		**GWh**	
Area[1]	8.9	15,906	0.06 %
Water[1]	1.8		0.01 %
Mobile[2]	0.44		0.002%
Total Electricity	11.14		0.07 %
Natural Gas Use		**Therms**	
Area[1]	219,093	393,428,777	0.0557 %
Diesel Use		**Gallons**	
Mobile[3]	562,147	217,461,716	0.2585 %
Gasoline Use		**Gallons**	
Mobile[3]	1,720,354	716,606,501	0.2401 %

Notes:
[1] The electricity, natural gas, and water usage are based on Project-specific estimates and CalEEMod defaults.
[2] On-Road electricity use determined by using VMT from CalEEMod and determining the percentage of electric VMT from EMFAC data in Riverside County. Conversion of electric VMT to electric use based on the average kWh per mile of available electric vehicles on the market.
[3] Calculated based on the mobile source fuel use based on VMT and fleet-average fuel consumption MPG from EMFAC.

Source: Refer to energy calculations in Appendix 9.2.

Electricity

The electricity use during Project operations is based on CalEEMod defaults. As summarized in Table 4.5-3, the multi-family housing, single-family housing, community commercial uses with the related parking lot, as well as electric vehicles trips from the Project will use approximately nine GWh of electricity per year.[17] It should be noted that the electricity consumption Table 4.5-3 conservatively does not include reductions associated with compliance with the latest building code. Under the standards in the 2019 Title 24 building code homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

The electricity associated with operational water use is estimated based on the annual water use and the energy intensity factor is the CalEEMod default energy intensity per gallon of water for Riverside County. Project area water use is based on the Water Supply Assessment. The Project will use approximately 140 million gallons annually (approximately 128 million gallons for residential, commercial/retail uses and

[16] The CARB EMFAC 2017 Technical Documentation from March 2018 notes that emissions are estimated with all current controls active, except Low Carbon Fuel Standards (LCFS). The reason for excluding LCFS is that most of the emissions benefits due to the LCFS come from the production cycle (upstream emissions) of the fuel rather than the combustion cycle (tailpipe). As a result, LCFS is assumed to not have a significant impact on CO2 emissions from EMFAC's tailpipe emission estimates.
[17] The energy estimates are based on the CalEEMod model runs as contained in Appendix 9.2. The applicant is proposing a Mixed-Use zone for PA 8, which will reduce residential units and likely allow for a slight increase in commercial uses. This change will have negligible effect on the overall conclusions noted above. Also note that the Project's overall density is roughly 50 percent of what is allowable under the currently approved Specific Plan.

approximately 12 million gallons for open space) of water annually which will require approximately 1.8 GWh per year for conveyance and treatment.

Natural Gas

The methodology used to calculate the natural gas use associated with the Project is based on CalEEMod default rates. As summarized in Table 4.5-3, the building envelope will use 21,909,346 thousand British Thermal Units (kBTU), or approximately 219,093 therms of natural gas per year.

ANALYSIS

Operation of uses implemented pursuant to the Project will annually use approximately 11 GWh of electricity, 219,093 therms of natural gas, 1,720,354 gallons of gasoline, and 562,147 gallons of diesel.

Californians used 288,614 GWh of electricity in 2017, of which Riverside County used 15,906 GWh. The Project's operational electricity use will represent 0.0038 percent of electricity use in the state, and 0.07 percent of the energy use in Riverside County. The Project's electricity consumption estimated above conservatively does not include reductions associated with compliance with the 2019 Title 24 building code, which requires homes to use 53 percent less energy and nonresidential buildings to use 30 percent less energy than buildings under the 2016 standards. Regarding natural gas, Californians used 12,571 million therms of natural gas and 393 million therms of natural gas in Riverside County in 2017. Therefore, the Project's operational natural gas use will represent 0.0017 percent of the natural gas use in the state and 0.06 percent of the natural gas use in the County.

In 2018, Californians used approximately 15,589,042,965 gallons of gasoline and approximately 3,107,823,655 gallons of diesel fuel. Riverside County annual gasoline fuel use in 2018 was 716,606,501 gallons and diesel fuel use was 217,461,716 gallons. Expected Project operational use of gasoline and diesel will represent 0.01 percent of current gasoline use and 0.02 percent of current diesel use in the state. Project operational use of gasoline and diesel will represent 0.24 percent of gasoline use and 0.26 percent of diesel use in the County.

None of the Project energy uses exceed one percent of their corresponding County use. Project operations will not substantially affect existing energy or fuel supplies or resources. The Project will comply with applicable energy standards and new capacity will not be required. Impacts will be less than significant in this regard.

ENERGY EFFICIENCY MEASURES

As discussed above, California's Energy Efficiency Standards for Residential and Non-Residential Buildings create uniform building codes to reduce California's energy use and provide energy efficiency standards for residential and non-residential buildings. These standards are incorporated within the California Building Code and are expected to substantially reduce the growth in electricity and natural gas use. For example, requirements for energy-efficient lighting, heating and cooling systems, and green building materials are expected to save additional electricity and natural gas. These savings are cumulative, doubling as years go by.

The Project will include additional energy efficiency measures. For example, solar photovoltaic systems will be automatically installed on the roofs of single-family and multi-family (up to three stories)

constructed as part of the Project. Additionally, the Project Design Guidelines require the use of LED streetlights where streetlights are needed. The Project Design Guidelines specify low-intensity energy-conserving outdoor lighting. Energy-conserving outdoor lighting typically includes full cut-off lights and automated outdoor lights that adjust for time and seasons. In relation, the City of Murrieta recently completed the purchase of approximately 6,500 streetlights within city limits from SCE in an effort to reduce City expenses and have a positive impact on the environment. The City is currently in Phase II of its LED Streetlight Retrofit Project, and anticipates that once the streetlights are retrofitted with LED fixtures, the City will see an approximately 75 percent reduction in the current streetlights energy usage.[18] The Project's LED requirements support the City's initiative to reduce energy usage.

Regarding water energy conservation, the Project will incorporate drought-tolerant landscaping in commonly-owned areas in residential and commercial portions of the site. Water-efficient irrigation controls will also be used in landscape areas. Comprehensive water conservation strategies will be developed to each respective land use as part of the Project plan development. Buildings will incorporate water-efficient fixtures and appliances, to comply with Title 24.

The Project will improve the circulation network to enhance access between the Project and the surrounding areas. Improvements include the extension of McElwain Road from Keller Road to Linnel Lane. This extension will run parallel to I-215. Additional circulation improvements include Project frontage improvements to Keller Road and the construction of an internal neighborhood roadway system.

Furthermore, SCE is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase total procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030. SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat.

The Project will be required to adhere to all federal, state, and Local requirements for energy efficiency, including the latest Title 24 standards. Considering these requirements in addition to the Project design features described above, the Project will not result in the inefficient, wasteful, or unnecessary use of building energy. Therefore, potential impacts are considered less than significant.

Off-Site Operations Impacts

Refer to Operations analysis above.

MITIGATION MEASURES

No mitigation is required.

[18] City of Murrieta. (2019). *Streetlights*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/240/Streetlights. Accessed July 24, 2019.

Impact 4.5-2: Would the Project conflict with or obstruct a State or Local plan for renewable energy or energy efficiency?

Level of Significance: Less than Significant Impact

CONSTRUCTION AND OPERATIONS

Project design and operation will comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. As discussed above in Impact 4.5-1, Project development will not cause inefficient, wasteful and unnecessary energy use, and impacts will be less than significant.

Off-Site Construction and Operations Impacts

Refer to the Construction and Operations analysis above.

REGIONAL PLANS

The Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted in April 2016, integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. The most recent plan was adopted in April 2016. The document establishes GHG emissions goals for automobiles and light-duty trucks, as well as an overall GHG target for the Project region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of SB 375. Increasing residential land uses near major employment centers is a key strategy to reducing regional VMT. Therefore, in addition to generating a net reduction in GHG emissions, the Project will be consistent with regional goals to reduce potential future trips and VMT. The Project will not conflict with the stated goals of the RTP/SCS. Therefore, the Project will not result in wasteful, inefficient, or unnecessary use of transportation fuel. Potential impacts are considered less than significant without mitigation.

MITIGATION MEASURES

No mitigation is required.

4.5.6 CUMULATIVE IMPACTS

Construction and operations associated with implementation of the Project will result in the use of energy, but not in a wasteful manner. The use of energy will not be substantial in comparison to statewide electricity, natural gas, gasoline, and diesel demand; refer to Table 4.5-2 and Table 4.5-3 above. New capacity or supplies of energy resources will not be required. Additionally, the Project will be subject to compliance with all federal, state, and local requirements for energy efficiency.

The anticipated Project impacts, in conjunction with cumulative development in the vicinity, will increase urbanization and result in increased energy use. Potential land use impacts are site-specific and require evaluation on a case-by-case basis. As noted above, the Project will not result in significant impacts to state or local plans for renewable energy or energy efficiency. According to the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in a less than significant impact on demand for and consumption of energy resources with compliance to regulatory programs, standards and GP policies,

(particularly the Climate Action Plan), and mitigation measures. According to the City of Murrieta GP 2035 Final EIR, buildout of the Murrieta GP would result in a less than significant impact on energy resources following adherence to and/or compliance with the existing regulatory framework, and Murrieta GP goals and policies. Thus, the Project and identified cumulative projects are not anticipated to result in a significant cumulative impact. Therefore, potential impacts are considered less than significant.

4.5.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable energy resources impacts have been identified for either the construction or operation phases of the Project.

4.5.8 REFERENCES

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4.6 GEOLOGY AND SOILS

4.6.1 INTRODUCTION

The section examines the existing regulatory and environmental conditions related to the geologic, soil, and seismic characteristics within the Murrieta Hills Specific Plan Amendment (MHSPA or Project) site. This section identifies potential impacts that could result from implementation of the Project, and as necessary, recommends mitigation measures to reduce the significance of impacts. The issues addressed in this section are risks associated with blasting, faults, strong seismic ground shaking, seismic-related ground failure such as liquefaction, landslides, substantial erosion or the loss of topsoil, and unstable geological units and/or soils.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

   ii) Strong seismic ground shaking?

   iii) Seismic-related ground failure, including liquefaction?

   iv) Landslides?

b) Would the Project result in substantial soil erosion or the loss of topsoil?

c) Would the 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?

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

e) Would the 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?

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.6.5, *Impacts and Mitigation Measures* below, impacts vary and include less than significant; no impact; and less than significant with mitigation incorporated.

The environmental setting discussion is based largely on review of the *Update Geotechnical Report Tentative Tract Map No. 35853 Murrieta Hills Specific Plan Southwest of Keller Road and I-215, Murrieta, California* (2014, Appendix 9.5.1) and *Geotechnical/Geological Review Portion of Tentative Tract Map No. 35853 Murrieta Hills Specific Plan, McElwain Roadway, City of Murrieta, California* (2014, Appendix 9.5.2), both prepared by Leighton and Associates, Inc, and review of aerial photographs and maps of the Project and its surroundings. Other information in this section, such as regulatory framework, is derived from the various planning documents including the *Murrieta Hills Specific Plan Amendment* (MHSPA), *City of Murrieta General Plan 2035* (Murrieta GP), County of Riverside GP, Federal Occupational Safety and Health Administration (OSHA) Regulations, Seismic Hazards Mapping Act (SHMA) of 1990, and pertinent State of California building codes.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.6.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-04 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

Natural Setting

The majority of the approximately 972-acre Project site is vacant. The Project site consists of steep hillsides and ridges to the north and south, with a low-lying valley in the central portion. An active drainage channel runs northeast through the central valley. The northeastern corner of the site is relatively flat with a shallow slope to the northeast. The site elevation varies from approximately 1,570 feet above mean sea level (MSL) in the northeast corner of the property to approximately 2,270 feet above MSL within the Project site's western portion.

Regional Geologic Setting

The Project area is located in the south portion of the Perris Block which can be characterized as a stable, eroded mass of Cretaceous and older crystalline and metamorphic rock. The Perris Block is bounded by the San Jacinto fault zone to the northeast, Elsinore fault zone to the southwest, the Cucamonga fault zone to the northwest and the poorly defined northern boundary of the Temecula basin to the southeast. The Temecula segment of the active Elsinore Fault Zone is approximately five miles to the southwest of the Project area.[2]

Local Geologic Setting

The Project site is located within the Peninsular Ranges which is a prominent natural geomorphic province in southwestern California. The Peninsular Ranges can be characterized by steep, elongated ranges and valleys. Tectonic activity along numerous faults has created the geomorphology present within this region. The subsurface materials within the Project area consist of undocumented artificial fill, surficial topsoil/colluvium, younger and older alluvium and granitic bedrock.[3]

Undocumented Artificial Fill (Afu): Undocumented artificial fill was observed in isolated areas, primarily in the central portion of the Project site. The fill is associated with dirt roadways and former building pads. The undocumented artificial fill generally consists of silty sand with scattered debris. All undocumented artificial fill is considered unsuitable for the support of additional fills or structural improvements.

Surficial Soils: Deposits of topsoil and colluvium are present throughout the Project site. These deposits typically extend to two to three feet, but they can be locally thicker. Colluvial soils in excess of 14 feet thick were locally encountered. These soils consist of relatively loose sand silt and silty sand and are considered unsuitable for the support of additional fills or structural improvements.

Young Alluvium (Qal): Deposits of unconsolidated Holocene-age alluvium are present in the central drainage channel and in the relatively low-lying northeastern corner of the Project site. The alluvial deposits are typically less than five feet thick but may locally be up to approximately 15 feet in thickness. The young alluvium is considered unsuitable for the support of additional fills or structural improvements.

Older Alluvium (Qalo): Local deposits of older (Late to Middle Pleistocene) alluvial deposits overlie the bedrock along the central drainage channel and in north-trending valley areas in the western portion of the Project site. The older alluvial deposits are typically thin and discontinuous but may be locally up to

[2] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 4. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

[3] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 5. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

approximately 15 feet in thickness. The older alluvium generally consists of medium dense to dense silty sand and contains some roots and gravels/cobbles. It is anticipated that most of the older alluvium would be unsuitable for support of additional fills or structural improvements in its current condition.

Granitic Bedrock (Kgr): The Cretaceous-age granitic bedrock within the Project site includes gabbro, granodiorite, and granophyre. The granitic rock contains numerous planar dikes and sills of quartz and granite. All of the granitic units are considered suitable for the support of compacted fills and structural improvements. When excavated, these units would generate silty sand with varying percentages and sizes of gravel, and boulders.

The near surface soils made up of undocumented artificial fill, surficial soils, young alluvium, low density older alluvium, and highly weathered bedrock are considered unsuitable for structural fill or foundation support and should be removed to expose competent material as determined by the geotechnical consultant during grading. After removal of unsuitable materials, the excavated soils may be cleared of organic matter and other deleterious material, and re-used as compacted fill.

OFF-SITE IMPROVEMENTS – MCELWAIN ROAD EXTENSION

The McElwain Road extension will connect the MHSPA area to existing Linnel Lane in order to provide secondary access to the Project site. The elevations along the planned roadway extension vary from approximately 1,580 feet above MSL near the southerly end at Linnel Lane to 1,645 feet above MSL near the northerly end. The majority of the McElwain Road extension site was vacant during site reconnaissance with an existing residence located within one parcel. Topographically, the McElwain Road site consists of steep hillsides and ridges to the west, north, and south with low-lying southeast-trending valleys in the central and southern portions. The soil types found within McElwain Road extension area consist of undocumented artificial fill, surficial topsoil/colluvium, younger and older alluvium and granitic bedrock, similar to soils found within the Specific Plan area.[4]

Faulting and Seismicity

REGIONAL FAULTING

The Project area is located within a seismically active region. The principle source of seismic activity is movement along the northwest-trending regional fault systems such as the San Andreas, San Jacinto and Elsinore fault zones. The Project area is not included within an Earthquake Fault Zone as identified by the Alquist-Priolo Earthquake Fault Zoning Act.

Additionally, the Project area is not within a County of Riverside Fault Hazard Zone. The nearest active faults are the Temecula segment of the Elsinore Fault Zone, located approximately five miles to the southwest, the Glen Ivy segment of the Elsinore Fault Zone, located approximately nine miles to the northwest, the San Jacinto Valley segment of the San Jacinto Fault Zone which as approximately 17 miles to the northeast, and the Anza segment of the San Jacinto Fault Zone located approximately 18 miles to the east.[5]

[4] Saiid, S. and Riha, R. (2014). *Geotechnical/Geologic Review, Portion of Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, McElwain Roadway, City of Murrieta, California*. Page 3-4. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.2).

[5] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 9. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

LOCAL FAULTING

Several aerial photo lineaments were mapped within the Specific Plan area. A lineament can be described as a naturally-occurring linear feature or trend that can be identified on a satellite image or aerial photograph of an area of interest for geologic mapping and exploration. The feature or trend may be an expression of an underlying geologic structure, such as a fault or rock fracture. Lineaments are important because they identify possible fault and fractures systems which may be paths or barriers for geothermal fluids and groundwater, and source zones for earthquakes. Fault trenches were excavated across those photo lineaments and it was determined that based on their age (older than Holocene), they were no longer active.[6]

GROUND SHAKING

Strong ground shaking can be expected during moderate to severe earthquakes in this general region and is common in the majority of southern California. Intensity of ground shaking at a given location depends primarily upon earthquake magnitude, site distance from the source, and site response (soil type) characteristics.

SECONDARY SEISMIC HAZARDS

Secondary seismic hazards generally associated with severe ground shaking during an earthquake include ground rupture, lurching, ridgetop shatter, landslides and rockfall, and liquefaction and dynamic settlement.

- **Ground Rupture**

  Ground Rupture is generally considered most likely to occur along pre-existing active faults. Based on previous site investigations, there are no active faults located within the MHSPA area; therefore, the potential for ground rupture is considered low.

- **Lurching**

  Soil lurching refers to the rolling motion on the ground surface by passage of seismic surface waves. Lurching is considered severe in areas where the thickness of soft sediments varies appreciably under structures. The potential for lurching exists on the Project site and can be reduced if the potentially compressible soils present on the site are removed and properly compacted in accordance with the recommendations of the *Update Geotechnical Review* (Leighton, 2014).

- **Ridgetop Shatter**

  Strong ground shaking during earthquakes can result in the shattering of certain geologic deposits where they form elevated ridges. Due to the distance of the Project site from known active fault zones and the granitic bedrock composition in the ridgetop areas, the risk of ridgetop shatter is low. The Project does not propose development in ridgetop areas.

[6] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 9. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

- **Landslides and Rockfall**

  The Project site consists of steep hillsides and ridges to the north and south, with a low-lying valley in the central portion. No evidence of previous land sliding or debris flow was observed during site reconnaissance or during review of the California Geologic Survey (CGS) landslide inventory maps.[7] Numerous outcrops of granitic boulders are perched on the topographically elevated areas. Strong seismic shaking or non-seismic factors, such as erosion, could cause some rocks to become dislodged and fall, creating a hazard. The risk of rockfall is considered low along the southern and northeastern boundary of the Project site due to the moderate hillside steepness and low density of exposed boulders. The ridges in the northcentral, west, and southeastern portion of the Project site have steep topography and contain a large number of exposed boulders; therefore, the risk of rockfall is higher.[8]

  The potential for rockfall due to either erosion or seismic ground shaking is considered possible in the elevated portions of the Project site located west of the McElwain Road extension, where rock outcrops and exposed boulders are present. The roadway extension is not within the areas of earthquake-induced landslide or rock-fall concern.[9]

  For the Project site, the potential for rockfall due to construction activities is considered possible in elevated portions of the site, as described above. Remedial measures may include removal of boulders, securing boulders, debris catchment devices, and rock fences. If additional loose rocks are exposed during grading, removal, repositioning, embedment or stabilization may be needed to prevent rockfall. Methods to further mitigate the rockfall hazard should be based on further rock stability evaluation and review of rough grading plans.

- **Liquefaction and Dynamic Settlement**

  Liquefaction of free-running type soils, such as sand and gravel, can be caused by strong ground shaking motion due to earthquakes. Liquefaction is characterized by a loss of shear strength in the affected soil layers, causing the soil to behave like a syrupy liquid. When insufficient confining pressure is present, liquefaction may be manifested at the ground surface by settlement or sand volcanoes. For the potential effects of liquefaction to be demonstrated at the ground surface, the soils generally have to be granular, loose to medium dense, saturated relatively near the ground surface and must be subjected to a sufficient magnitude and duration of ground shaking. Ground accelerations generated from a seismic event can produce settlements in sands or granular earth materials both above and below the water table, posing a potential hazard to land uses on the surface.

  The Project site contains undocumented fills of granular soils and alluvial soil deposits. Therefore the Project site contains soils susceptible to liquefaction. Assuming that the loose soils will be removed and recompacted in accordance with recommendations provided in the

[7] CGS. (2018). *California Geological Survey - Landslide Data Viewer*. Retrieved from California Department of Conservation (DOC) Website: https://maps.conservation.ca.gov/cgs/DataViewer/. Accessed January 31, 2018.

[8] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 7. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

[9] Saiid, S. and Riha, R. (2014). *Geotechnical/Geologic Review*, *Portion of Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, McElwain Roadway, City of Murrieta, California*. Page 3-4. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.2).

geotechnical/geologic review reports for the Project, the potential for liquefaction due to the design earthquake event to affect structures at the Project site is low.[10]

BLASTING

Blasting or other rock excavation/reduction methods will likely be required in areas which consist of exposed boulders. Oversized rock will be generated during blasting/excavation and may be placed in deeper fill areas. For excavations in harder types of rock, the Project's geotechnical experts experience determines production rates and may dictate the need for blasting for the following factors. These include: 1) fracture pattern and spacing; 2) frequency of solid boulders in decomposed matrix; 3) regularity or irregularity of rippable overburden; 4) equipment type and condition; and 5) skill of equipment operators. For reference, rippability is the ease with which soil or rock can be mechanically excavated. Also, a certain amount of overburden (pressure) is required to effectively reduce the size of blasted rock to a reasonable size specification. Thus, in areas where rippable overburden is shallow, there may not be opportunities to conventionally excavate the overburden, and blasting may be required at the surface. In areas where heavy ripping or blasting is required for excavation, consideration should be given to undercutting street and pad areas.

PALEONTOLOGICAL SETTING

The Project site is on the Peninsular Ranges Batholith consisting of a composite of individual Mesozoic intrusive bodies, mostly granitic clan rocks. The near surface soils are comprised of undocumented artificial fill, surficial soils, young alluvium, low density older alluvium.[11]

According to the Riverside County GP *Multipurpose Open Space Element*, Riverside County has been inventoried for geologic formations known to potentially contain paleontological resources. Lands with high, low or undetermined potential for finding paleontological resources are mapped on Riverside County GP Figure OS-8: Paleontological Sensitivity. According to the map, the Project site is located in an area with low paleontological sensitivity.[12]

However, due to the presence of older alluvium soils throughout the Project site, there is a high possibility of paleontological resources that may be disturbed during construction. The older alluvial deposits are typically thin and discontinuous but may be locally up to approximately 15 feet in thickness. The older alluvium would not be suitable for development and therefore would need to be replaced with additional fills.

[10] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 12. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

[11] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 14 and Appendix E. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

[12] Riverside County (2013). Riverside County General Plan, Multipurpose Open Space Element, Figure OS-8: Paleontological Sensitivity. Page OS-55. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch05_MOSE_120815.pdf?ver=2017-10-11-102103-833. Accessed July 22, 2019.

4.6.3 REGULATORY FRAMEWORK

FEDERAL

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. OSHA's Excavation and Trenching standard, Title 29 of the Code of Federal Regulations, Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

Soil and Water Resources Conservation Act

The purpose of the Soil and Water Resources Conservation Act of 1977 is to protect or restore soil functions on a permanent sustainable basis. Protection and restoration activities include prevention of harmful soil changes, rehabilitation of the soil of contaminated sites and of water contaminated by such sites, and precautions against negative soil impacts. Disruptions of natural soil functions and function as an archive of natural and cultural history should be avoided, as far as practicable. In addition, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) requirements, through the National Pollution Discharge Elimination System (NPDES) permitting process, provide guidance for protection of geologic and soil resources.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) established the National Earthquake Hazards Reduction Program (Program) which is coordinated through the Federal Emergency Management Agency (FEMA), the U.S. Geological Survey (USGS), the National Science Foundation, and the National Institute of Standards and Technology. The purpose of the Program is to establish measures for earthquake hazards reduction and promote the adoption of earthquake hazards reduction measures by federal, state, and local governments; national standards and model code organizations; architects and engineers; building owners; and others with a role in planning and constructing buildings, structures, and lifelines through (1) grants, contracts, cooperative agreements, and technical assistance; (2) development of standards, guidelines, and voluntary consensus codes for earthquake hazards reduction for buildings, structures, and lifelines; and (3) development and maintenance of a repository of information, including technical data, on seismic risk and hazards reduction. The Program is intended to improve the understanding of earthquakes and their effects on communities, buildings, structures, and lifelines through interdisciplinary research that involves engineering, natural sciences, and social, economic, and decisions sciences.

U.S. Geological Survey Landslide Hazard Program

The USGS Landslide Hazard Program provides information on landslide hazards including information on current landslides, landslide reporting, real time monitoring of landslide areas, mapping of landslides through the National Landslide Hazards Map, local landslide information, landslide education, and research.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act (PRPA) is part of the Omnibus Public Land Management Act of 2009 (Public Law 111-011 Subtitle D). The PRPA directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land, and develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under the PRPA, establishes penalties for violation of the PRPA and establishes a program to increase public awareness about such resources. As of May 18, 2015, the U.S. Department of Agriculture has implemented a new rule that "provides for the preservation, management, and protection of paleontological resources on National Forest System (NFS) lands and ensures that these resources are available for current and future generations to enjoy as part of America's national heritage. The rule addresses the management, collection, and curation of paleontological resources from NFS lands including management using scientific principles and expertise, collecting of resources with and without a permit, curation in an approved repository, maintaining confidentiality of specific locality data, and authorizing penalties for illegal collecting, sale, damaging, or otherwise altering or defacing paleontological resources".

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] 2621-2624, Division 2 Chapter 7.5) was passed in 1972 following the destructive February 9, 1971 moment magnitude (Mw) 6.6 San Fernando earthquake to mitigate the hazard of surface faulting to structures intended for human occupancy. The Act's main purpose is to prohibit siting buildings used for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The Act requires the State Geologist to establish regulatory zones, known as "Earthquake Fault Zones," delineating appropriately wide earthquake fault zones to encompass potentially active and recently active traces of faults. Local agencies must regulate most development projects within these zones. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed human occupancy structures would not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically at least 50-foot setbacks are required).[13]

Effective June 1, 1998, 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, including Earthquake Fault Zones.

Seismic Hazards Mapping Act of 1990

The SHMA of 1990 (PRC, Section 2690 et seq.) directs the DOC's California Geological Survey, to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The

[13] California DOC. (2019). *The Alquist-Priolo Earthquake Fault Zones*. Retrieved from DOC Website: at https://www.conservation.ca.gov/cgs/alquist-priolo. Accessed July 22, 2019.

purpose of the SHMA is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards.

The SHMA provides a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other seismic hazards caused by earthquakes. Mapping and other information generated pursuant to the SHMA is to be made available to local governments for planning and development purposes. The state requires (1) local governments to incorporate site-specific geotechnical hazard investigations and associated hazard mitigation as part of the local construction permit approval process, and (2) the agent for a property seller, or the seller if acting without an agent, to disclose to any prospective buyer if the property is located within a seismic hazard zone. The State Geologist is responsible for compiling seismic hazard zone maps. The SHMA specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

2016 California Building Standards Code

California building standards are published in the California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code (CBSC). The CBSC, which applies to all applications for building permits, consists of 11 parts that contain administrative regulations for the California Building Standards Commission and for all state agencies that implement or enforce building standards. Local agencies must ensure development complies with the CBSC guidelines. Cities and counties can adopt additional building standards beyond the CBSC. CBSC Part 2, named the California Building Code (CBC), is based upon the 2016 International Building Code (IBC). The 2016 CBSC (CCR, Title 24) went into effect on January 1, 2017. In addition, proposed building code changes are underway. Part 1, California Administrative Code, of the 2019 CBSC went into effect January 8, 2019. The remaining approved standards will have an effective date of January 1, 2020. Significant changes to Part 1 include 1) clarifying when an addition is required to have a dedicated egress system and 2) revising project inspector certification examinee eligibility criteria to better recognize appropriate qualifying experience and/or education. The CBSC website has additional 2019 CBSC changes.[14] Project construction will comply with the 2016 and 2019 CBSC.

Given the state's susceptibility to seismic events, the CBC's seismic standards are among the strictest in the world. The CBC applies to all development in the state, except where stricter standards have been adopted by local agencies. CBC Chapter 16 addresses structural design requirements governing seismically resistant construction (CBC §1604), including (but not limited to) factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the building location and the proposed building design (CBC §1613.5 through 1613.7). CBC Chapter 18 includes (but is not limited to) the requirements for foundation and soil investigations (CBC §1803); excavation, grading, and fill (CBC §1804); allowable load-bearing values of soils (CBC §1806); and the design of footings, foundations, and slope clearances (CBC § 1808 and 1809), retaining walls (CBC §1807), and pier, pile, driven, and cast-in-place foundation support systems (CBC §1810). CBC Chapter 33 includes, but is not limited to, requirements for safeguards at worksites to ensure stable excavations and cut or fill slopes (CBC §3304).

[14] California Dept. of General Services (DGS). (2019). *Summary of 2019 California Building Standards Code Changes*. Retrieved from DGS Website: https://www.dgs.ca.gov/-/media/Divisions/DSA/Publications/other/2019-CBC-CodeChangeSummary.ashx. Accessed August 29, 2019.

Construction activities are subject to occupational safety standards for excavation and trenching as specified in the California OHSA regulations (Title 8 of the CCR) and in Chapter 33 of the CBC. These regulations specify the measures to be used for excavation and trench work where workers could be exposed to unstable soil conditions. The Project will be required to employ these safety measures during excavation and trenching.

State Earthquake Protection Law

The State Earthquake Protection Law (California Health and Safety Code [HSC] 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC requires a site-specific geotechnical study to address seismic issues and identifies seismic factors that must be considered in structural design. Because the MHSPA area is not located within an Alquist–Priolo Earthquake Fault Zone, no special provisions would be required for project development related to fault rupture.

REGIONAL

County of Riverside General Plan

MULTIPURPOSE OPEN SPACE ELEMENT

This element addresses protecting and preserving natural resources, agriculture and open space areas, managing mineral resources, preserving and enhancing cultural resources, and providing recreational opportunities for the citizens of Riverside County. Paleontological resources are the fossilized biotic remains of ancient environments. They are valued for the information they yield about the history of the earth and its past ecological settings.[15]

The following policies are intended to ensure that paleontological resources are appropriately considered:

Policy OS 19.7: Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified, and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

Policy OS 19.9: Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

[15] Riverside County (2015). *Riverside County General Plan, Chapter 5: Multipurpose Open Space Element*. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch05_MOSE_120815.pdf?ver=2017-10-11-102103-833. Page OS-51. Accessed April 24, 2019.

SAFETY ELEMENT[16]

The Safety Element serves the following functions:

- Develops a framework by which safety considerations are introduced into the land use planning process;
- Facilitates the identification and mitigation of hazards for new development, and thus strengthens existing codes, project review, and permitting processes;
- Presents policies directed at identifying and reducing hazards in existing development; and
- Strengthens earthquake, flood, inundation, and wildland fire preparedness planning and post-disaster reconstruction policies.

Policy S 2.2: Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement, for any building proposed for human occupancy and any structure whose damage would cause harm, except for accessory buildings. (AI 81).

Policy S 2.5: Require that engineered slopes be designed to resist seismically-induced failure. For lower-risk projects, slope design could be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, the stability analyses should factor in the intensity of expected ground shaking, using a Newmark-type deformation analysis.

Policy S 2.6: Require that cut and fill transition lots be over-excavated to mitigate the potential of seismically-induced differential settlement.

Policy S 2.7: Require a 100% maximum variation of fill depths beneath structures to mitigate the potential of seismically-induced differential settlement.

Policy S 3.1: Require the following in landslide potential hazard management zones, or when deemed necessary by the California Environmental Quality Act: (AI 104)

a. Preliminary geotechnical and geologic investigations.

b. Evaluations of site stability, including any possible impact on adjacent properties, before final project design is approved.

c. Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications be prepared by state-licensed professionals.

Policy S 3.3: Before issuance of building permits, require certification regarding the stability of the site against adverse effects of rain, earthquakes, and subsidence.

[16] Riverside County (2016*). Riverside County General Plan, Chapter 6: Safety Element*. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch06_Safety_DEC2016.pdf?ver=2017-10-06-093651-757. Accessed April 24, 2019.

Policy S 3.4: Require adequate mitigation of potential impacts from erosion, slope instability, or other hazardous slope conditions, or from loss of aesthetic resources for development occurring on slope and hillside areas.

Policy S 3.5: During permit review, identify and encourage mitigation of on-site and off-site slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements.

Policy S 3.6: Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project=s ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.

LOCAL

City of Murrieta General Plan 2035

SAFETY ELEMENT[17]

The Safety Element of the Murrieta GP includes goals and policies that will be applied to the Project related to geology and soils. The goals and policies that would be applied to the Project have been analyzed for consistency in Section 4.10, *Land Use and Planning*. The applicable policies related to geology and soils are listed below:

Goal SAF-1: ***People and properties are provided with protection from natural and man-made hazards.***

Policy SAF-1.1: Encourage that areas be dedicated as open space when necessary and appropriate to protect property, public health, and safety from hazards such as earthquake fault zones or flood plains.

Policy SAF-1.4: Review public safety infrastructure and staff resources as new development is planned or proposed in Murrieta and the Sphere of Influence.

Goal SAF-2: ***Damage from geologic and seismic hazards is minimized by identifying and addressing these hazards during the planning and engineering of built improvements.***

Policy SAF-2.1: Prior to site development, projects located in areas where liquefaction, subsidence, landslide, and fissuring are considered hazards shall be required to prepare geologic reports addressing site conditions, potential risk, and mitigation, to the satisfaction of the City Engineer.

Policy SAF-2.2: Require that all new development comply with the Alquist-Priolo Earthquake Fault Zoning Act.

Policy SAF-2.3: Seek to maintain emergency access in the event of an earthquake by engineering roadways to reduce damage to them.

[17] City of Murrieta. (2011). *General Plan 2035, Chapter 12: Safety Element*. Pages 12-24 to 12-25. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 22, 2019.

CONSERVATION ELEMENT[18]

The General Plan Conservation Element provides direction regarding the conservation, development, and utilization of natural and cultural resources. It serves as a guide for the City of Murrieta to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve, or conserve these resources. The Conservation Element considers the following resources in the natural environment: water; hills and ridges; and mineral, paleontological, and biological resources.

The following goal and policies are applicable:

Goal CV-7: Paleontological resources are conserved as a record of the region's natural history.

Policy CSV-7.1: Continue development review procedures that protect paleontological resources.

Policy CSV-7.2: Encourage local display and educational use of paleontological resources

City of Murrieta Municipal Code[19]

The City of Murrieta adopted the Building and Construction Codes in Title 15, Chapter 15.08. These codes regulate grading, flood damage prevention, CALGreen Building Codes, erosion control; and for construction, adoption of the CBC. Grading permits are required for all project sites with few exceptions, none of which would apply to the Project. Building permits are required and may be issued, as stated above, for projects that conform to the CBC.

4.6.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

   vi) Strong seismic ground shaking.

   vii) Seismic-related ground failure, including liquefaction.

   viii) Landslides. (see Impact 4.6-1);

[18] City of Murrieta. (2011*). General Plan 2035, Chapter 8: Conservation Element*. Page 8-20. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed July 22, 2019.

[19] American Legal Publishing Corporation (ALPC). (2018). Murrieta, CA Municipal Code, Chapter 15.08 California Building Standards Codes. Retrieved from ALPC Website: http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca. Accessed July 22, 2019.

b) Result in substantial soil erosion or the loss of topsoil. (see Impact 4.6-2);

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. (see Impact 4.6-3);

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. (see Impact 4.6-4);

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. (see Impact 4.6-5); or

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (see Impact 4.6-6).

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning geological and soil resources. This analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on geological and soil resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on significance criteria/threshold's application outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by Kimley-Horn; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on geological and soil resources considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- Project land use development avoids development on ridgetop areas, where soil stability and construction impacts would be significant;

- Project design has set aside over 600 acres of natural open space, including portions of the site with ravines and steeper slopes, which reduces the total amount of grading and minimizes erosion; and
- Project construction will re-use on-site soils, where applicable, as fill during grading provided that they are free of organic matter.

4.6.5 IMPACTS AND MITIGATION MEASURES

Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

Level of Significance: Less Than Significant Impact

CONSTRUCTION

None of the Project components are located in proximity to any known active earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. However, the Project site is within a seismically active region in southern California. The nearest zoned active faults are the Temecula segment of the Elsinore Fault Zone, located approximately five miles southwest of the Project site. The Glen Ivy segment of the Elsinore Fault Zone is approximately nine miles northwest of the Project site. The San Jacinto Valley segment of the San Jacinto Fault Zone is approximately 17 miles northeast of the Project site, and the Anza segment of the San Jacinto Fault Zone is approximately 18 miles east of the Project site. As such, impacts to all project components will be less than significant and mitigation for this geologic hazard will not be required.

Off-Site Construction Impacts

The McElwain Road extension is not within an Alquist-Priolo Fault zone. Impacts will be similar to the on-site construction impacts. Refer to the Construction impact analysis above.

OPERATIONS

As previously discussed, the Project is not located in close proximity to any known fault lines. Furthermore, operation of the various Project components will adhere to all applicable City regulations and engineering standards and specifications. Therefore, impacts will be less than significant.

Off-Site Operations Impacts

Refer to the Operations discussion above.

MITIGATION MEASURES

No mitigation is required.

Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

ii) Strong seismic ground shaking?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

The Project is located in the southern California region, which is prone to ground shaking. All Project components will be constructed to the then current Uniform Building Code standards and will be designed in conformance with all applicable standards to resist the harmful effect of seismic ground shaking.

CONSTRUCTION

Intensity of ground shaking at a given location depends primarily upon earthquake magnitude, site distance from the source, and site response (soil type) characteristics. The site-specific seismic coefficients based on the 2013 CBC are provided in Table 4.6-1 below.

Table 4.6-1: 2013 CBC Site-Specific Seismic Coefficients

CBC Categorization/Coefficient	Value (g)
Spectral Response Acceleration at 0.2s Period, S_S	1.64
Mapped Spectral Response Acceleration at 1s Period, S_1	0.71
Short Period Site Coefficient at 0.2s Period, F_a	1.0
Long Period Site Coefficient at 1s Period, F_V	1.5
Adjusted Spectral Response Acceleration at 0.2s Period, S_{MS}	1.64
Adjusted Spectral Response Acceleration at 1s Period, S_{M1}	1.06
Design Spectral Response Acceleration at 0.2s Period, S_{DS}	1.1
Design Spectral Response Acceleration at 1s Period, S_{D1}	0.71
Notes: * g- Gravity acceleration 1) Site Longitude (decimal degrees): -117.17570 2) Site Latitude (decimal degrees): 33.62465 3) Site Class Definition: D	
Source: Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Table 1. Page 10. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).	

All Project components will be constructed to then current Uniform Building Code standards and will be designed in conformance with all applicable standards to resist the harmful effect of seismic ground shaking. The potential for damage resulting from seismic-related events include ground shaking, ground failure, and ground displacement. Strong levels of seismic ground shaking can cause damage, particularly to older and/or poorly constructed buildings. Construction of the development will be required to conform to the seismic design parameters of the CBC that is current at the time of construction, as adopted by the City. Mitigation Measure GEO-1 (MM GEO-1) requires the City to verify the Project plans have incorporated the design, building, and safety recommendations provided in the geotechnical/geologic reviews conducted for this Project. Compliance with MM GEO-1 and applicable regulations and codes will reduce potential impacts related to strong seismic ground shaking to a less than significant level.

Off-Site Construction Impacts

Impacts related to ground shaking to the off-site improvement areas are similar to the on-site construction impacts. Refer to the Construction analysis above.

OPERATIONS

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone. There is a possibility of strong seismic ground shaking for the Project's residential and commercial land uses due to the nature of the geographic region of southern California and its seismic activity. To reduce impacts, compliance with MM GEO-1 requires a qualified geologist and geotechnical engineer to prepare site-specific geotechnical hazard investigations and recommendations for design level measures. This mitigation measure ensures operation impacts to be less than significant in relationship to strong seismic ground shaking.

Off-Site Operations Impacts

Impacts related to ground shaking to the off-site improvement areas are similar to the on-site Project components. Refer to the Operation analysis above.

MITIGATION MEASURES

MM GEO-1: Prior to the issuance of grading permits, the City shall verify that all (on-site and off-site) Project design, building, and safety recommendations outlined in the Project geotechnical/geologic review reports (located in Appendix 9.5.1 and Appendix 9.5.2) are approved by the City Engineer and have been successfully incorporated into the Project plans for implementation during the Project grading and construction phases. Documentation of the implementation of the recommendations into the Project plans shall be conducted by the Project Applicant or designated representative. Successful incorporation of these specifications into the Project plans shall be verified by the Lead Agency prior to the issuance of building permits.

Impact 4.6-1: **Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

iii) Seismic-related ground failure, including liquefaction?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Loose granular soils below a near-surface groundwater table are most susceptible to liquefaction, while the stability of most clayey material is not adversely affected by vibratory motion. The Project site contains undocumented fills of granular soils and alluvial soil deposits which could result in liquefication from seismic ground shaking. To reduce impacts due to liquefaction, compliance with MM GEO-1 and MM GEO-2 would be required. The Project geotechnical/geologic review reports list recommendations for loose soil removal and re-compaction standards. After implementation of MM GEO-1, total post-construction dynamic settlement (dry sand settlement) due to the ground shaking would be reduced.

Off-Site Construction Impacts

The McElwain Road Extension site area contains loose surficial soils and alluvial deposits. Implementation of MM GEO-1 will be required. The Project geotechnical/geologic review reports list recommendations for removal of soils not suitable for road construction. Soil removal and compaction standards and guidelines are outlined in earthwork preparation measures outlined in Appendix 9.5.1 and Appendix 9.5.2. Impacts are similar to the on-site construction impacts. Refer to the Construction analysis above.

OPERATIONS

Overall, Project development could result in potential impacts to persons and structures involving liquefaction. There is a possibility of strong seismic ground shaking in the Project area due to the nature of the geographic region of southern California and its seismic activity. The residential and commercial structures are susceptible to ground shaking and liquefaction effects. To further reduce potential impacts due to liquefaction, compliance with MM GEO-1 and MM GEO-2 will be required. MM GEO-1 will include any necessary recommendations for soils remediation and/or foundation systems necessary to reduce seismic-related hazards, such as liquefaction, to a less than significant level. In addition, the Project design and construction would be subject to compliance with the then current CBSC. Compliance with the then current CBSC and MM GEO-1, will ensure that persons and structures associated with the Project will not be exposed to potential seismic-related liquefaction. Impacts will be less than significant with mitigation.

Off-Site Operations Impacts

Refer to the Operations analysis above.

MITIGATION MEASURES

Refer to MM GEO-1.

MM GEO-2: The undocumented fill soils (to be re-used on-site as engineered fill) will be cleared of organic matter and other deleterious material, if any. The soils will then be spread in thin lifts on ground approved by the geotechnical consultant, moisture conditioned as needed and compacted.

Impact 4.6-1: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

iv) Landslides?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

No evidence of on-site landslides/debris flow was observed during field investigations or documented on the CGS Landslide Inventory. Potential rockfall due to either blasting, erosion or seismic ground shaking is considered possible in limited areas along the elevated portions of the Project site where rock outcrops and exposed boulders are present. Rockfall hazard is not anticipated along the southern boundary of the development area based on the moderate steepness of the southern hillsides and the low density of exposed boulders in the area. Rockfall hazard is anticipated along the northern ridges near the northern Project boundary due to very steep topography and contains a large number of exposed boulders.

Blasting or other rock excavation and reduction methods will likely be required in the deeper cut and exposed boulder outcrop areas. In areas where heavy ripping or blasting is required for excavation, consideration should be given to street and pad areas since these areas require more accuracy in blasting than others. Slopes cut into gabbro or granodiorite could adversely affect the stability of the slope in the form of seismically induced rock falls, wedge failures, slides or slumps. Each cut slope will be evaluated during grading. Adverse conditions could possibly require the construction of a stabilization fill, buttress or possibly rock bolting. Oversize rock will be generated during blasting/excavation and may be placed in deeper fill areas.

Therefore, compliance with MM GEO-1 will be required, which includes remedial measures such as removal of boulders, securing boulders (e.g., rock bolting), debris catchment devices, and rock fences as described in the geotechnical/geologic review reports (removal of boulders shall be approved by the Project archaeologist to ensure consistency with applicable cultural resource mitigation and preservation commitments). If additional loose rocks are exposed during grading, removal, repositioning, embedment or stabilization will be required to prevent rockfall. Methods to further mitigate the rockfall hazard will be based on the findings of future evaluations/reviews recommended in the Project geotechnical/geologic review reports under MM GEO-1. Impacts will be less than significant with mitigation.

Off-Site Construction Impacts

The potential for rockfall is considered possible in the elevated portions located both east and west of the proposed McElwain Road extension, where rock outcrops and exposed boulders are present. The potential for rockfall in the vicinity of the utility improvements is very low. The above blasting discussion also applies to off-site improvements. Therefore, compliance with MM GEO-1 will be required.

OPERATIONS

Due to the active seismicity of the region, the residential and commercial developments would conform to the then current CBC standards as well as any applicable building code regulations from the City of Murrieta. Overall, Project developments could expose persons and structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure (liquefaction/lateral spreading), blasting, and seismically-induced landslides. Therefore, implementation of MM GEO-1 will further reduce impacts related to landslides. Impacts are less than significant with mitigation.

Off-Site Operations Impacts

Refer to the Operation analysis above.

MITIGATION MEASURES

Refer to MM GEO-1.

Impact 4.6-2: Would the Project result in substantial soil erosion or the loss of topsoil?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Construction activities such as excavation and grading may have the potential to cause soil erosion or the loss of topsoil. The on-site soils are geotechnically suitable for re-use as compacted fill during proposed grading, provided they are relatively free of organic matter, other deleterious material or oversize rock fragments. The Project will involve an estimated 2,541,432 cubic yards (CY) of cut, and 2,660,592 CY of fill; therefore, requiring approximately 119,160 CY of additional fill material. The additional fill material will come from on-site trenching spoils. Material to be used as fill shall be essentially free of organic matter and other deleterious substances as evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (two working days) before importing begins so that its suitability can be determined, and appropriate tests performed.[20]

Construction activities related to the Project will be required to comply with the NPDES General Construction Permit; refer to Section 4.9, *Hydrology and Water Quality* for discussion of the Project's anticipated NPDES permitting process. The construction will be required to comply with the erosion control measures stipulated through the CBSC that is current at the time of construction and the Murrieta MC Chapter 8.36 Article 3 - *Control of Discharges and Runoff*, which requires compliance with NPDES permits and implementation measures. Further, all grading and building activities will be in compliance with the *Grading, Erosion and Sediment Control Ordinance* under Murrieta MC Chapter 15.52; the *Grading Manual*; other applicable ordinances; federal, state, and local permits; and other applicable requirements. Implementation of MM GEO-1, MM HYD-1, and MM HYD-3 will further reduce impacts through protective measures to mitigate excessive site erosion and runoff during construction. Project design has minimized the total development footprint and avoided the steeper slopes and site ravines, which reduces grading and associated erosion. Implementation of mitigation measures and these permitting requirements will ensure that impacts related to soil erosion are less than significant.

Off-Site Construction Impacts

Refer to the Construction analysis above.

OPERATIONS

Project implementation will not involve operations which could result in substantial soil erosion that could cause significant property damage or result in the loss of topsoil/sedimentation into local drainage facilities and water bodies; refer to Section 4.9, *Hydrology and Water Quality*. A network of storm drains and gutters will be maintained and upgraded as necessary and provided throughout the developed site, along with landscaped and park areas and groundcovers to prevent soil erosion or loss of topsoil.

Off-Site Operations Impacts

Refer to the Operations analysis above.

[20] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Appendix D. Page 4. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

MITIGATION MEASURES

Refer to MM GEO-1, MM HYD-1, and MM HYD-3.

Impact 4.6-3: Would the 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?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The principle source of seismic activity is movement along the northwest trending regional fault systems such as the San Andreas, San Jacinto and Elsinore fault zones. The Project site is not included within an Earthquake Fault Zone as identified by the Alquist-Priolo Earthquake Fault Zoning Act. However, the Project site is in a seismically active area.

The Project site contains undocumented fills of granular soils and alluvial soil deposits, which are prone to liquefaction and collapse if subjected to ground shaking. Therefore, implementation of MM GEO-1 and MM GEO-2 will be required, which contains specific designs and standards regarding re-compaction and soil stabilization.

Conventional cut and fill grading will be utilized to construct the graded pads and roadways. The maximum proposed cuts and fills are on the order of 80 and 35 feet, respectively. A generalized stability analysis was performed for the proposed 2:1 (horizontal:vertical) cut and fill slopes based on the 2013 Tentative Tract Map No. 35853. The cut and fill slopes were generally higher than what is currently proposed (by up to 111 feet in height). Based on the analysis, the proposed slopes are anticipated to be grossly stable for both static and pseudo-static loading conditions. Slopes up to 1.5:1, which have been approved by the City Engineer, may be considered stable when excavated into the less weathered, on-site granitic bedrock pending further field verification and evaluation during construction or when rough-grading plans become available. Cut slopes excavated in younger or older alluvium are considered unstable and should be recompacted with replacement fill.

Slope faces are inherently subject to erosion, particularly if exposed to rainfall and irrigation. Landscaping and slope maintenance should be conducted as soon as possible in order to increase long-term surficial stability.

Furthermore, Project construction will be temporary and therefore will not be susceptible to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Impacts will be less than significant in this regard.

Off-Site Construction Impacts

Refer to the Construction analysis above.

OPERATIONS

Project implementation could expose persons and structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure (liquefaction/lateral spreading),

and seismically-induced landslides. MM GEO-1 and MM GEO-2 will identify earthwork considerations during construction phases, such as site preparation, soil removal, cut/fill transition lots, soil compaction, structural fills, and removal of boulders. Implementation of MM GEO-1 and MM GEO-2 will reduce impacts to a less than significant level. Further, Project designs will be subject to compliance with the then current CBSC. Implementation of the Project design features discussed previously, as well as compliance with the then current CBSC and MM GEO-1 and MM GEO-2, will address impacts related to unstable soils. Impacts will be less than significant with mitigation.

Off-Site Operations Impacts

Refer to the Operation analysis above.

MITIGATION MEASURES

Refer to MM GEO-1 and MM GEO-2.

Impact 4.6-4: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

Soils that expand and contract in volume ("shrink-swell" pattern) are considered to be expansive and may cause damage to aboveground infrastructure as a result of density changes that shift overlying materials. Fine-grain clay sediments are most likely to exhibit shrink-swell patterns in response to changing moisture levels. According to the Geotechnical Reviews prepared for the Project (see Appendix 9.5), the Project area consists of undocumented artificial fill, surficial topsoil/colluvium, younger and older alluvium and granitic bedrock.

CONSTRUCTION

Based on previous geotechnical explorations, the on-site soils have generally very low to low expansion index (Expansion Index $\geq$ 50 per American Society for Testing and Materials [ASTM] D4829).[21] Localized deposits of medium or higher expansive soils may be encountered during grading of surficial soils; therefore, MM GEO-1 will be required, which details additional testing to confirm the expansion potential for all soils.

The Project will be subject to various controls to reduce the exposure of people and structures to the effects of expansive soils. Specifically, the Project will be subject to compliance with requirements set forth in the CBSC that is current at the time of construction and site-specific mitigation measure. Compliance with MM GEO-1, and the current CBSC will ensure that Project construction will result in a less than significant impact related to risks to life or property associated with expansive soils.

Off-Site Construction Impacts

Refer to the Construction analysis above.

[21] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta, California*. Page 6. Temecula, CA: Leighton and Associates, Inc. (EIR Appendix 9.5.1).

OPERATIONS

The Project will be subject to compliance with requirements set forth in the CBSC that is current at the time of construction and site-specific mitigation measure. MM GEO-1 includes settlement considerations, foundation design, and earthwork considerations related to soil removal and compaction. MM GEO-1 will include any necessary recommendations for soils remediation and/or foundation systems necessary to reduce risks to life and property. Compliance with MM GEO-1 and the then current CBSC will ensure that Project operations will result in a less than significant impact related to risks to life or property associated with expansive soils.

Off-Site Operations Impacts

Refer to the Operation analysis above.

MITIGATION MEASURES

Refer to MM GEO-1.

Impact 4.6-5: Would the 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?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

The Project does not propose the use of septic tanks or an alternative waste water disposal system. The Project will utilize the existing sanitary sewer system in the area. Specifically, sewer service is provided by the Eastern Municipal Water District (EMWD). Sewer facilities are provided in Zeiders Road. Existing sewer pipes in Zeiders Road are 12 inches in diameter and currently terminate approximately one-half mile north of the Project site. Impacts will not occur, and mitigation is not required.

Off-Site Construction and Operations Impacts

The off-site improvements will not utilize septic tanks. No impact will occur in this regard.

MITIGATION MEASURES

No mitigation is required.

Impact 4.6-6: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Level of Significance: Less than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Local deposits of older (Late to Middle Pleistocene) alluvial deposits overlie the bedrock along the central drainage channel and in north-trending valley areas in the western portion of the Project site. The older alluvial deposits are typically thin and discontinuous but may be locally up to approximately 15 feet in

thickness. The older alluvium generally consists of medium dense to dense silty sand and contains some roots and gravels/cobbles.

The Project site is on the Peninsular Ranges Batholith consisting of a composite of individual Mesozoic intrusive bodies, mostly granitic clan rocks. The near surface soils are comprised of undocumented artificial fill, surficial soils, young alluvium, low density older alluvium.

Due to the presence of older alluvium soils throughout the Project site, there is a high possibility of paleontological resources that may be disturbed during construction. The older alluvial deposits are typically thin and discontinuous but may be locally up to approximately 15 feet in thickness. The older alluvium will not be suitable for development and therefore will need to be replaced with additional fills. Thus, potential significant effects to paleontological resources are primarily associated with ground-disturbance in Quaternary alluvium soils. Impacts to paleontological resources resulting from ground-disturbing construction activity could include the destruction of fossils.

With implementation of MM GEO-3 (Paleontological Construction Monitoring and Compliance Program), construction of the Project components will not destroy a unique paleontological resource or site or unique geologic feature, thereby reducing impacts to a less than significant level.

Off-Site Construction Impacts

The proposed McElwain Road extension contains similar geological and paleontological environmental settings. The off-site improvement also contains undocumented artificial fills, surficial soils, young alluvium, and weathered older alluvium. Therefore, sensitivity for paleontological resources remain high. Implementation of MM GEO-3 would be required to reduce impacts to a less than significant level.

OPERATIONS

Project implementation and operation will not involve any activities that impact paleontological resources. Therefore, Project operations will not destroy a unique paleontological resource or unique geologic feature.

Off-Site Operations Impacts

Operation of the McElwain Road extension will not involve any activities that impact paleontological resources. Therefore, operation of the road will not destroy a unique paleontological resource or unique geologic feature and no impact would occur.

MITIGATION MEASURES

MM GEO-3: **Paleontological Construction Monitoring and Compliance Program.** The following measures will be implemented to reduce potential impacts to paleontological resources to less than significant:

- **Retain a Qualified Paleontologist**. Prior to initial ground disturbance, the Applicant shall retain a Project paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology standards for Qualified Professional Paleontologist, to direct all mitigation measures related to paleontological resources.

- **Paleontological Mitigation and Monitoring Program**. After Project design has been finalized to determine the precise extent and location of planned ground disturbances, and prior to construction activity, a qualified paleontologist will prepare a Paleontological Mitigation and Monitoring Program to be implemented during ground disturbance activity for the Project. This program will outline the procedures for construction staff Worker Environmental Awareness Program (WEAP) training, paleontological monitoring extent and duration, salvage and preparation of fossils, the final mitigation and monitoring report, and paleontological staff qualifications. The program will be prepared in accordance with the standards set forth by current Society of Vertebrate Paleontology guidelines (2010) and with proper implementation, will reduce or eliminate potential impacts to paleontological resources.
- **Paleontological Worker Environmental Awareness Program**. Prior to the start of construction, the Project paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The WEAP shall be presented at a preconstruction meeting that a qualified paleontologist shall attend. In the event of a fossil discovery by construction personnel, all work in the immediate vicinity of the find shall cease and a qualified paleontologist shall be contacted to evaluate the find before restarting work in the area. If it is determined that the fossil(s) is (are) scientifically significant, the qualified paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources.
- **Paleontological Monitoring**. Ground disturbing construction activities (including grading, trenching, foundation work, and other excavations) in areas mapped as high paleontological sensitivity should be monitored on a full-time basis by a qualified paleontological monitor during initial ground disturbance. Areas mapped as low to high paleontological sensitivity should be monitored when ground-disturbing activities exceed five feet in depth, because underlying sensitive sediments could be impacted. Areas considered to have an undetermined paleontological sensitivity should be inspected and further assessed if construction activities bring potentially sensitive geologic deposits to the surface. The Paleontological Mitigation and Monitoring Program shall be supervised by the Project paleontologist. Monitoring should be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources. The duration and timing of the monitoring will be determined by the Project paleontologist. If the Project paleontologist determines that full-time monitoring is no longer warranted, he or she may recommend that monitoring be reduced to periodic spot-checking or cease entirely. Monitoring would be reinstated if any new or unforeseen deeper ground disturbances are required and reduction or suspension would need to be reconsidered by the Supervising Paleontologist. Ground disturbing activity that does not exceed five feet in depth will not require paleontological monitoring.

- **Salvage of Fossils**. If fossils are discovered, the Project paleontologist or paleontological monitor should recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist would have the authority to temporarily direct, divert, or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.
- **Preparation and Curation of Recovered Fossils**. Once salvaged, the City will ensure that significant fossils will be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the Western Science Center), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Project paleontologist. Field collection and preparation of fossil specimens will be performed by the Project paleontologist with further preparation as needed by an accredited museum repository institution at the time of curation.
- **Final Paleontological Mitigation Report**. Upon completion of ground disturbing activity (and curation of fossils, if necessary) the qualified paleontologist should prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include discussion of the location, duration, and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.

4.6.6 CUMULATIVE IMPACTS

Southern California is a seismically active region with a range of geologic and soil conditions. These conditions can vary widely within a limited geographical area due to factors, including differences in landforms and proximity to fault zones, among others. Therefore, while geotechnical impacts may be associated with the cumulative development, by the very nature of the impacts (i.e., landslides and expansive and compressible soils), the constraints are typically site specific and there is typically little, if any, cumulative relationship between the development of a proposed project and development within a larger cumulative area, such as citywide development. Additionally, while seismic conditions are regional in nature, seismic impacts on a given project site are site specific. For example, development within the site or surrounding area would not alter geologic events or soil features/characteristics (such as ground-shaking, seismic intensity, or soil expansion); therefore, the project would not affect the level of intensity at which a seismic event on an adjacent site is experienced. However, project development and future development in the area may expose more persons to seismic hazards.

In accordance with the thresholds of significance, impacts associated with seismic events and hazards would be considered significant if the effects of an earthquake on a property could not be mitigated by an engineered solution. The significance criteria do not require elimination of the potential for structural damage from seismic hazards. Instead, the criteria require an evaluation of whether the seismic conditions on a site can be overcome through engineering design solutions that would reduce to less than significant the substantial risk of exposing people or structures to loss, injury, or death.

State and local regulatory code requirements and their specific mandatory performance standards are designed to ensure the integrity of structures during maximum ground shaking and seismic events. The Project will be constructed in compliance with all applicable then current codes and in accordance with the Mitigation Measures set forth in this EIR, which are designed to reduce the exposure of people or structures to substantial risk of loss, injury, or death related to geological conditions or seismic events. Therefore, Project impacts will be mitigated to a less than significant level. Current building codes and regulations will apply to all present and reasonably foreseeable future projects, which could also be subject to even more rigorous requirements. Therefore, the Project—in combination with past, present, and reasonably foreseeable future projects—will not result in a cumulatively significant impact by exposing people or structures to risks related to geologic hazards, soils, or seismic conditions.

The Project's compliance with the then current CBC, City building code requirements, and General Plan policies will ensure that geology and soil impacts will be less than significant. As such, potential impacts will be reduced to a less than significant level with implementation of applicable standard engineering practices and construction requirements. The Project's incremental contribution to cumulative geotechnical and seismic impacts will be less than significant. None of the Project characteristics will affect or influence the geotechnical hazards for off-site development. Similarly, the cumulative projects, which will be required to comply with the CBC, City building code requirements, and General Plan policies, are not expected to have an adverse impact on the Project. For these reasons, no significant cumulative geotechnical impacts will occur for the Project.

Furthermore, the original Murrieta Hills Specific Plan was approved by the City of Murrieta in 1995 (*Specific Plan No. SPM-4, City Council Resolution No. 95-353*). The Project amends Specific Plan SPM-4 by reducing the number of dwelling units approved under Specific Plan No. SPM-4 from 1,585 to 750. The City of Murrieta GP 2035 Final EIR addresses cumulative impacts of City buildout, inclusive of the Project. Per the Final EIR, buildout of the Murrieta GP would result in a less than significant impact on geologic and soil resources following adherence to and/or compliance with the existing regulatory framework, Murrieta GP goals and policies, and mitigation measures. Similarly, regional planning documents such as the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), addresses cumulative impacts of County buildout inclusive of the Project. With implementation of Riverside GP policies, mitigation measures, and existing regulations and requirements, geological and soil resource impacts would be avoided or minimized to a less than significant impact. The Project's incremental effects involving geology and soils, combined with those of the cumulative projects, are not considered cumulatively considerable.

4.6.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable geology and soils impacts have been identified for either the construction or operation phases of the Project.

4.6.8 REFERENCES

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4.7 GREENHOUSE GAS EMISSIONS

4.7.1 INTRODUCTION

This section examines the existing setting of the Murrieta Hills Specific Plan Amendment (MHSPA or Project) as it relates to greenhouse gas (GHG) emissions, identifies associated regulatory conditions and requirements, and presents the criteria used to evaluate potential impacts related to GHG upon implementation of the Project. Information given in this section is based on resource information obtained from available public resources including, but not limited to, the *City of Murrieta General Plan 2035* (Murrieta GP), South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP), and the Southern California Association of Governments (SCAG) *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). Detailed GHG calculations are provided in Appendix 9.2.1, *Air Quality/Greenhouse Gas Assessment for the Murrieta Hills Specific Plan Amendment* (Appendix A – Air Quality/Greenhouse Gas/HRA Data). Appendix 9.2.2 includes updated modeling data for revised grading construction quantities.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

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

Analysis of area cumulative impacts is also included in the discussion portions of this section. As will be demonstrated in Section 4.7.5, *Impacts and Mitigation Measures* below, impacts will be significant and unavoidable even with implementation of reasonably feasible mitigation measures.

The purpose of this GHG Emissions assessment is to examine potential short- and long-term GHG emissions impacts resulting from implementation of the Project.

Note that the air quality/greenhouse gas assessment technical report for this Project (Appendix 9.2.1) analyzed two alternatives. Alternative 1 (Originally Proposed Project) would include 578 single-family units and 172 multi-family units, with 346,302 square feet of commercial retail. Alternative 2 (Environmentally Preferred Alternative) would have fewer single-family units (557 total), more multi-family units (193 total); and less commercial square footage (222,156 square feet) than Alternative 1. Analyses and data presented in this section are for Alternative 2.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity*

Map. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.7.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

SOUTH COAST AIR BASIN

The California Air Resources Board (CARB) geographically divides the State into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The State is currently divided into 15 air basins.[2] The Project site lies along the southern portion of the South Coast Air Basin (SCAB). The SCAB is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The SCAB's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

As a part of the South Coast Air Basin, the South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban (non-desert) portions of Los Angeles, Riverside and San Bernardino counties. The SCAQMD is responsible for controlling emissions primarily from stationary sources of air pollution, and setting GHG significance thresholds. The SCAQMD has divided the SCAB into air monitoring areas and maintains a network of air quality monitoring stations located throughout the SCAB. The Project site is located within Source Receptor Area (SRA) 26, Temecula Valley.

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] CARB (2014). *California Air Basin Map*. Retrieved from CARB Website: https://ww3.arb.ca.gov/ei/maps/2017statemap/abmap.htm, Accessed April 25, 2019.

CLIMATE

The South Coast region, bounded by the Pacific Ocean on the west and mountains on the other three sides, generally forms a lowland coastal plain. On average, the South Coast region experiences more days of sunlight per year than any other major urban area in the country, except Phoenix. The climate, however, does vary from mild near the coast to extreme at inland locations. The average annual temperatures in the coastal area, which benefits from the marine influence, varies from lows in the mid-50's to highs in the mid-70's degrees Fahrenheit (°F). Annual precipitations in the coastal area ranges from 12 to 15 inches. Moving inland, temperatures increase and precipitation decreases, with average summertime highs in the mid to high 90's and maximum daily temperatures exceeding 100 °F. The mountains bounding the South Coast region to the north, east and west reach elevations of more than 10,000 feet and experience temperatures below freezing in the winter and precipitation in the form of snow.

Although the SCAB has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental tropical air is brought into the SCAB by winds blowing in from the southwest from Mexico, the ocean or maritime effect is dominant. Continental air (masses) originate over and are influenced by land while maritime air originates over water. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the SCAB. Precipitation in the SCAB is typically nine to fourteen inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the SCAB.

GLOBAL CLIMATE CHANGE

Climate change refers to any significant change in the measures of climate lasting for an extended period of time. Climate change encompasses major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land.[3]

The Intergovernmental Panel on Climate Change (IPCC) is considered to be the official advisory body to the world's governments on the state of the science of the climate change issue. The IPCC draws upon hundreds of the world's expert scientists as authors and thousands as expert reviewers.

The IPCC released the Summary for Policymakers for the Fifth Assessment in September 2013. The report finds that evidence of warming is "unequivocal" and that it is "extremely likely" that human influence has been the dominant cause of that warming. Evidence backing up anthropogenic climate change includes increasing atmospheric carbon dioxide concentrations, rising air and ocean water temperatures, declines in the extent of arctic ice, and declining pH in ocean waters corresponding with man-made GHG emissions[4].

[3] U.S. EPA. (2017). *Climate Change: Basic Information*. Retrieved from U.S. EPA Website: https://19january2017snapshot.epa.gov/climatechange/climate-change-basic-information_.html. Accessed September 29, 2016.

[4] State of California Governor's Office of Planning & Research. (2019). *The Scientific Consensus*. Retrieved from OPR Website: http://opr.ca.gov/facts/scientific-consensus.html. Accessed June 5, 2019.

The IPCC also disclosed the following direct impacts of man-made climate change, including: higher maximum temperatures and more frequent hotter days; higher minimum temperatures and less frequent frost days; reduced diurnal temperature ranges; increases in heat index; and more frequent and severe weather episodes[5]. Other secondary impacts could include decreases in agricultural production and biodiversity, increases in warm climate diseases, and drastic habitat loss due to sea-level rise.

CARBON CYCLE AND GREENHOUSE EFFECT

The global carbon cycle is comprised of large carbon flows to and from various reservoirs (e.g., atmosphere, ocean, and biomass). Billions of tons of carbon are absorbed by oceans and living biomass (i.e., sinks), and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes (i.e., the net exchange) among these various reservoirs are roughly balanced.

When solar radiation extends to the Earth's surface, it can either be reflected back into space or absorbed by Earth. Once absorbed, the planet releases some of the energy back into the atmosphere in the form of longwave infrared radiation (i.e., heat). GHGs absorb energy, slowing or preventing the loss of heat to space. In this way, GHGs act like a blanket, making Earth warmer than it would otherwise be. This process is commonly known as the "greenhouse effect."[6] Through man-made activities such as fossil fuel combustion and other industrial processes, the increase in GHG emissions is outpacing the natural carbon sources and sinks, increasing the planet's greenhouse effect, and effectively disrupting this balance.

GLOBAL CLIMATE CHANGE GASES

GHGs trap heat in the atmosphere. GHGs are emitted by natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. The seven major GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), perfluorocarbon (PFCs) and water vapor. For information on other air pollutants, refer to Section 4.2, *Air Quality*.

The most abundant GHGs are water vapor and carbon dioxide (CO_2).[7] Many other trace gases have greater ability to absorb and re-radiate longwave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists from the IPCC have established a Global Warming Potential (GWP) value for each GHG based on its ability to absorb and re-radiate longwave radiation. The GWP of a GHG is determined using CO_2 as the reference gas with a GWP of 1. The GWP allows the comparison of the global warming impacts of different gases. More precisely, it is a measure of how much energy the emissions of one ton of a gas will absorb over a given period, relative to the emissions of one ton of CO_2. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that period. The period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG

[5] IPCC. (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[6] U.S. EPA. (2017). *Causes of Climate Change*. Retrieved from U.S. EPA Website: https://archive.epa.gov/epa/climate-change-science/causes-climate-change.html. Accessed June 5, 2019.

[7] U.S. EPA. (2019). *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017.* Retrieved from U.S. EPA Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017. Accessed September 20, 2019.

inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases.[8]

GHGs generated in the SCAB and their relative contribution to the overall warming effect are CO_2 (55 percent), CFCs (24 percent), methane (CH_4,15 percent), and nitrous oxide (N_2O, six percent).[9] Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, results from off-gassing associated with agricultural practices, landfills, and wastewater treatment. It is widely accepted that continued increases in GHGs will contribute to global climate change although there is uncertainty concerning the magnitude and timing of future emissions and the resultant warming trend. Human activities associated with transportation, industrial, electric power, commercial and residential fuel combustion, agriculture, high global warming potential gases, and recycling and waste sectors contribute to these GHGs. According to CARB, in 2016 transportation was 39 percent of the state's GHG emissions, followed by industrial at 21 percent and electric power at 16 percent. Between 2000 and 2016, the transportation sector remained the largest source of GHG emissions in the state. Emissions from transportation sources were relatively constant between 2002 and 2007, declined through 2013, then increased from 2014 to 2016. Emissions in industrial sector are driven by fuel combustion from sources such as refineries, oil and gas extraction, cement plants, and other stationary sources, as well as the portion of cogeneration emissions attributed to thermal energy output. Emissions from this sector showed a slight decrease in emissions in the last two years of the analysis (2014 – 2016). For electric power, the GHG emission inventory is divided into two broad categories: emissions from in-state power generation and emissions from imported electricity. In 2016, GHG emissions from the electric power sector declined by 18 percent compared to 2015. The overall decrease in carbon intensity of California's electricity generation is driven primarily by the large increase in renewable energy resources because of California's Renewable Portfolio Standard and the Cap-and-Trade Program. Incrementally higher energy efficiency standards keep electricity consumption from increasing despite a growing population and economy.[10]

GHGs include, but are not limited to, the following:

- **Water Vapor (H_2O)** has not received the scrutiny of other GHGs, but it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively. Water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.[11]

  The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to

[8] U.S. EPA. (2017). *Greenhouse Gas Emissions, Understanding Global Warming Potentials*. Retrieved from U.S. EPA Website: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials. Accessed June 5, 2019.

[9] SCAQMD. (2005). *Guidance Document of addressing for Addressing Air Quality Issues in General Plans and Local Planning*. Retrieved from AQMD Website: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4.

[10] CARB. (2018). *California Greenhouse Gas Emissions for 2000 to 2016, Trends of Emissions and Other Indicators*. Retrieved from ARB Website: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf.

[11] According to the National Oceanic and Atmospheric Administration (NOAA), water wapor is the most abundant GHG in the atmosphere. However, changes in its concentration is also considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is important to projecting future climate change, but as yet is still fairly poorly measured and understood (NOAA. (ND) Retrieved from NCDC Website: https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=watervapor. Accessed June 3, 2019).

atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- **Carbon Dioxide (CO_2)** is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of CO_2 in the atmosphere has increased 45 percent[12]. Carbon dioxide is the most widely emitted GHG and has a GWP of 1.

- **Methane (CH_4)** has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas and mining coal have added to the atmospheric concentration of methane. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation (the digestive process in animals with a rumen, typically cattle, causing methane gas). Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 28.

- **Nitrous Oxide (N_2O)** is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production (for the industrial production of nylon), and nitric acid production (for rocket fuel, woodworking, and as a chemical reagent). The GWP of nitrous oxide is 265.

- **Hydrofluorocarbons (HFCs)** are typically used as refrigerants, aerosol propellants, solvents and fire retardants. The major emissions source of HFCs is from their use as refrigerants in air conditioning systems in both vehicles and buildings. HFCs were developed as a replacement for chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). The use of HFCs is increasing, as the continued phase-out of CFCs and HCFCs gains momentum. The GWP of HFCs range from 4 for HFC-161 to 12,400 for HFC-23.[13] HFCs are referred to as a high-GWP gas because, for a given amount of mass, they trap substantially more heat than CO_2.

- **Perfluorocarbons (PFCs)** are compounds produced as a by-product of industrial processes associated with aluminum production and the manufacturing of semiconductors. Like HFCs, PFCs generally have long atmospheric lifetimes and high GWP of approximately 6,630 for PFC-14 to 11,100 for PFC-116.[14]

- **Sulfur hexafluoride (SF_6)** is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,500. However, its global warming contribution is not as high as the GWP would indicate due

[12] U.S. EPA. (2019). *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017*. Retrieved from U.S. EPA Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017. Accessed September 20, 2019.
[13] IPCC. (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
[14] Ibid.

to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm], respectively)[15].

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors; therefore, their gradual phase-out is currently in effect. The following is a listing of these compounds:

- **Hydrochlorofluorocarbons (HCFCs)** are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are refrigerant products and air conditioning systems. The Montreal Protocol on Substances that Deplete the Ozone Layer phased out the production of HCFCs in 1987.[16] The United States is scheduled to achieve a 100 percent reduction by 2030. The GWPs of HCFCs range from 59 for HCFC-122 to 1,980 for HCFC-142b.[17]

- **1,1,1 trichloroethane** or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 110 times that of CO_2.[18]

- **Chlorofluorocarbons (CFCs)** are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were part of the U.S. Environmental Protection Agency's (EPA) Final Rule (57 FR 3374) to phase out O_3 depleting substances. CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,600 for CFC 11 to 14,000 for CFC 13.[19]

- **Nitrogen Trifluoride (NF_3)** was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It is an inorganic nitrogen-fluorine compound that acts as a replacement for PFCs. NF_3 has a GWP of 17,200.

- **Aerosols** are tiny particles suspended in the air, both natural and industrial, including sea-salt, mineral dust, ash, soot, sulphates, nitrates, and black carbon. Aerosols directly influence climate through scattering and absorbing radiation. However, unlike many GHGs, aerosols are not distributed evenly around the planet, so their impacts are most strongly felt on a regional scale.

- **Black Carbon** is a form of particulate matter (PM) and behaves differently than GHGs. Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the strongest light-absorbing component of PM emitted from burning

[15] Ibid.

[16] Under the original Montreal Protocol agreement (1987), developed countries were required to begin phasing out CFCs in 1993 and achieve a 20 percent reduction relative to 1986 consumption levels by 1994 and a 50 percent reduction by 1998. Additionally, developed countries were required to freeze their production and consumption of halons relative to their 1986 levels.

[17] U.S. EPA. (2018). *Ozone Depleting Substances.* Retrieved from U.S. EPA Website: https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances. Accessed June 3, 2019.

[18] Ibid and https://www.epa.gov/ods-phaseout/what-phaseout-ozone-depleting-substances. EPA regulations issued under Sections 601–607 of the Clean Air Act phase out the production and import of ozone-depleting substances (ODS), consistent with the schedules developed under the Montreal Protocol. In stages, the U.S. phaseout has reduced the amount of ODS that may be legally produced or imported into the country. The Parties to the Montreal Protocol have changed the phaseout schedule over time through adjustments and amendments. U.S. EPA has accelerated the phaseout in the U.S. under its Clean Air Act authority.

[19] U.S. EPA. (2010). *Class I Ozone Depleting Substances.* Retrieved from U.S. EPA Website: http://www.epa.gov/ozone/ods.html. Accessed December 6, 2017.

fuels such as coal, diesel, and biomass. It does not become well-mixed in the atmosphere; particles remain suspended in the air until they settle back on the surface, become washed out by rain, or contribute to cloud formation. The average atmospheric lifetime of a single black carbon particle is only two or three weeks. Black carbon is not one of the climate pollutants originally included in international climate frameworks, and it is not included in California's inventory. California has already cut anthropogenic black carbon emissions by over 90 percent since the 1960s, and existing measures are projected to cut mobile source emissions by 75 percent and total anthropogenic emissions by nearly 60 percent between 2000 and 2020.[20]

- **Ozone (O_3)** is a short-lived climate pollutant (SLCP) as well as a regional ground-level air pollutant. Tropospheric ozone is not emitted directly into the atmosphere, but rather formed by photochemical reactions. Its average atmospheric lifetime of a few weeks produces a global distribution highly variable by season, altitude, and location. The radiative forcing of tropospheric ozone is primarily attributed to emissions of methane, but also to carbon monoxide, volatile organics, and nitrogen oxides that eventually form ozone. The GWP for O_3 is included as an indirect effect of methane due to the production of tropospheric ozone and stratospheric water vapor.

- **Volatile Organic Compounds (VOC)** are hydrocarbon compounds that exist in the ambient air. VOC contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOC often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

- **Oxides of Nitrogen (NO_X)** are a family of gaseous nitrogen compounds and a precursor to the formation of ozone and particulate matter (PM). Nitrogen dioxide (NO_2), a major component of NO_X, is a reddish-brown gas that is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

- **Sulfur Dioxide (SO_2)** is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended SO_2 particles contribute to the poor visibility. These SO_2 particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

- **Particulate Matter**, also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

[20] CARB. (2017). *Short-Lived Climate Pollutant Reduction Strategy*. Retrieved from CARB Website: https://ww3.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf. Accessed September 20, 2019.

- "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5}$- PM_{10} are deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood, and other hydrocarbons. while UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

POTENTIAL EFFECTS OF CLIMATE CHANGE

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The IPCC's 2014 Synthesis Report indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels.[21]

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt

[21] IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.* Retrieved from IPCC Website: https://www.ipcc.ch/report/ar5/syr/. Accessed September 20, 2019.

and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later.[22] A brief summary of current and future climate change impacts to resource areas in California, as discussed in Safeguarding California: Reducing Climate Risk (California Natural Resources Agency [CNRA], 2014), is provided below.

Agriculture. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events; significant shifts in water availability and water quality; changes in pollinator lifecycles; temperature fluctuations; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.

Biodiversity and Habitat. Specific climate change challenges to biodiversity and habitat include species migration, range shift, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss occurs).

Energy. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea-level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea-level rise and extreme storm events.

Forestry. The most significant climate change-related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption.

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions, and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities.

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the 21st century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heatwaves is likely to increase the risk of mortality due to heat-related illness, as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies.

[22] California EPA. (2010). *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*.

Transportation. The transportation industry is vulnerable to climate change risks, including sea-level rise and erosion, which threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of people and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the wintertime. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence.

In March 2016, CNRA released *Safeguarding California: Implementation Action Plans*, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action.[23] Additionally, in May 2017, CNRA released the draft *Safeguarding California Plan: 2017 Update*, which is a survey of current programmatic responses for climate change and contains recommendations for further actions.[24]

The CNRA released *Safeguarding California Plan: 2018 Update* in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies.[25]

4.7.3 REGULATORY FRAMEWORK

INTERNATIONAL

The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol governs compounds that deplete ozone in the stratosphere CFCs, halons, carbon tetrachloride, and methyl chloroform. The Protocol provided that these compounds were to be phased out by 2000 (2005 for methyl chloroform). In 1988, the United Nations (UN) and the World Meteorological Organization established the IPCC to assess "the scientific, technical and socio-economic information

[23] CNRA. (2016). *Safeguarding California: Implementation Action Plans*. Retrieved from CNRA Website: http://resources.ca.gov/docs/climate/safeguarding/Safeguarding%20California-Implementation%20Action%20Plans.pdf. Accessed September 20, 2019.
[24] CNRA. (2017). *Safeguarding California Plan: 2017 Update*. Retrieved from CNRA Website: http://resources.ca.gov/wp-content/uploads/2017/05/DRAFT-Safeguarding-California-Plan-2017-Update.pdf.
[25] CNRA. (2018). *Safeguarding California Plan: 2018 Update*. Retrieved from CNRA Website: http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf.

relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation."[26]

The Kyoto Protocol, adopted in 1997, is an international treaty that extended the UN Framework Convention on Climate Change (UNFCCC) of 1992. This treaty committed state parties to reduce greenhouse gas emissions, in efforts to reduce the onset of global warming. The Kyoto Protocol applies to the six main greenhouse gasses: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.

In August 2007, the UNFCCC led to the official recognition that global emissions of GHGs must be reduced. According to the "Ad Hoc Working Group on Further Commitments of Annex I Parties under the Kyoto Protocol," avoiding the most catastrophic events forecast by the IPCC would entail emissions reductions by industrialized countries in the range of 24 to 40 percent below 1990 levels. Because of the Kyoto Protocol's Clean Development Mechanism, which gives industrialized countries credit for financing emissions-reducing projects in developing countries, such an emissions goal in industrialized countries could ultimately spur efforts to cut emissions in developing countries as well.[27] As one of the actions of the UNFCCC, the Paris Agreement is an international accord to adopt green energy sources, cut down on climate change emissions and limit the rise of global temperatures while also cooperating to adapt with the impact of climate change, with enhanced support to assist developing countries to do so.

FEDERAL

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

[26] IPCC. (1998). *Principles Governing IPCC Work*. Retrieved from IPCC Website: https://www.ipcc.ch/site/assets/uploads/2018/09/ipcc-principles.pdf. Accessed September 20, 2019.

[27] UN Framework Convention on Climate Change. (2007). *Press Release – Vienna UN Conference Shows Consensus on Key Building Blocks for Effective International Response to Climate Change*. Retrieved from UNFCCC Website: https://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/20070831_vienna_closing_press_release.pdf.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. EPA authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the U.S. EPA's assessment of the scientific evidence that form the basis for the U.S. EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, the George W. Bush Administration issued Executive Order (EO) 13432 in 2007 directing the U.S. EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the U.S. EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, U.S. EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 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. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baseline.

In August 2016, the U.S. EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, the President and the U.S. EPA stated their intent to halt various federal regulatory activities to reduce GHG emission, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are currently speculative.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO_2, N_2O, and CH_4.

STATE

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring, and that there is a real potential for severe adverse environmental, social, and economic effects in the long term. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Executive Order S-1-07 proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The EO directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the EO, the secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea-level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in the State of California.

Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, EO S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly-owned electricity retailers.

Executive Order S-20-04, the California Green Building Initiative, (signed into law on December 14, 2004), establishes a goal of reducing energy use in State-owned buildings by 20 percent from a 2003 baseline by 2015. It also encourages the private commercial sector to set the same goal. The initiative places the California Energy Commission (CEC) in charge of developing a building efficiency benchmarking system, commissioning and retro-commissioning (commissioning for existing commercial buildings) guidelines and developing and refining building energy efficiency standards under Title 24 to meet this goal.

Executive Order S-21-09, 33 percent Renewable Energy for California, directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon Senate Bill (SB) 1078 (2002) which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006) which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2e ($MMTCO_2e$). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by EO S-3-05. The EO also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate

change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-16-12 pushes the state toward the integration of zero-emission vehicles (ZEVs) into the mainstream. It directs the state toward establishing an infrastructure that can support increased public and private sector ZEVs. Additionally, it directs state agencies to replace at least ten percent of fleet vehicle purchases with ZEVs by 2015, and at least 25 percent of fleet vehicle purchases with ZEVs by 2020.

Executive Order B-29-15 directs the state to reduce urban potable water use by 25 percent by February 28, 2016, as compared with 2013.

Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The EO requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The EO also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500-38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

CARB Scoping Plan

On December 11, 2008, CARB adopted its original Scoping Plan, as required by AB 32, to reach 1990 levels of GHGs by 2020. CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual")[28]. The Scoping Plan evaluates opportunities for sector-specific reductions; integrates early actions by CARB and the State's Climate Action Team and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the adopted role of a cap-and-trade program.[29]

[28] CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[29] The Climate Action Team, led by the secretary of the California EPA, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering then-current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 $MMTCO_2e$ to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The 2014 update included the most recent science related to climate change and identify actions California has taken to reduce GHG emissions. In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment. The Second Update sets forth CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below). The Second Update was approved by CARB's Governing Board on December 14, 2017. The 2017 Scoping Plan Update builds on the actions of the previous plans and takes aim at the 2030 target established by SB 32.

CARB's 2017 Scoping Plan Update contains the following goals:

1. SB 350
    - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
    - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
    - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
    - Maintaining existing GHG standards for light- and heavy-duty vehicles.
    - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
    - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
    - Improve freight system efficiency.
    - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
    - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
    - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
    - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.

6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - CARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements.
8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Senate Bill 32, which was signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in EO B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. As described above, on December 14, 2017, CARB adopted a second update to the Scoping Plan[30]. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by EO B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other federal actions.

Cap-and-Trade Program. Pursuant to the recommendations in the initial CARB Scoping Plan, California developed a Cap-and-Trade program that links with other Western Climate Initiative partner programs to create a regional market system. The California Cap-and-Trade program caps GHG emissions and requires the purchase of emission allowances for covered activities. The Cap-and-Trade program is designed to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and will decline over time, achieving GHG emission reductions throughout the program's duration. The passage of AB 398 in July 2017 extended the duration of the Cap-and-Trade program from 2020 to 2030.

CARB adopted the latest Scoping Plan in December 2017. The plan sets forth measures to reduce GHG emissions to achieve State GHG emission reduction targets for 2030 as prescribed by statute, as well as 2050 targets set forth in EOs issued by the California governor's office. The Cap-and-Trade program is included in the 2017 Scoping Plan, without a termination date of 2030. Based on CARB's expert opinion that specific statutory authorization for a Cap-and-Trade program is not required, the inclusion of a

[30] CARB. (2017). *California's 2017 Climate Change Scoping Plan.* Retrieved from CARB Website: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed November 13, 2018.

Cap-and-Trade program through 2050 in the 2017 Scoping Plan, and other relevant climate laws, regulations, and policies, it is likely the Cap-and-Trade program will continue beyond 2030.

Under the Cap-and-Trade program, covered entities that emit more than 25,000 metric tons CO_2e per year must comply with Program requirements. Triggering of the 25,000 metric tons CO_2e per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of GHG Emissions (Mandatory Reporting Rule or "MRR"). CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. Covered entities are allocated free allowances in whole or part (if eligible), and may buy allowances at auction, purchase allowances from others, or purchase offset credits.

The Cap-and-Trade program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade program assures that California will meet its 2020 GHG emissions reduction mandate.

The Cap-and-Trade program will achieve aggregate, rather than site-specific or project-level, GHG emissions reductions. Also, due to the regulatory framework adopted by CARB in AB 32, the reductions attributed to the Cap-and-Trade program can change over time depending on the state's emissions forecasts and the effectiveness of direct regulatory measures. As of January 1, 2015, the Cap-and-Trade program covered approximately 85 percent of California's GHG emissions. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. The Cap-and-Trade program was extended in 2015 to cover combustion of fossil fuels including transportation fuels used in California. Accordingly, GHG emissions associated with the electricity usage and mobile sources of most projects that are subject to California Environmental Quality Act (CEQA) are covered by the Cap-and-Trade program.

Assembly Bill 197 requires CARB to make available, and update at least annually, on its website GHG emissions, criteria pollutants, and toxic air contaminants for each facility that reports to the state board and air districts.

Assembly Bill 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty weight classes for passenger vehicles (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily to transport people), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. When fully phased in, the near-term standards will result in a reduction

of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30 percent.

Assembly Bill 3018 established the Green Collar Jobs Council (GCJC) under the California Workforce Investment Board (CWIB). The GCJC will develop a comprehensive approach to address California's emerging workforce needs associated with the emerging green economy. This bill will ignite the development of job training programs in the clean and green technology sectors.

Senate Bill 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or their effects), as required by CEQA.

OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance as described in CEQA Guidelines Section 15064.7 that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administration Law approved the CEQA Guidelines Amendments and filed them with the Secretary of State for inclusion in the California Code of Regulations. The CEQA Guidelines Amendments became effective on March 18, 2010.

Senate Bill 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

Senate Bills 1078 and 107 (Chapter 516, Statutes of 2002) require retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) accelerated the target date of the 20 percent mandate to 2010 instead of 2017. These mandates apply directly to investor-owned utilities.

Senate Bill X1-2. On November 17, 2008, Governor Arnold Schwarzenegger signed EO S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. EO S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load-serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 (2011) codified the 33 percent by 2020 goal.

Senate Bill 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to California, including imported electricity, must be generated by plants that meet the standards set by CPUC and CEC.

Senate Bill 350 (Chapter 547, Statutes of 2015), signed into law on October 7, 2015, SB 350 implements the goals of EO B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 25 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

Assembly Bill 398. Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

Senate Bill 150. Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

Senate Bill 100 (Chapter 312, Statutes of 2018), signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Assembly Bill 1470. The California Solar Water Heating and Efficiency Act of 2007 created a 10-year program aimed at installing 200,000 solar water heaters in homes and businesses using a $250 million

fund. The law authorizes the CEC to impose the surcharge at a level that is necessary to meet the goal. The surcharge will be applied to natural gas consumption on a per British thermal unit (Btu) basis and is estimated that it will cost the average residential natural gas user an additional 13 cents per month.

Assembly Bill 1496. Approved in 2015, AB 1496 requires CARB to undertake monitoring and measurements of high emission methane "hot spots"; conduct life-cycle GHG emissions analysis of natural gas produced and imported into California; review and assess the atmospheric reactivity of methane as a precursor to the formation of photochemical oxidant; and update relevant policies and programs to incorporate new information.

Assembly Bill 1109. The Lighting Efficiency and Toxic Reduction Act prohibits a person from manufacturing for sale in the state specified general purpose lights that contain levels of hazardous substances, as it requires the establishment of minimum energy efficiency standards for all general-purpose lights. The standards are structured to reduce average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018.

Assembly Bill 1236 requires all cities and counties to develop a streamlined permitting process for EV charging stations.

Assembly Bill 939 and Assembly Bill 341. AB 939 established an integrated waste management hierarchy to guide the Resources Recycling & Recovery (CalRecycle) (formerly the Integrated Waste Management Board) and local agencies in implementation of source reduction, recycling and composting, and environmentally safe transformation and land disposal. AB 939 authorized the CalRecycle to establish a 50 percent diversion goal of all solid waste. Assembly Bill 341 sets forth the requirements of the statewide mandatory commercial recycling program. AB 341 is designed to reduce GHG emissions by diverting waste from landfills and to reach California's recycling goal of 75 percent by the year 2020.

Senate Bill 605 required CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) by January 1, 2016. CARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinate with other state agencies and districts to develop measures. The Final Proposed Short-Lived Climate Pollutant Strategy was adopted on March 24, 2017.

Senate Bill 1383 establishes emissions reduction targets in a statewide effort to reduce emissions of SLCPs including methane. The law directs CalRecycle to adopt regulations and requirements to achieve a 50 percent reduction in organic waste disposal by 2020 and a 75 percent reduction by 2025. The law further requires that 20 percent of the amount of edible food currently disposed be recovered for human consumption by 2025.

Senate Bill 1 was signed into law on April 28, 2017 and invests $54 billion over the next decade to fix roads, freeways, and bridges in communities across California and puts more dollars toward transit and safety.

CARB Advanced Clean Car Program. Adopted by CARB in 2012, the Advanced Clean Cars Program was developed in coordination with the U.S. EPA and National Highway Traffic Safety Administration (NHTSA) to combine the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated

package of regulations. These regulations include the Low-Emission Vehicle III regulation for criteria (LEV III Criteria) and GHG (LEV III GHG) emissions, and a technology forcing mandate for zero-emission vehicles (ZEV).

2015 and 2016 State of the State Address. In his 2015 State of the State Address, then-Governor Jerry Brown indicated that the state is making progress toward meeting the AB 32 GHG reduction goals and outlined the following goals to achieve further reductions and achieve post 2020 goals:

- Increase from one-third to 50 percent our electricity derived from renewable sources;
- Reduce today's petroleum use in cars and trucks by up to 50 percent;
- Double the efficiency of existing buildings and make heating fuels cleaner.
- Reduce the release of methane, black carbon and other potent pollutants across industries.
- Manage farm and rangelands, forests and wetlands so they can store carbon.

The 2016 State of the State Address also referenced the potential impacts of climate change and reinforced California's commitment to bring annual per capita GHG emissions down to two tons per person.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. The appliance efficiency regulations (CCR Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficient technologies and methods. Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design,

energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017. Updates to the 2016 CALGreen Code will take effect on January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

REGIONAL

Western Riverside Council of Governments Subregional Climate Action Plan

The Western Riverside Council of Governments (WRCOG) worked with twelve cities to develop a Subregional Climate Action Plan (CAP), which sets forth a subregional emissions reduction target, emissions reduction measures, and action steps to assist each community to demonstrate consistency with AB 32 and SB 32. WRCOG's CAP was adopted in June 2014. Each participating municipality is responsible for its own stand-alone CEQA documentation, local adoption, and determining and employing a CEQA appropriate GHG threshold. The City of Murrieta did not participate in the WRCOG CAP because it adopted a City-specific Climate Action Plan in 2011.

County of Riverside Climate Action Plan

The Riverside County Board of Supervisors adopted the County's Climate Action Plan on December 8, 2015 and it was subsequently updated in July 2018. The CAP was developed to be consistent with and complementary to the GHG emissions reduction efforts being conducted by the State of California. The CAP creates a GHG emissions baseline from which to benchmark GHG reductions, provides a guide to development, enhancement, and implementation of actions that reduce GHG emissions, and is part of the planning process for future development projects within unincorporated areas of the County.

As such the County's Climate Action Plan does not represent an appropriate planning document for projects within the City of Murrieta, and its policies and analysis are not applicable to the proposed project; but does serve as an example of how a local jurisdiction is addressing compliance with State policies and regulations regarding GHG emissions.

LOCAL

City of Murrieta

MURRIETA GENERAL PLAN

The City adopted the *Murrieta General Plan 2035*[31] (Murrieta GP) on July 19, 2011. The Murrieta GP provides a foundation for City policies and actions. It guides both the physical development of Murrieta and the provision of public infrastructure and services. This Murrieta GP places particular emphasis on economic development and keeps Murrieta in front of current policy topics, including sustainability and health.

[31] City of Murrieta. (2011). *Murrieta General Plan 2035*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/303/General-Plan-2035. Accessed September 11, 2019.

CLIMATE ACTION PLAN

The City adopted a *Climate Action Plan*[32] (CAP) on July 19, 2011, that provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. The CAP recommends GHG emission targets that are consistent with the reduction targets of the State of California and presents several strategies that will make it possible for the City to meet the targets. The purpose of the CAP is to guide the development, enhancement, and ultimately the implementation of actions that will reduce Murrieta's GHG emissions by 15 percent below 2009 levels by 2020. The CAP was prepared concurrently with the General Plan and uses applicable General Plan Goals and Policies as the Climate Action Strategies and Measures to meet the emissions reduction target.

4.7.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

CEQA THRESHOLDS

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (see Impact 4.7-1); or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (see Impact 4.7-2).

Based on these standards and thresholds, the effects of the Project have been categorized as a "significant and unavoidable impact." Mitigation measures are recommended for significant impacts.

GREENHOUSE GAS EMISSIONS THRESHOLDS

The City of Murrieta has adopted a CAP to assist the City in reducing GHG emissions. One of the primary uses for a CAP is to establish significance thresholds for reviewing projects under CEQA. When determining if a project is consistent with the CAP, the City must consider the following:

- The extent to which the Project supports or includes applicable strategies and measures or advances the actions identified in the CAP;
- The consistency of the Project with the Murrieta GP population growth projections, which are the basis of the GHG emissions and inventory projections;
- The consistency of the Project with the emission reduction targets set by the CAP; and
- The extent the Project interferes with implementation of CAP strategies, measures, or actions.

The City of Murrieta CAP does not include numerical thresholds for GHG. Additionally, as described above, thresholds identified in the County of Riverside and WRCOG CAPs are specific to the unincorporated County and WRCOG member agencies, respectively. As such, County and WRCOG thresholds do not apply.

[32] City of Murrieta (2011). *Climate Action Plan*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/806/P---Climate-Action-Plan-PDF. Accessed September 11, 2019.

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the Lead Agency.

The Working Group's efficiency-based thresholds consist of 4.6 $MTCO_2e$ per service population per year (SP/yr) to meet 2020 reduction targets and 3.0 $MTCO_2e$/SP/yr to meet 2035 reduction targets. The efficiency-based thresholds use the GHG reduction target for the land use sector divided by population and employment (land use sector employment only). These thresholds were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provides guidance to CEQA practitioners in determining whether GHG emissions from a proposed project are significant.

It should be noted that although the thresholds have not been formally adopted by the SCAQMD, these thresholds are substantiated in the *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (dated October 2008) prepared by the SCAQMD as well as the SCAQMD CEQA Significance Threshold Stakeholder Working Group meetings. Further, the efficiency-based thresholds developed by SCAQMD are consistent with similar thresholds developed by the Bay Area Quality Management District, which has proposed a project-level efficiency threshold of 4.6 $MTCO_2e$/SP for land use projects.[33] Accordingly, these recommendations represent the best available science on the subject of what constitutes a significant GHG effect on climate change for this project.

Therefore, thresholds for this analysis are based on SCAQMD's proposed interim GHG thresholds. Pursuant to CEQA Guidelines Section 15064.7, when adopting thresholds of significance, a Lead Agency may consider thresholds previously adopted or recommended by other public agencies or recommended by experts, provided the decision is supported by substantial evidence.

There is no adopted threshold of significance for construction-related GHG emissions. Construction emissions should be amortized over an anticipated 30-year structure lifetime[34] and added to the operational emissions to provide a complete average annual emissions estimate[35]. Best management practices should be incorporated into construction to reduce GHG emissions as feasible and applicable.

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning GHG emissions. In addition to PDFs, this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory

[33] See Bay Area Air Quality Management District CEQA Guidelines May 2017, p. D-22, finding "[t]his efficiency-based threshold reflects very GHG-efficient projects.

[34] The project lifetime is based on the standard 30-year assumption of the SCAQMD (SCAQMD, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13,* August 26, 2009).

[35] Ibid. The Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13 recommend amortizing the construction emissions over 30 years.

framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

PROJECT DESIGN FEATURES

- The Project has reduced GHG emissions by reducing the total development area in comparison to the currently approved Specific Plan, which reduces the area required for grading.
- The Project has reduced GHG emissions by substantially reducing the overall Project density from the currently approved Specific Plan (which allows up to 1,585 dwelling units and other uses).
- Commercial uses are proposed within proximity to the residential neighborhood, with pedestrian connections, thereby reducing vehicle miles traveled (VMT) to obtain goods and services.
- The Project would include amenities to serve future residents and reduce the need to travel off-site. This MHSPA describes a walkable community, with sidewalks that border all neighborhood streets, walking paths, and active recreational facilities, including dedicated neighborhood parks, an HOA community park, and a 4.6-acre public park.
- A series of small to medium size pocket parks are located strategically throughout the community and provide passive recreation opportunities within proximity to residences. Each park features a perimeter walking path and a turf area suitable for recreational use such as exercise activities, picnics, non-programmed play, and leashed dog walking.
- The compact layout of the land uses and circulation system, the emphasis on walkability with the provision of sidewalks and walking paths, and the inclusion of commercial uses to serve the residential development all serve to reduce reliance on automobiles and lessen vehicle emissions, which, in turn, helps to lessen GHG emissions.
- Bike lanes will be incorporated throughout the Project site.
- The land use plan preserves approximately 613 acres of MSHCP natural open space adjacent to the residential development and an approximately 37-acre linear natural park situated within the interior of the development.
- McElwain Road will be extended as part of the Project, thereby completing a connection between the cities of Murrieta and Menifee.
- Water conservation measures include efficient water delivery systems, water-efficient fixtures, low-water consumption landscaping, water-efficient irrigation systems, and water reuse where practical.
- All irrigation systems shall have automatic controllers that adjust frequency and duration of irrigation event in response to real-time weather conditions. Controllers shall be equipped with a rain shutoff device.
- Implementation of efficient and current low-impact development (LID) strategies, including landscaped median swales and continuous tree placement.

4.7.5 IMPACTS AND MITIGATION MEASURES

Impact 4.7-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Level of Significance: Significant and Unavoidable Impact

CONSTRUCTION AND OPERATIONS

Project-related GHG emissions would include emissions from direct and indirect emissions of CO_2, N_2O, and CH_4, and would not result in other GHGs that would facilitate a meaningful analysis. Other GHGs such as fluorinated gases are primarily associated with industrial processes, and the Project does not include an industrial component. Therefore, this analysis focuses on CO_2, N_2O, and CH_4 GHG emissions. Direct Project-related GHG emissions include emissions from construction activities, area sources, and Project generated vehicle traffic (i.e., mobile sources), while indirect sources include emissions from electricity consumption, water demand, and solid waste generation. Table 4.7-1: *Estimated Greenhouse Gas Emissions*, presents the estimated CO_2, N_2O, and CH_4 emissions of the Project.

Direct Project-Related Sources of Greenhouse Gases

- **Construction Emissions** are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.[36] Table 4.7-1 shows that the proposed Project construction would result in 625.85 $MTCO_2eq/yr$.
- **Area Source** emissions occur from hearths (i.e., fireplaces), architectural coatings, landscaping equipment, and consumer products. These emissions were calculated using CalEEMod and Project-specific land use data. The proposed Project would result in 166.97 $MTCO_2eq/yr$ of area source GHG emissions, per Table 4.7-1.
- **Mobile Source emissions**. The Project would result in 15,978.15 $MTCO_2eq/yr$. This is reduced from Alternative 1 (Originally Proposed Project) which would have resulted in 17,500.13 $MTCO_2eq/yr$.

[36] The Project lifetime is based on the standard 30-year assumption of the SCAQMD (http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-13/ghg-meeting-13-minutes.pdf?sfvrsn=2).

Table 4.7-1: Estimated Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total Metric Tons of CO_2eq
	Metric Tons/yr[1]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	
Direct Emissions						
Construction (amortized for 30 years)	623.45	0.10	2.40	0.00	0.00	625.85
Area Source	165.75	0.02	0.38	0.002	0.84	166.97
Mobile Source	15,961.59	0.66	16.56	0.00	0.00	15,978.15
Indirect Emissions						
Energy	4,006.65	0.14	3.5	0.05	13.6	4,023.75
Waste	197.95	11.69	292.5	0.00	0.00	490.42
Water Demand	436.48	2.15	53.8	0.06	15.9	506.16
Vegetation Land Use Change (Loss of Sequestration)[3]	--	--	--	--	--	68.96
Total Project-Related Emissions	**21,860.26 $MTCO_2eq/yr$**					
Project Service Population[4]	**5,898**					
$MTCO_2eq$ per Service Population	**3.7**					
2035 Service Population Threshold	**3.0**					
GHG Significance Threshold Exceeded?	**Yes**					

Notes:
1. Emissions calculated using CalEEMod.
2. CO_2 Equivalent values calculated using the EPA Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed December 2017.
3. Sequestration loss is annualized over a 20-year growing period per the CalEEMod User Guide.
4. Service population was calculated using census data (3.31 persons per household x 750 Project units) plus TIA data (trips generated by community retail divided by 2 to account for both customers and employees).

Source: Refer to Appendix 9.2.1 for assumptions used in this analysis.

Indirect Project-Related Sources of Greenhouse Gases

- **Energy Consumption**. The Project would result in 4,023.75 $MTCO_2eq/yr$; refer to Table 4.7-1. This is reduced from Alternative 1 (Originally Proposed Project) which would have resulted in 4,597.25 $MTCO_2eq/yr$.
- **Solid Waste** associated with operations of the Project would result in 490.42 $MTCO_2eq/yr$. This is reduced from Alternative 1 (Originally Proposed Project) which would have resulted in 563.49 $MTCO_2eq/yr$.
- **Water Demands** from the Project would result in 506.16 $MTCO_2eq/yr$ at Project buildout. This is reduced from Alternative 1 (Originally Proposed Project) which would have resulted in 576.98 $MTCO_2eq/yr$.

Total Project-Related Sources of Greenhouse Gases

Table 4.7-1 shows that the Project would result in approximately of 21,860.26 $MTCO_2eq/yr$. A project's service population emissions are determined by dividing the total project GHG emissions by the estimated service population. Service population is typically defined as residents and employees; customers and

visitors are not included in service population.[37] Accordingly, projects that serve high numbers of customers or visitors tend to exceed service population thresholds, even for highly efficient projects. Thus, use of a service population efficiency-based threshold for a project that includes commercial uses is conservative. The service population metric is derived from CARB's 2008 and 2017 Scoping Plans. The 2008 and 2017 Scoping Plans determined that based on the GHG emissions inventories for the state, people living in California generate approximately 14 tons of GHG emissions per capita and need to reduce GHG emissions to approximately 10 tons of GHG per capita to meet the 2020 GHG reduction target of AB 32.[38] Additionally, to meet post-2020 targets, per capita emissions would need to be to no more than six $MTCO_2e$ per capita by 2030.[39] The service population efficiency metric was developed to ensure that newer developments were not penalized by introducing "new emissions" and to encourage projects that are highly efficient with respect to GHG emissions. Use of an efficiency-based threshold (i.e., service population threshold) is appropriate for the Project because it measures the Project's emissions on a per service population basis to determine its overall GHG efficiency relative to regulatory GHG reduction goals, as opposed to applying a relatively arbitrary threshold limit that may not be well substantiated. As noted above, the 3.0 $MTCO_2eq$ per service population threshold is the most applicable threshold for the Project.

The Project's service population includes Project residents, commercial retail employees, and customers. Based on census data,[40] there is an average of 3.31 persons per household in Murrieta. Therefore, the Project's 750 residential units would house approximately 2,483 people. Based on the Project traffic study, the retail component of the Project would generate 6,830 daily vehicle trips which includes employees and customers. By dividing this number by two (to account for round trips), 3,415 vehicles would visit the Project's retail component each day. Conservatively assuming that each car contains only one person, the commercial area would serve 3,415 people. Therefore, the Project's service population is 5,898 (2,483 residents + 3,415 employees and customers). Dividing the Project's total emissions of 21,860.26 $MTCO_2eq/yr$ by the service population of 5,898, the Project emissions would equal 3.7 $MTCO_2eq/yr$ per service population, which is above the 3.0 threshold.

The Project would include additional energy efficiency measures such as the use of LED streetlights where streetlights are needed, low-intensity energy-conserving outdoor lighting, and photovoltaic solar systems will be required on roofs for the residential component. The Project would also incorporate drought-tolerant landscaping, and water-efficient irrigation controls. The Project would be constructed in accordance with the standards for high-efficiency water fixtures for indoor plumbing and water-efficient irrigation systems required in 2019 Title 24, Part 11 (CALGreen). The Project would also implement the energy efficiency standards of 2019 Title 24, Part 6 (Building Energy Efficiency Standards), which requires solar photovoltaic systems for new homes. The standards also require updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements that would cut

[37] CAPCOA. (2008). *CEQA & Climate Change*. Page 72. Retrieved from CAPCOA Website: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed October 13, 2019.
[38] CARB. (2010). *California's Climate Plan*. Retrieved from CARB Website: https://ww3.arb.ca.gov/cc/cleanenergy/clean_fs2.htm. Accessed October 13, 2019.
[39] CARB. (2017). *California's 2017 Climate Change Scoping Plan*. Page 99. Retrieved from CARB Website: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed October 13, 2019.
[40] U.S. Census Bureau. (2018). *Quick Facts*. Retrieved from USCB Website: https://www.census.gov/quickfacts/murrietacitycalifornia. Accessed December 6, 2017.

residential energy use by more than 50 percent. The standards also encourage demand-responsive technologies including battery storage and heat pump water heaters and improving the building's thermal envelope through high-performance attics, walls and windows to improve comfort and energy savings.[41] The Project would also comply with the appliance energy efficiency standards in Title 20 of the CCR. The Title 20 standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

The Project would improve the circulation network to enhance access between the Project and the surrounding areas. Improvements include the extension of McElwain Road from Keller Road to Linnel Lane, which will run generally parallel to I-215. Additional circulation improvements include improvements to Keller Road and the construction of an internal neighborhood roadway system.

As noted above, the MHSPA includes PDFs that maximize pedestrian access and amenities that would compliment the mix of uses. These features would minimize conflicts between pedestrians and vehicles, design an efficient circulation system to encourage pedestrian movement, create a community that is bicycle and pedestrian-friendly, have a flexible network to accommodate future transit service, and design a circulation system to preserve the site's most sensitive natural resources as open space, among others. As noted above, the compact layout of the land uses and circulation system, the emphasis on walkability with the provision of sidewalks and walking paths, and the inclusion of mixed-use and commercial uses to serve the residential development all serve to reduce reliance on automobiles and lessen vehicle emissions, which, in turn, helps to lessen GHG emissions.

At the state and global level, improvements in technology, policy, and social behavior can also influence and reduce operational emissions generated by a project. The state is currently on a pathway to achieving the Renewable Portfolio Standards goal of 33 percent renewables by 2020 and 60 percent renewables by 2030 per SB 100. Despite these goals, the majority of the Project's emissions would still be from mobile and energy sources. Future mobile source emissions are greatly dependent on changes in vehicle technology, fuels, and social behavior, which can be influenced by policies to varying degrees. Taking known future policies into account, CARB estimates that over 90 percent of future vehicles in Riverside County would still run on gasoline even with increased electric vehicle (EV) mode share.[42] This is assumed to also be applicable to the Murrieta vehicle fleet, absent data that may suggest otherwise. Due to these external factors, average emissions from transportation in 2050 would mostly still generate GHG emissions, but the quantity is uncertain in light of potential changes in technology and policy over the next 30 years.

Although the future transportation emissions generated by the Project may be uncertain, Mitigation Measure (MM) GHG-1 (see page 4.7-32), requires the Project Applicant to prepare a GHG Reduction Plan to implement all feasible GHG reduction measures. The GHG Reduction Plan will include requirements for EV chargers and a Transportation Demand Management (TDM) Plan to minimize vehicle trips and mobile emissions, as well as additional water efficiency measures.

As the Project primarily involves residential and commercial development, the majority of emissions (approximately 92 percent) would occur from mobile and energy sources. As noted above, energy and

[41] California Energy Commission. (2018). *2019 Building Energy Efficiency Standards Frequently Asked Questions.* Retrieved from CEC Website: https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.
[42] CARB. (2017). *EMFAC2017*. Retrieved from CARB Website: https://www.arb.ca.gov/emfac/2017/.

mobile sources are targeted by statewide measures such as low carbon fuels, cleaner vehicles, strategies to promote sustainable communities and improved transportation choices that result in reducing VMT, continued implementation of the Renewable Portfolio Standard (the target is now set at 60 percent renewables by 2030), and extension of the Cap-and-Trade program (requires reductions from industrial sources, energy generation, and fossil fuels). The Cap-and-Trade program covers approximately 85 percent of California's GHG emissions as of January 2015. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and will decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. The passage of AB 398 in July 2017 extended the duration of the Cap-and-Trade program from 2020 to 2030. With continued implementation of various statewide measures, the Project's operational energy and mobile source emissions will continue to decline in the future. With the variety of factors involved and without further action on the Project to reduce mobile source emissions, it is uncertain that the Project's GHG emissions could be reduced to a less than significant level. As shown in Table 4.7-1, overall Project emissions would remain above the 3.0 $MTCO_2eq/yr$ per service population threshold. Therefore, impacts in this regard would be significant and unavoidable.[43]

MITIGATION MEASURES

MM GHG-1: Prior to the issuance of Project permits, the Project Applicant shall prepare and implement a GHG Reduction Plan, to the satisfaction of the City, that includes the following list of GHG emissions reduction measures. Refinement of the estimated Project GHG emissions shall be completed as part of the GHG Reduction Plan in order to reflect the most current and accurate data available regarding the Project's estimated emissions (including emission rates). The Project Applicant may submit a report to the City that substantiates why specific measures are considered infeasible or at that point in time and identify alternate measures that would achieve equivalent reductions. Recommended measures for reducing operational GHG emissions are listed below.

Every five years, beginning one year after full operation of the first phase or subdivision until five years after the last certificate of occupancy of the last phase or subdivision is issued, the Project Applicant shall submit a GHG Emissions Reduction Accounting and Program Effectiveness Report for the Project. The report shall be submitted by December 31 of each reporting year. The report shall include annual GHG emissions for the developed and operational portion of the Project, whether the emissions meet the applicable GHG target, and if not, additional feasible measures that shall be implemented.

- **Non-Residential Electric Vehicle Charging.** Prior to the issuance of commercial or recreational building permits, the Project Applicant or its designee shall submit building design plans to the City that demonstrate that the parking areas for commercial and recreational buildings in the MHSPA area are equipped with EV charging stations that provide charging opportunities to at least 7.5 percent of the total number of required parking spaces. The EV charging stations shall achieve a similar or better functionality as a Level 2 charging station. In the event that the

[43] As discussed further in *Section 5, Alternatives to the Proposed Project*, the Project represents a substantial reduction in VMT compared to the land uses allowed in the currently approved Murrieta Hills Specific Plan No. SPM-4.

installed charging stations use more superior functionality/technology other than Level 2 charging stations, the parameters of the mitigation obligation (i.e., number of parking spaces served by EV charging stations) shall reflect the comparative equivalency of Level 2 charging stations to the installed charging stations on the basis of average charge rate per hour. For purposes of this equivalency demonstration, Level 2 charging stations shall be assumed to provide charging capabilities of 25 range-miles per hour.

- **Residential Electric Vehicle Charging.** Prior to the issuance of residential building permits, the Project Applicant or its designee shall submit building design plans to the City for review and approval, which demonstrate that each residence within the Murrieta Hills Specific Plan area subject to application of Title 24, Part 6, of the CCR shall be equipped with a minimum of one single-port EV charging station. Each charging station shall achieve a similar or better functionality as a Level 2 charging station.

- **Vehicle Trip Reduction.** Develop a qualifying Commute Trip Reduction (CTR)/TDM plan to reduce mobile GHG emissions for all uses prior to construction. The TDM plan shall be approved by the Development Services Director prior to the issuance of building permits and incorporated into the Project's Codes Covenants and Restrictions (CC&Rs). The TDM plan shall discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The following measures shall be incorporated into the TDM plan.

    - The Project Applicant shall consult with the local transit service provider on the need to provide infrastructure to connect the Project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site.

    - Non-Residential Uses. The portion of the TDM plan for non-residential uses shall include, but not be limited to the following potential measures: ride-matching assistance, preferential carpool parking, flexible work schedules for carpools, half-time transportation coordinators, providing a web site or message board for coordinating rides, designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles, and including bicycle end of trip facilities. This list may be updated as new methods become available. Verification of this measure shall occur prior to building permit issuance for the commercial l uses.

    - Residential Uses. Upon a residential dwelling being sold or offered for sale, the HOA shall notify and offer to the buyer or prospective buyer, as soon as it may be done, materials describing public transit, ridesharing, and nonmotorized commuting opportunities available in the vicinity of the Project. Such information shall be transmitted no later than the close of escrow. This information shall be submitted to the City of Murrieta Development Services Department for review and approval, prior to the issuance of the first certificate of occupancy. This

information shall be updated by the HOA and approved by the Development Services Department on an annual basis.

- **Water Efficiency.** Install water-efficient irrigation systems and landscape design including reduced turf. This measure shall be verified prior to building permit issuance. Measures to enhance water efficiency include but are not limited to (1) All irrigation systems shall have automatic controllers that adjust frequency and duration of irrigation event in response to real-time weather conditions. Controllers shall be equipped with a rain shutoff device and (2) Drip and/or bubbler irrigation will be used where appropriate. Turf areas suitable for recreational use such as exercise activities, picnics, non-programmed play, and leashed dog walking will be used in pocket parks.

- **Landscaping Equipment.** The Project's Master CC&Rs, and all residential sales contracts will include a disclosure recommending the use of electric, rather than gas-powered, landscaping equipment for all landscape and maintenance activities.

Impact 4.7-2: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Level of Significance: Significant and Unavoidable Impact

The City adopted a CAP on July 19, 2011 that provides a framework for reducing GHG emissions and managing resources to best prepare for climate change. The CAP recommends emission targets that are consistent with the reduction targets of the State of California. The purpose of the CAP is to guide the development, enhancement, and ultimately the implementation of actions that will reduce Murrieta's GHG emissions by 15 percent below existing levels. The CAP notes that projects that demonstrate consistency with the strategies, actions, and emission reduction targets contained in the CAP would have a less than significant impact on climate change. The CAP provides the following guidance to determine whether a project is consistent: (1) the extent to which the project supports or includes applicable strategies and measures, or advances the actions identified in the CAP; (2) the consistency of the project with the Murrieta GP Update population growth projections, which are the basis of the GHG emissions inventory projections; (3) the consistency of the project with the emission reduction targets set by the CAP; and (4) the extent to which the project would interfere with implementation of CAP strategies, measures, or actions.

The CAP implements policies that have been identified in the Land Use, Economic Development, Circulation, Infrastructure, Healthy Community, Conservation, Recreation and Open Space, and Air Quality Elements of the Murrieta GP. The CAP identifies key energy efficiency targets and separate associated goals, policies, and actions for community and municipal activities.

The Project proposes to incorporate several energy efficiency design features that are consistent with the CAP efficiency measures; refer to Section 4.7.4, above. Table 4.7-2: *Climate Action Plan Consistency*, discusses the Project's consistency with the applicable CAP policies. It should be noted that each CAP measure correlates with a Murrieta GP policy.

Table 4.7-2: Climate Action Plan Consistency

CAP Measure	Project Consistency
LU-1.6: Promote future patterns of development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities.	**Consistent**. The Project proposes development of an area located between Menifee, Murrieta and Wildomar and annexation into Murrieta. Project development will be located adjacent to I-215 and between existing residential communities.
LU-4.3: Locate multiple-family housing adjacent to jobs, retail, schools, open space, public transportation, and transportation corridors.	**Consistent**. As part of the mixed-used element, the Project proposes constructing multi-family residential adjacent to commercial land uses. Public transportation in the area is provided by Riverside Transportation Agency and is also located adjacent to the I-215 transportation corridor. MM GHG-1 (see page 4.7-32) would require a TDM plan that would facilitate access to transit.
AQ-4.4: Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.	**Consistent**. The Project includes a variety of housing types including multi-family residential and single-family residential with varying housing densities. The Project is near existing and future commercial and medical land uses.
CSV-12.1: Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Codes.	**Consistent**. The Project would be compliant with CALGreen energy efficiency requirements. In addition, this Project would comply with all state and local energy efficiency standards including the latest Title 24 energy standards (2016 at minimum) which represents a 28 percent reduction in energy consumption over the previous version (2013) of the energy standards. The 2019 version of the building code will go into effect on January 1, 2020 and will incorporate more stringent energy efficiency standards that the 2016 version. The most significant residential efficiency improvements address photovoltaic systems, walls/insulation, gas furnaces, hot water solar preheating, improved heating, ventilation, and air conditioning (HVAC), and lighting. Single-family homes built under the 2019 Energy Standards will use about seven percent less energy due to energy efficiency measures as compared to homes built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 Energy Standards will use an estimated 53 percent less energy than those under the 2016 Energy Standards.[44]
CSV-14.1: Ensure all applicable construction projects comply with the California State Green Building Standards Code	**Consistent**. The Project would be compliant with CALGreen energy efficiency requirements.
ROS-7.1: Preserve and enhance open space resources in Murrieta	**Consistent**. Of the total approximately 972 acres, the Project includes approximately 613 acres of MSHCP designated open space and an approximately 37-acre linear nature park.
ROS-7.2: Designate open space to preserve habitat and scenic views of natural areas.	**Consistent**. The Project includes approximately 613 acres of MSHCP designated open space and an approximately 37-acre linear nature park.
Source: City of Murrieta (2011). *Climate Action Plan*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/806/P---Climate-Action-Plan-PDF.	

[44] California Energy Commission. (2018). *2019 Building Energy Efficiency Standards Frequently Asked Questions*. Retrieved from CEC Website: https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.

As noted above, Project consistency with City population growth projections is one of the criteria for determining consistency with the City's CAP. Although the Project would directly and indirectly lead to increased population, housing and employment, this growth is planned growth. Additionally, the Project proposes fewer dwelling units and lower overall Project density than what is in the currently approved Specific Plan and regional growth forecasts. As discussed in Section 6.2.1 of this EIR, Project implementation would not conflict with City or regional population growth projections. As noted above in Table 4.7-2, the Project will adhere to CALGreen standards, will implement MM GHG-1 (see page 4.7-32) to further reduce vehicle emissions, and will be consistent with appropriate CAP measures. Therefore, the Project will be consistent with the emissions reduction targets set by the CAP.

The Project would achieve the current Building Energy Efficiency Standards and would be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water-efficient irrigation systems that would improve energy efficiency. The proposed buildings would comply with Title 24 Energy Efficiency standards. The Project would comply with SB X7-7, which requires California to achieve a 20 percent reduction in urban per capita water use by 2020 as well as implement PDFs for water conservation to achieve the City's water conservation goals.

Additionally, approximately 92 percent of the Project's emissions are from energy and mobile sources which would be further reduced by the 2017 Scoping Plan measures. including the reduction in the carbon content of fuels, CARB's advanced clean car program, CARB's mobile source strategy, fuel efficiency standards, cleaner technology, fleet turnover, continued implementation of the Renewable Portfolio Standard, and extension of the Cap-and-Trade program.

The City has no control over vehicle emissions (approximately 74 percent of the Project's total emissions). However, SCAG's 2016 RTP/SCS is also expected to help California reach its GHG reduction goals, with reductions in per capita transportation emissions of nine percent by 2020 and 16 percent by 2035.[45] As noted above, the Project would include mixed-use and commercial uses and amenities to serve future residents and reduce the need to travel off-site. This MHSPA describes a walkable community, with sidewalks that border all neighborhood streets, walking paths, and active recreational facilities, including dedicated neighborhood parks, an HOA community park, and parks within proximity to residences. The compact layout of the land uses and circulation system, the emphasis on walkability with the provision of sidewalks and walking paths, and the inclusion of commercial uses to serve the residential development all serve to reduce reliance on automobiles and reduce vehicle GHG emissions.

Appendix B, *Local Action,* of the 2017 CARB Scoping Plan lists potential actions that support the State's climate goals. However, the Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B) examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the Lead Agency.

The Project would include a number of the potential mitigation measures for construction and operation. For example, the Scoping Plan's construction measures include enforcing idling time restrictions on

[45] SCAG. (2016). *Final 2016–2040 RTP/SCS.* Page 153. Retrieved from SCAG Website: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 20, 2019.

construction vehicles and requiring construction vehicles to operate highest tier engines commercially available. These measures are consistent with the requirements in MM AQ-1 through MM AQ-12 (see Section 4.2, pages 4.2-34 through 4.2-37.

The Project would include a majority of the feasible operational mitigation measures listed in Appendix B as design features or mitigation (refer to MM GHG-1, see page 4.7-32). Some of the recommended operational measures would include electric vehicle (EV) charging stations, providing bicycle parking, creating on- and off-site safety improvements for bike, pedestrian, and transit connections, prohibiting wood-burning fireplaces, requiring solar panels, low-water landscaping, gas or electric outlets in residential backyards, energy-conserving appliances, and low-flow toilets and faucets. Additionally, through design features and MM GHG-1 (see page 4.7-32), this recommendation would be met.

As indicated above, GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes is derived from natural gas combustion. Therefore, energy-saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The Project will be required to comply with existing regulations, including applicable measures from the City's CAP and General Plan, or would be directly affected by the outcomes (vehicle trips and energy consumption would be less carbon-intensive due to statewide compliance with future low carbon fuel standard amendments and increasingly stringent Renewable Portfolio Standards). As such, the Project would not conflict with any other state-level regulations pertaining to GHGs.

Regarding goals for 2050 under EO S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the Project will comply with all applicable measures are enacted that State lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050.

As noted above, despite the implementation of MM GHG-1 (see page 4.7-32), PDFs, and compliance with all applicable regulations, it is uncertain that the Project's GHG emissions could be reduced below the efficiency metric threshold of 3.0 $MTCO_2eq/yr$ per service population. Therefore, despite consistency with the City's CAP measures and other applicable regional and statewide regulations, it is uncertain that the Project would meet the emission reduction targets set by the CAP. Impacts in this regard would be significant and unavoidable in this regard.

MITIGATION MEASURES

Refer to MM GHG-1 on page 4.7-32.

4.7.6 CUMULATIVE IMPACTS

As noted above, the increased concentration of GHGs in the atmosphere has been linked to global warming which can lead to climate change. Global climate change is, by nature, a cumulative impact; however, the project's effects on global climate change are being addressed within this EIR as project-specific impacts. GHG emissions have the potential to adversely affect the environment because they

contribute, on a cumulative basis, to global climate change.[46] Due to the global nature of the climate change problem, most projects will not generate GHG emissions that individually will cause a significant impact on global climate change.[47] Therefore, the analysis of a project's GHG impacts is typically not considered individually but is analyzed against the GHG emissions of existing and proposed projects within the region, State, and ultimately against global emissions and how the emissions can cumulatively affect global climate change. This concept is supported in the various case law and Office of Planning and Research and SCAQMD publications.[48]

The construction and operation of the Project would contribute to GHG emissions, exceeding the SCAQMD thresholds. Therefore, Project impacts of GHG emissions are analyzed on a cumulative basis. Please refer to Threshold 4.7-1. Although Project GHG emissions are significant, the Project density has been reduced to roughly 50 percent from the currently approved MHSP (refer to *Section 5, Alternatives to the Proposed Project* for further discussion). The reduction in total development area in comparison to the currently approved MHSP reduces overall GHG emissions. However, as noted above, Project emissions would exceed efficiency-based thresholds and potentially conflict with the emission reduction targets set by the CAP and other statewide plans for reducing GHG emissions. Therefore, the Project's contribution of GHG emissions would be cumulatively considerable.

4.7.7 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the Project, significant unavoidable impacts would occur in the following areas despite the implementation of the Mitigation Measures:

- **Project-Related GHG Emissions.** Despite implementation of MM GHG-1 (see page 4.7-32), the Project's GHG emissions would remain above SCAQMD thresholds, resulting in a significant and unavoidable impact.
- **GHG Plan Consistency.** Despite implementation of MM GHG-1 (see page 4.7-32), the Project's GHG emissions would potentially conflict with the City's ability to meet the emissions reductions targets established in the CAP, resulting in a significant and unavoidable impact.
- **Cumulative GHG Emissions.** Despite implementation of MM GHG-1 (see page 4.7-32), Project emissions would potentially conflict with the emission reduction targets set by the CAP and other statewide plans for reducing GHG emissions. Therefore, the Project's contribution of GHG emissions would be cumulatively considerable.

[46] CEQA Guidelines Section 15064.4(b) notes that "…a project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions."

[47] California Air Pollution Control Officers Association. (2008). *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*.

[48] California Governor's Office of Planning and Research. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review Technical Advisory*, June 2008; South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold,* October 2008; *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172, 1215-1217 [9th Cir. 2008].

4.7.8 REFERENCES

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California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March 2006.

City of Murrieta, *Climate Action Plan*, July 19, 2011.

City of Murrieta, *Murrieta General Plan 2035,* July 19, 2011.

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4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 INTRODUCTION

This section examines the existing conditions and environment concerning hazards and hazardous materials on the Murrieta Hills Specific Plan Amendment (MHSPA or Project) site. In accordance with the requirements of CEQA Appendix G, the following inquiries are made, analyzed and discussed in this section:

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

b) Would the Project create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

d) Would the 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?

e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

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

g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.8.5, *Impacts and Mitigation Measures* below, impacts will be less than significant with mitigation.

The environmental setting discussion is based largely on review of relevant documents and information including the *City of Murrieta General Plan 2035* (Murrieta GP) and Municipal Code (MC); the County of Riverside GP and Zoning Ordinance No. 348; review of aerial photographs and field observations of the area conducted by IWS Environmental, Inc. staff in 2006, 2008, and 2014 and Kimley-Horn staff in January 2019; and review of the Draft MHSPA along with Project renderings and maps. Other information in this section, including the regulatory framework, is derived from the various planning documents including the Project Description, the *Murrieta Hills Specific Plan Amendment*, County of Riverside GP, County of Riverside Zoning Ordinance No. 348, City of Menifee GP EIR, City of Murrieta GP, City of Murrieta MC, City of Menifee GP, City of Menifee MC, and pertinent State of California Building Codes.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.8.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

A Phase I Environmental Site Assessment (ESA) was completed by IWS Environmental, Inc. in 2006 and was revisited in March 2014, in accordance with the American Society for Testing and Materials (ASTM) Standard of Practice E 1527-05 (provided as Appendix 9.6.1). IWS Environmental conducted a physical inspection of the Project site on February 26, 2014 (Appendix 9.6.2). The following discussion summarizes the findings of the 2006 ESA and the February 26, 2014 physical site inspection completed by IWS Environmental. It should be noted that as part of the 2014 physical inspection of the Project site, no database records or regulatory agency files were obtained or reviewed as part of the assessment. Also, general field observations were conducted by Kimley-Horn personnel on January 10, 2019.

SITE HISTORY

Aerial photographs dating back to 1938, the earliest date available, of the Project site were used to determine the historic land use of the Project site and if there was any evidence of hazardous materials that may affect the environmental quality of the Project site. The aerial photographs were reviewed for

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

the following features: sumps, pits, ponds, lagoons, above ground tanks, landfills, collection of drums or containers, discoloration of soil, structures and general land use. The following Table 4.8-1, *Aerial Photograph Review Summary*, details the results of the aerial review as outlined in the ESA.

Table 4.8-1: Aerial Photograph Review Summary

Year	Photo Source	Land Use	Identifiable Features
1938	Flyer	Rural residential	Portions of the site appeared to be used for agricultural production including citrus trees and oat fields. A house and small structures were visible on the aerial.
1953	Pacific Air	Rural residential	The site appeared to be used for agricultural uses including fields of oats. It appears the house and small structures are still present. The citrus trees appear to be removed. A pond was also visible west of the house.
1967	Western	Rural residential	No significant changes from the 1953 aerial. Only a few more access roads cut into the northern portion of the site.
1980	AMI	Rural residential	Most of the agricultural areas previously farmed in the middle portion of the site do not appear to be farmed in this photo. Keller Road is visible in this photo. Increase in number of dirt roads/trails noted in middle portion of the site.
1989	Flyer, USGS	Rural residential	Site conditions are similar to the 1980 aerial photograph. Additional residences are visible north of the site.
1994*	Flyer, USGS	Nursery	Large areas in the center of the site have been cleared of vegetation. A nursery is present in the middle portion of the site. Continue agricultural use in the northeast corner of the site. Residential developments are now visible south of the site.
2002	USGS	Nursery	Site appeared to be similar as what is visible in the 1994 aerial

Source:
IWS Environmental. (2006). *Phase 1 Environmental Site Assessment*. Page 8. Westminster, CA: Jim Bunck. EIR Appendix 9.6.1.
* Aerial can be viewed in Appendix B of the Phase I ESA in Appendix 9.6.1

No sumps, pits, ponds, lagoons, above ground tanks, landfills, collection of drums or containers, or discoloration of soil was visible during the aerial imagery review. Residential and ancillary structures, and a pond was visible on the site.

RECORDS REVIEW

IWS Environmental, Inc. ran a computer database review (Environmental Data Resources, Inc. [EDR]) of the existing federal and state environmental databases per ASTM standards (E-1527-94) for environmental site assessments. The report examines data from all sites within a one-mile radius around the Project site. The full list of databases searched are in Appendix 9.6.1.

The subject property did not appear on the database reports as having underground storage tanks, a recorded spill or hazardous materials, or having been impacted by an off-site source of contamination. According to the 2006 database search, there was also no recorded industrial or business facilities within

the one-mile radius that use or generate hazardous materials and no recorded contaminated groundwater plumes were identified within a one-mile radius of the Project site. However, since the time of the database search, the Kaiser Permanente - Murrieta Medical Campus and Loma Linda University Center – Murrieta have been constructed east of I-215, within a one-mile buffer of the Project. Both facilities generate pharmaceutical waste and other medical-related waste. According to the CalEPA Regulated Site Portal, both facilities have had past violations; however, no compliance actions have been taken for either facility. Additionally, no National Priority List (NPL) or Superfund sites were located on or within a one-mile radius of the Project site. Furthermore, a search on the Department of Oil and Gas maps did not locate any oil wells within 1,000 feet of the Project site.

Records from the Riverside County Agricultural Commissioner (RCAC) were obtained via a written request to determine if any pesticides were used or applied to the Project site as part of previous farming practices. The records, which dated back to 2003, identified herbicides were consistently utilized on the northeast corner of the Project site used for dry farming. Additionally, rodenticides were used to control rodents in the same area and insecticides to control insects. According to the records from the RCAC, there is no reported chemical use at the former nursery on the site. However, interviews conducted with previous operators of the nursery and nursery inspector indicated the use of Round-Up at the former nursery. The documented chemicals used on the Project site include the following:

Insecticides

- Carbaryl (1-naphthyl N-methylcarbamate), Aluminum Phosphate, Monohydrochlorite, and Hydrochloride.

Herbicides

- Chlorsulfuron, 2-4-dichlorophenoxy, Dichloride, Banvel II, 2-Chloro-n-(4-Mehtoxy-6-Methyl-1,3,5-Trian-2YI), Amincarbonyl Benessulfonamide, 3,6-Dichloroanisic Acid, Avadex BX, Avenge, Banvel, Bladex, Buctril, and Cabyne.

Rodenticides

- Strychnine and Zinc Phosphate.

Generally, the above pesticides biodegrade within a relatively short period of time. There is a possibility that detectable levels of pesticides may be present in the farmed fields of the site; however, there is a low probability they are above actionable levels.[2]

ON-SITE RECONNAISSANCE AND SITE INSPECTION

IWS Environmental, Inc. conducted multiple physical site inspections at the Project site; one on January 26, 2006 and a second on February 26, 2014. The visual site inspections did not reveal any current or former underground storage tanks, significant surface staining, and/or vaulted electrical transfer boxes. There was no evidence of any subsurface abandoned foundations, seeps, or stressed vegetation. There

[2] According to USLEGAL.com, action levels are the regulatory levels recommended by the U.S. Environmental Protection Agency (EPA) for enforcement by the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) when pesticide residues occur in food or feed commodities for reasons other than the direct application of the pesticide. Action levels are set for inadvertent residues resulting from previous legal use or accidental contamination. Available at https://definitions.uslegal.com/a/action-levels-environmental-law/. Accessed July 17, 2019.

was no indication of the storage or use of hazardous materials within the Project site. The following were noted as potential environmental concerns:

- During both IWS Environmental Inc.'s inspections and Kimley-Horn personnel's 2019 site visit, debris and litter were identified along Keller Road and Scenic Valley Drive. The debris piles consisted of the following: old TV's, furniture, clothes, wood, gym equipment, tires, and household equipment including empty plastic containers (motor oil, paint, and transmission fluid containers). Only minor soil staining was visible.
- Metal drums on wood pallets were identified on the top of the ridge in the southern portion of the site. These drums were filled with water at the time of the 2006 site inspection; however, there was no indication or stains near or under the drum nor any labels identifying the drums has containing hazardous materials. Presence/absence of the metal drums following the 2014 site inspection was not documented.
- A collection of five-gallon plastic containers with discarded paint were observed during the 2006 site inspection near the metal drums. It appeared most were empty, and no containers appeared to be leaking. Presence/absence of the plastic containers following the 2014 site inspection was not documented.
- A nursery was previously located in the middle of the site. The nursery primarily grew ornamental shrubs and palm trees. During the 2006 site inspection, there were no indications of any use or storage of hazardous materials on or near the nursery. During the 2014 site inspection, investigators noted the nursery is no longer present.
- Multiple structures were located on the property including a small brick building and rock/concrete house and ancillary structures. An EMWD water storage tank is located off-site on the south side of Keller Road between Gloria Road and Nancy Lane. The Project borders the water tank property to the east, south, and west.
- Some stockpiled soil and material were deposited on the southeastern portion of the Project site as a result of construction of the residential houses to the south of the Project site (Greer Ranch).
- A few areas had been used for target practice as spent gun shell casings were observed on the ground in more isolated areas of the Project site during the 2006 and 2014 site inspections.

NEARBY AIRPORTS OR AIRSTRIPS

The nearest airstrip is the French Valley Airport in unincorporated Riverside County, located at 37600 Sky Canyon Drive, Murrieta, CA 92563 approximately 3.4 miles southeast of the eastern Project site boundary. There are two special or private-use aviation facilities in the area: Pines Airpark located east of I-215 and north of Scott Road (private-use) and a hospital heliport located just east of I-215 at Loma Linda University Medical Center – Murrieta.

WILDLAND FIRE HAZARDS

According to the Murrieta GP Safety Element, most of the Project site is within a high fire zone.[3] Per the Riverside County GP's Safety Element, the northeast corner of the Project site is designated as a Moderate Fire Hazard Severity Zone (FHSZ) State Responsibility Area (SRA). The remainder of the Project site is designated as a Very High FHSZ SRA.[4] Lastly, the designations for the Projects site on CAL FIRE's Riverside County (West) FHSZ Map[5] are the same as those on the Riverside GP Wildfire Susceptibility map. See Section 4.16, *Wildfire Hazards* and Appendix 9.11.1, *Fire Protection Technical Report* for added information on wildland fire hazards.

EVACUATION ROUTES

According to the Murrieta GP Safety Element, the City of Murrieta has no defined emergency routes. I-15 and I-215 are considered emergency routes as they traverse the City granting access from many of the main thoroughfares.[6]

SCHOOLS

The nearest school to the Project site is the Oak Meadows Elementary School at 28600 Poinsettia Street in Murrieta, approximately one mile east of the site.

4.8.3 REGULATORY FRAMEWORK

Hazardous materials and wastes are identified and defined by federal and state regulations for the purpose of protecting public health and the environment. Hazardous materials contain certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous materials are defined in the Code of Federal Regulations (CFR) Title 40, Volume 25, Parts 260–265 and in the California Code of Regulations (CCR), Title 22 Div. 4.5, Chapter 11, Article 1, Section 66261. Over the years, the laws and regulations have evolved to deal with different aspects of the handling, treatment, storage, and disposal of hazardous substances.

FEDERAL

Federal Toxic Substances Control Act of 1976

The Federal Toxic Substances Control Act of 1976 tasked the U.S. Environmental Protection Agency (U.S. EPA) with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. The Federal Toxic Substances Control Act addresses the

[3] City of Murrieta. (2011*). General Plan 2035, Chapter 12 – Safety Element, Exhibit 12-8: High Fire Hazard Zones*. Page 12-40. Murrieta, CA: RBF Consulting. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 17, 2019.

[4] County Planning Department. (2015*). Riverside County General Plan, Chapter 6: Safety Element, Figure S-11: Wildfire Susceptibility*. Page S-46. Riverside, CA: Riverside County Planning Department. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch06_Safety_DEC2016.pdf?ver=2017-10-06-093651-757. Accessed July 17, 2019.

[5] CAL FIRE FRAP. (2007). *Western Riverside County Fire Hazard Severity Zones in SRA*. Retrieved from CAL FIRE Website: https://osfm.fire.ca.gov/media/6752/fhszs_map60.pdf. Accessed July 19, 2019.

[6] City of Murrieta. (2011). *General Plan 2035, Chapter 12 – Safety Element, Emergency Preparedness*. Page 12-18. Murrieta, CA: RBF Consulting. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 17, 2019.

production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.

Resource Conservation and Recovery Act of 1976

The objectives of the Resource Conservation and Recovery Act (RCRA) are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA of 1976, which was an amendment to the Solid Waste Disposal Act of 1965, addresses solid and hazardous waste management activities. The Resource Conservation and Recovery Act affirmed and extended the "cradle-to-grave" system, which gives the U.S. EPA authority to control the life cycle of hazardous materials: generation, transportation, treatment, storage, and disposal of hazardous waste. In November 1984, the Federal Hazardous and Solid Waste Amendments (HSWA) amended and strengthened the Resource Conservation and Recovery Act by requiring phasing out of land disposal of hazardous waste; corrective action for releases; and waste minimization, among other mandates. The HSWA of 1984 also added Subtitle I, which required the U.S. EPA to develop a comprehensive regulatory program for underground storage tanks (USTs) storing petroleum or certain hazardous substances governs. The subsequent UST regulations, which included technical requirements, financial assurance, and state program approval objectives, were issued by the U.S. EPA in 1988.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also establishes the NPL, which is a list of contaminated sites warranting further investigation by the U.S. EPA. On October 17, 1986, CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) which considered the U.S. EPA's experience in administering the first six years of the Superfund program and made several additions and changes to the program. The SARA:

- stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites;
- required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations;
- provided new enforcement authorities and settlement tools;
- increased state involvement in every phase of the Superfund program;
- increased the focus on human health problems posed by hazardous waste sites;
- encouraged greater citizen participation in making decisions on how sites should be cleaned up;

- increased the size of the trust fund to $8.5 billion; and
- required the U.S. EPA to revise the Hazard Ranking System to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the NPL.[7]

STATE

California Environmental Protection Agency

The boards, departments, and offices that make up the California Environmental Protection Agency (CalEPA) include the Air Resources Board (ARB); the Department of Resources Recycling and Recovery (CalRecycle); the Department of Pesticide Regulation (DPR); the Department of Toxic Substances Control (DTSC); the Office of Environmental Health Hazard Assessment (OEHHA); and the State Water Resources Control Board (SWRCB). These boards, departments and offices were placed within the CalEPA "umbrella" to create a cabinet-level voice for the protection of human health and the environment (such as clean air, clean water, clean soil, safe pesticides, and waste recycling and reduction) to assure the coordinated deployment of state resources.

CALIFORNIA HAZARDOUS WASTE CONTROL LAW

The California Hazardous Waste Control Law (Health and Safety Code [HSC], Division 20, Chapter 6.5) is administered by CalEPA to regulate the management of hazardous materials. While the California Hazardous Waste Control Law is generally more stringent than RCRA, the State of California is authorized to administer a state hazardous waste program instead of the federal program. More specifically, Section 25101(d) of HSC Division 20, Chapter 6.5, Article 1 states: *It is in the best interest of the health and safety of the people of the State of California for the state to obtain and maintain authorization to administer a state hazardous waste program in lieu of the federal program pursuant to Section 3006 of Public Law 94-580, as amended, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6926). Therefore, it is the intent of the Legislature that the director shall have those powers necessary to secure and maintain interim and final authorization for the state hazardous waste program pursuant to the requirements of Section 3006 of Public Law 94-580, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6926), and to implement such program in lieu of the federal program*.[8]

The Hazardous Waste Control Law lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous materials; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies wastes that cannot be disposed of in landfills.

California Health and Safety Code

The handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95 of the California HSC. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a

[7] U.S. EPA. (2018). *The Superfund Amendments and Reauthorization Act (SARA)*. Retrieved from U.S. EPA Website: https://www.epa.gov/superfund/superfund-amendments-and-reauthorization-act-sara. Accessed July 17, 2019.

[8] State of California. (1982). *Health and Safety Code, Division 20. Miscellaneous Health and Safety Provisions, Chapter 6.5. Hazardous Waste Control, Article 1. Findings and Declarations*. Retrieved from State of California Website: https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=20.&title=&part=&chapter=6.5.&article=1. Accessed July 18, 2019.

Hazardous Materials Business Plan (HMBP). HMBPs contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. HSC Chapter 6.95 establishes minimum statewide standards for HMBPs.

In addition, in the event that a facility stores a quantity of specific acutely hazardous materials above the thresholds set forth by California code, facilities are also required to prepare a risk management plan and California Accidental Release Plan. The risk management plan and California Accidental Release Plan provide information on the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts (California HSC, Chapter 6.95).

California Department of Toxic Substances Control

The mission of the DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products. As part of its mission, the DTSC maintains its Enforcement and Emergency Response Division (EERD) to administer the technical implementation of the State Unified Program. The Unified Program is a consolidation of six environmental programs at the local level. Those agencies at the local level with responsibility for the program are known as Certified Unified Program Agencies (CUPA). The DTSC also has the responsibility of overseeing and regulating hazardous materials, generators, transporters, and facilities that may use, generate, store, transport, or recycle, hazardous materials.

California HSC, Division 20, Chapter 6.5, Article 2, Section 25100, et seq. authorizes the DTSC and local certified unified program agencies to regulate facilities that generate or treat hazardous materials. The DTSC may also adopt, and revise when appropriate, standards and regulations for the management of hazardous materials to protect against hazards to the public health, to domestic livestock, to wildlife, or to the environment.

GOVERNMENT CODE SECTION 65962.5

Pursuant to *Government Code (GOV) Section 65962.5.(a)*, the DTSC shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all of the following:

1) All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the HSC.
2) All land designated as hazardous waste property or border zone property pursuant to former Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the HSC.
3) All information received by the DTSC pursuant to HSC Section 25242 on hazardous waste disposals on public land.
4) All sites listed pursuant to HSC Section 25356.

Subsection (b) of GOV Section 65962.5 states that the State Department of Health Services shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to HSC Section 116395.

Pursuant to *GOV Section 65962.5.(c)*, the State Water Resources Control Board shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all of the following:

1) All underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.

2) All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California regional water quality control board has notified the Department of Toxic Substances Control pursuant to subdivision (e) of Section 13273 of the Water Code.

3) All cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13304 of the Water Code, that concern the discharge of wastes that are hazardous materials.

Subsection (d) of GOV Section 65962.5 states that the local enforcement agency, as designated pursuant to CCR Title 14 Section 18051, shall compile as appropriate, but at least annually, and shall submit to CalRecycle, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste. CalRecycle shall compile the local lists into a statewide list, which shall be submitted to the Secretary for Environmental Protection and shall be available to any person who requests the information.

Subsection (e) of GOV Section 65962.5 states that the Secretary for Environmental Protection shall consolidate the information submitted pursuant to this section and distribute it in a timely fashion to each city and county in which sites on the lists are located. The secretary shall distribute the information to any other person upon request. The secretary may charge a reasonable fee to persons requesting the information, other than cities, counties, or cities and counties, to cover the cost of developing, maintaining, and reproducing and distributing the information.

Subsection (f) of GOV Section 65962.5 states that before a Lead Agency accepts as complete an application for any development project which will be used by any person, the applicant shall consult the lists sent to the appropriate city or county and shall submit a signed statement to the local agency indicating whether the project and any alternatives are located on a site that is included on any of the lists compiled pursuant to this section and shall specify any list. If the site is included on a list, and the list is not specified on the statement, the Lead Agency shall notify the applicant pursuant to Section 65943.

State Water Resources Control Board

Brownfields are underutilized properties where reuse is hindered by the actual or suspected presence of pollution or contamination. The State Water Resources Control Board's (SWRCB) Brownfield Program goals are to:

- Expedite and facilitate site cleanups and closures for brownfield sites to support reuse of those sites;
- Preserve open space and greenfields;
- Protect groundwater and surface water resources, safeguard public health, and promote environmental justice; and

- Streamline site assessment, clean up, monitoring, and closure requirements and procedures within the various SWRCB site cleanup programs.

Site clean-up responsibilities for Brownfields primarily reside within four main SWRCB programs: Underground Storage Tank Program; Site Cleanup Program; Department of Defense Program; and the Land Disposal Program. These SWRCB cleanup programs are charged with ensuring sites are remediated to protect California's surface and groundwater and return them to beneficial uses.

Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA)

Cal/OSHA is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. California OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

State Office of Environmental Health Hazard Assessment (Proposition 65 implementation)

Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, requires businesses to provide warnings to people about significant exposures to chemicals that cause birth defects, cancer, or other reproductive harm. These chemicals may be found in the products that people purchase, in their homes or workplaces, or that are released into the environment. By requiring that this information be provided, Proposition 65 enables people to make informed decisions about their exposures to these chemicals.

California Accidental Release Prevention Program

Similar to the Federal Risk Management Program, the California Accidental Release Prevention Program includes state requirements as well as a list of regulated substances and thresholds. The regulations of the program are contained in CCR Title 19, Division 2, Chapter 4.5. The intent of California Accidental Release Prevention Program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to ensure compliance with community right-to-know laws.

Hazardous Materials Transport

Together the Riverside County Fire Department, California Department of Transportation, and California Highway Patrol regulate the transportation of hazardous materials. To operate a commercial vehicle carrying hazardous materials, including explosives, those transporting hazardous materials must have a hazardous materials endorsement. During the transport of hazardous materials, maintenance of a route map is required which indicates safe routing and safe stopping places along the route.

Section 7703 of the California Fire Code addresses requirements for use, handling, and transportation of explosive materials. California Fire Code Article 77 indicates that a permit from the local fire department must be obtained for both the storage and use of explosive materials. In addition, the responsible party must file a $100,000 corporate surety bond or have public liability insurance for the same amount.

REGIONAL

Riverside County Community Health Agency – Department of Environmental Health

The Environmental Protection and Oversight Division is one of two divisions of the Riverside County Department of Environmental Health. The Environmental Protection and Oversight Division has regulatory control over a number of hazardous materials, land use, and water system-based programs.

The Hazardous Materials Management Division is one of three divisions of the Riverside County Department of Health Community Health Agency. The Hazardous Materials Management Division is the Certified Unified Program Agency for Riverside County responsible for regulating HMBPs and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans.[9]

LOCAL

City of Murrieta Emergency Operations Plan

The City of Murrieta Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with natural disasters, national security emergencies, and technological incidents affecting the City. The City's EOP describes the operations of the City's Emergency Operations Center, which is the central management entity responsible for directing and coordinating the various City departments and other agencies in their emergency response activities. The City's Emergency Operations Center centralizes the collection and dissemination of information about the emergency and makes policy-level decision about response priorities and the allocation of resources. As part of the City's Emergency Management Program, the City's Emergency Operations Center Manager (Fire Division Chief) is responsible for ensuring the readiness of the Emergency Operations Center.[10]

City of Murrieta General Plan 2035

SAFETY ELEMENT

The Safety Element of the Murrieta GP includes goals and policies that will be applied to the Project related to hazards and hazardous materials. The applicable goals and policies are listed below:

Goal SAF-1: ***People and properties are provided with protection from natural and man-made hazards.***

Policy SAF 1.1: Encourage that areas be dedicated as open space when necessary and appropriate to protect property, public health, and safety from hazards such as earthquake fault zones or flood plains.

Policy SAF 1.4: Review public safety infrastructure and staff resources as new development is planned or proposed in Murrieta and the Sphere of Influence.

[9] County of Riverside Department of Environmental Health. (2019). *Who We Are*. Retrieved from http://www.rivcoeh.org/About-Us/who. Accessed July 18, 2019.

[10] City of Murrieta. (2017). *Emergency Operations Plan Part I: Basic Plan*. Murrieta, CA. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/714/Emergency-Operations-Plan-Basic-Plan-PDF. Accessed September 20, 2019.

Policy SAF 1.5: Promote coordination among City departments to provide for safety in new development and/or annexation areas.

Goal SAF-8: ***A community that is protected from the harmful effects of hazardous materials, hazardous waste, and environmental contamination.***

Policy SAF-8.13: When approving new development, ensure that the site:

- Is sufficiently surveyed for contamination and remediation, particularly for sensitive uses near existing or former toxic or industrial sites.
- Is adequately remediated to meet all applicable laws and regulations, if necessary.
- Is suitable for human habitation.
- Is protected from known hazardous and toxic materials.
- Does not pose higher than average health risks from exposure to hazardous materials.

4.8.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

The CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if one or more of the following occurs:

- Create a significant hazard to the public or the environmental through the routine transport, use, or disposal of hazardous materials (Impact 4.8-1);
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Impact 4.8-2);
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Impact 4.8-3);
- 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 (Impact 4.8-4);
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area (Impact 4.8-5);
- Impair implementation of or physically interfere within an adopted emergency response plan or emergency evacuation plan (Impact 4.8-6); or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires (Impact 4.8-7).

METHODOLOGY AND ASSUMPTIONS

The Project and associated project design features (PDFs) are evaluated against the aforementioned significance criteria in order to determine the level of impacts related to hazards and hazardous materials. In addition to PDFs, this analysis considers existing regulations, laws and standards that serve to avoid or reduce potential environmental impacts. Where significant impacts remain, feasible mitigation measures are recommended, where warranted, to avoid or lessen the Project's significant adverse impacts.

Approach to Analysis

This analysis of impacts related to hazards and hazardous materials examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by IWS Environmental, Inc. and Kimley-Horn; review of project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects related to hazards and hazardous materials considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

The Project's potential impacts concerning hazards and hazardous materials would be avoided or reduced through the following PDFs:

- The development portions of the Project site will be zoned for uses not typically associated with hazards or hazardous materials: Estate Residential (ER-3), Single Family Residential (SF-2), Mixed-Use (MU), and Community Commercial (CC). Land uses typically associated with hazards and hazardous materials, such as industrial, raw materials processing and storage, and manufacturing, are prohibited on the Project site.
- Exceed the California and Murrieta standard of 100-foot wide fuel modification zones by 50 feet, for 150 feet total on the Project's perimeter. In addition, perimeter lot rear yards will be considered part of the FMZ areas, providing another 20 feet, on average and increasing FMZs to 170 feet wide.
- The Project will include approximately 95 fire hydrants, spaced approximately every 300 feet along project streets, resulting in significant water access for fire-related emergencies.
- An important component of the landscape plan that is not currently required by the State or City Codes is in the area adjacent to the residences' foundations. A one to three-foot-wide landscape

free area would be provided to prevent flame impingement under the stucco along the weep screed and help prevent ember penetration into the structure stucco walls.

4.8.5 IMPACTS AND MITIGATION MEASURES

Impact 4.8-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The Project consists of the construction of single-family residential, multi-family residential, commercial, mixed-use development and associated infrastructure improvements. Construction of the Project will involve the transport, use, and disposal of hazardous materials on-site and off-site, which include fuels, paints, mechanical fluids, and solvents, but would not be present in such a quantity or used in such a manner that would pose a significant hazard to the public. In addition, should a spill or other hazardous materials incident occur, construction staff are well versed in how to handle such a situation, including containment and who to contact in such a situation (i.e., Murrieta Fire & Rescue). Material Safety Data Sheets (MSDS) will also be posted on-site to provides workers and emergency responders with procedures for handling hazardous materials safely, including information for fire suppression, toxicity/first aid, storage/disposal, and spill handling.

As discussed previously and according to the 2006 ESA inspection, containers of discarded paint and large metal drums were observed on the Project site. This is in addition to various debris piles containing miscellaneous items such as old TV's, furniture, and clothes. Similar conditions were observed during the 2014 physical inspection; however, presence/absence of the paint containers and metal drums was not indicated. The 2014 inspection noted that none of the areas where litter and debris was observed on the site contained any containers of hazardous materials and that there were no areas observed on the property where hazardous materials have been discarded or spilled The property owner has made a continual effort to remove said junk and debris from the property, but trespassing and unauthorized dumping continues.

Mitigation Measure (MM) HAZ-1 (see page 4.8-17) requires an updated Phase I ESA be conducted prior to the issuance of grading permits for the Project to assess current conditions. If the Phase I ESA determines the Project site is contaminated, a Phase II ESA shall be conducted (MM HAZ-2, see page 4.8-17).

Isolated areas of the Project site used for target practice, as evidenced by an abundant amount of spent shell casings on the ground, were observed during the 2006 ESA inspection. and 2014 physical inspection. See Photograph 16 in Appendix A of the *Phase I Environmental Site Assessment* (Appendix 9.6.1) for a representative image. The concern associated with the spent shells casings is the accumulation of heavy metals from bullets and bullet fragments in the soil. Of these metals, lead is the predominant contaminant and can be toxic to people and wildlife, causing health issues. Lead not only contaminates soil and water, but also the vegetation in the area(s) of the target practice. If the updated Phase I ESA finds that the Project site may be contaminated with lead, soil testing shall be conducted as part of the Phase II ESA (MM HAZ-2, see page 4.8-17).

The routine transport, use, and disposal of hazardous materials can result in hazards to people and the environment, due to the potential for accidental release. Such hazards are typically associated with certain types of land uses, such as chemical manufacturing facilities, industrial processes, waste disposal, and storage and distribution facilities. At full buildout, the Project would consist of single-family and multi-family residences, commercial and mixed-use development, parks and permanent open space. As previously mentioned, none of these land uses is expected to use significant quantities of hazardous materials or to generate significant quantities of hazardous materials requiring transport. The routine transport, use, and disposal of these materials must adhere to federal, state, and local regulations for transport, handling, storage, and disposal of hazardous substances. Compliance with the regulatory framework would ensure Project construction would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction.

Off-Site Construction Impacts

The Project would also include off-site utility and roadway improvements at three locations: Keller Road, Zeiders Road, and the McElwain Road extension. Similarly, these Project components are not usually associated with land uses that involve the routine transport, use, and disposal of hazardous materials. Off-site construction would use and store limited amounts of hazardous materials, including construction materials such as paints and solvents, vehicle fuel, and other common hazardous materials. As discussed above, the routine transport, use, or disposal of these materials during the off-site Project construction is not anticipated to create a significant hazard to the public or the environment, as the routine transport, use, and disposal of these materials must adhere to federal, state, and local regulations for transport, handling, storage, and disposal of hazardous substances. Off-site improvements at all three locations, Keller Road, Zeiders Road, and the McElwain Road extension, would comply with all applicable regulatory framework, and impacts would be less than significant.

OPERATIONS

Landscape maintenance activities typically include the storage and periodic application of pesticides, herbicides, and fertilizers, as well as the storage and use of toxic fuels and solvents. Properly removing and disposing of on-site hazardous materials in accordance with state and federal regulations before they are accidentally disturbed can reduce impacts associated with these hazards. Household hazardous materials such as cleaners and solvents are not considered significant due to the small volume and low concentration of hazardous materials utilized. Commercial businesses that would operate within the Project site that would regularly receive, store, handle, generate, or dispose of regulated types and quantities of hazardous materials and waste products would be regulated pursuant to appropriate permits and inspected annually to ensure compliance with permit conditions. Accordingly, compliance with existing regulations would be sufficient to reduce potential impacts to a less than significant level and no additional, project-specific mitigation measures would be required.

Off-Site Operations Impacts

There are no long-term operational impacts associated with off-site improvements, with respect to the transport, use or disposal of hazardous materials. Utility improvements at Keller Road, Zeiders Road and the McElwain Road extension for the drainage improvements would require limited operational activities, for periodic maintenance typical of municipal sewer or drainage facilities. The McElwain Road extension may be traveled by vehicles carrying hazardous materials, although these would be regulated by

applicable local, state and federal agencies. Therefore, long-term operational impacts associated with the transport, use, and disposal of hazardous materials would be less than significant.

MITIGATION MEASURES

Refer to MM AQ-1 (see Section 4.2, page 4.2-35) regarding control of fugitive dust during grading.

MM HAZ-1: Prior to grading, the Project Applicant shall submit, for City review and approval, an updated Phase I Environmental Site Assessment consistent with current ASTM standards. The report shall identify any Recognized Environmental Conditions (REC) (i.e., any hazardous substances or petroleum products) and recommend a Phase II ESA if necessary, which shall be implemented to the City's satisfaction. Should any RECs be identified, applicable treatment, removal and/or disposal shall be implemented to the satisfaction of the applicable local, state and federal agencies including but not limited to the City of Murrieta, California Department of Toxic Substances Control, and the U.S. EPA.

MM HAZ-2: **Phase II ESA.** If the Phase I ESA required by MM HAZ-1 indicates a probability that hazardous materials may be found on the Project site, the Project Applicant shall submit a Phase II ESA, which shall further evaluate Project on-site and off-site conditions and address the likely presence and extent of hazardous materials contamination identified in the updated Phase I ESA prepared for the Project. Phase II work may include surficial and sub-surficial soil analysis, groundwater analysis, and/or lead sampling, among other sampling and testing measures.

The Project Applicant shall contract a trained, licensed, and qualified environmental professional that possesses expertise in Phase II ESAs whom shall perform the assessment per the ASTM E1903-11 Standard Guide.

If the Phase II ESA determines that environmental contaminant(s) are present on the Project site, the environmental professional, Project Applicant, and Lead Agency will coordinate to identify appropriate next steps, which may include a Phase III ESA and Remedial Action Plan.

Impact 4.8-2: **Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The construction of new developments could result in hazards to the public or the environment through the accidental upset or release of hazardous materials caused by accidental spillage of hazardous materials used during the construction phases of the Project, or as a result of the exposure of unanticipated contaminated soil during grading activities. The Phase I ESA for the Project site evaluated the potential for hazardous materials, based upon readily discernible and/or documented present and historic uses of the properties and uses adjoining the sites and generally characterized the expected nature of hazardous materials that may be present as a result of such uses. However, to address the dated ESA, MM HAZ-1 requires an updated Phase I ESA be conducted prior to the issuance of grading permits

for the Project to assess current conditions. If the Phase I ESA determines the Project site is contaminated, a Phase II ESA shall be conducted (MM HAZ-2, see page 4.8-17).

The Project site is not listed on an NPL or Superfund site, and there are no oil wells within 1,000 feet. No significant environmental concerns were noted on the historical aerial photographs. Database searches did not reveal any underground storage tanks. Additionally, the Project site has not been cited or issued violations notices by any environmental regulatory agency for improper use or disposal of hazardous materials. According to the 2014 physical inspection, it appears that the Project site is absent of any significant surface contamination which would represent an environmental concern.

The Project site has been utilized for agricultural activities and has been subject to a variety of herbicides and chemicals. Herbicides have short life spans and biodegrade at rapid rates; however, there is a possibility of detectable levels of pesticides and contaminated soils that could be unearthed during construction activities. Therefore, implementation of MM HAZ-3 (see page 4.8-19) would be needed, which requires further soil testing at areas of the Project site which have been extensively utilized for farming. Encountering historic agricultural chemicals is not uncommon when grading in former agricultural areas such as the Project site. Should such chemicals be encountered, standard construction protocols would be initiated including testing the soil prior to use on-site or off-site disposal. Depending on the nature and extent of historic agricultural chemical use, on-site soil may require treating prior to reuse or disposal, or disposal at an appropriate off-site landfill that accepts agricultural soils, such as Clean Harbor's Buttonwillow Landfill Facility located at 2500 West Lokern Road, Buttonwillow, CA. Hauling to this location would vary, but typically be via I-215 to SR-60 to SR-57 to I-210 to I-5. [11]

Project construction would follow applicable local, state and federal regulations with respect to handling hazardous materials encountered during construction. The Project would also be subject to compliance with MM HAZ-1 (see page 4.8-17) through MM HAZ-3 (see page 4.8-19). Through compliance with required regulations and implementation of required mitigation measures, no significant impacts are anticipated.

Off-Site Construction Impacts

Off-site improvement areas share the same database results. Historical agricultural activity throughout the Project site may have contaminated the soil which would result in the appearance of hazardous materials during construction. Implementation of MM HAZ-3 (see page 4.8-19) would be required. Refer to analysis above.

OPERATIONS

Project operations would involve typical hazardous materials/chemicals associated with residential and commercial land development such as fuels, paints, mechanical fluids, and solvents. As discussed in Impact 4.8-1 above, any routine transport, use, and disposal of these materials during Project operations must adhere to federal, state, and local regulations for transport, handling, storage, and disposal of hazardous substances. With the Project, these regulations are overseen and enforced by the City of Murrieta Fire Department. As noted on the City's Fire Department web page: "The Murrieta Fire Department protects our community by inspecting, pre-planning, and monitoring those business that

[11] CleanHarbors (2019). *Buttonwillow Landfill Facility*. Retrieved from CleanHarbors Website: https://www.cleanharbors.com/location/buttonwillow-landfill-facility. Accessed April 1, 2019.

handle hazardous materials in our City. The Riverside County Department of Environmental Health Hazardous Materials Branch is the City of Murrieta's Certified Unified Program Agency (CUPA) responsible for administrating all six program elements of the Unified Program within our jurisdiction. The Unified Program consolidates, coordinates, and makes consistent the following hazardous materials and hazardous waste programs:

- Hazardous Waste Generation, including on-site treatment under Tiered Permitting
- Aboveground Petroleum Storage Tanks (APST) Spill Prevention Control and Countermeasure Plan (SPCC)
- Underground Storage Tanks (UST)
- Hazardous Materials Release Response Plans and Inventories
- California Accidental Release Prevention Program (Cal ARP)
- Uniform Fire Code Hazardous Materials Management Plans and Inventories"[12]

Furthermore, household hazards such as cleaners and solvents contain low quantities of fuels, paints, mechanical fluids, and solvents that do not pose a significant threat related to the release of hazardous materials into the environment. A less than significant impact would occur in this regard.

Off-Site Operations Impacts

Refer to on-site operations analysis above. Construction of off-site improvements would require routine maintenance typical of other infrastructure utilities (pipelines, roads) which could involve hazardous materials. Any materials needed for routine maintenance would be transported, used, and disposed of in accordance with federal, state, and local regulations, as discussed above (see Impact 4.8-1) to ensure off-site improvement operations would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions.

MITIGATION MEASURES

MM HAZ-3: **Inspection of Potentially Contaminated Soils**. If potentially contaminated soils are unearthed during site disturbance activities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, a Registered Professional Engineer or Geologist shall inspect the identified area, determine the need for sampling to confirm the nature and extent of contamination, and file a written report with the City of Murrieta Development Services Department and the Riverside County Department of Environmental Health stating the recommended course of action. Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public in which the Murrieta Fire Department will respond to hazardous materials incidents, with further assistance provided by the County Fire Department Hazardous Materials Response Team and the County Health Department.

[12] City of Murrieta. (ND). *Hazardous Materials (HazMat).* Retrieved from City of Murrieta Website: http://www.murrietaca.gov/319/Hazardous-Materials-HazMat. Accessed April 1, 2019.

All Murrieta Fire Department personnel receive first responder operations training and are trained in hazardous materials decontamination procedures, so that they can determine that a problem exists, isolate the problem, and assist an advanced team when it arrives.[13] If significant remediation is required, the Registered Professional Engineer or Geologist shall contact representatives of the San Diego Regional Water Quality Control Board, DTSC, and other local agencies, as applicable, for guidance and possible oversight. The Project Applicant is responsible for implementing all recommended actions.

Impact 4.8-3: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

There are no schools located within one-quarter mile of the Project site.[14] The nearest school to the Project site is the Oak Meadows Elementary School at 28600 Poinsettia Street in Murrieta, approximately one mile to the east. Hazardous substances and wastes would be stored, used, and generated on the Project site during construction. These substances include fuels for construction equipment and vehicles, motor oil, cleaning solvents, paints, and storage containers and applicators containing such materials. The Project would be required to adhere to all applicable regulations as noted in Impact 4.8-1. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation is required.

Impact 4.8-4: Would the 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?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION AND OPERATIONS

Government Code 65962.5 combines several regulatory lists of sites that pose a hazard related to hazardous materials and substances into one master database. According to Government Code 65962.5, no hazardous materials or waste sites are located within the Project site and there are no known hazardous waste sites within the Project vicinity; however, the site was listed on the agricultural database for the use of insecticides and herbicides. Herbicides biodegrade rapidly in the soil; therefore, there is a low probability that any significant levels of these chemicals would remain in the soil. MM HAZ-1 and MM HAZ-2 (see page 4.8-17) are recommended for additional soil testing be completed in the locations of the extensive farming areas to test for pesticides and herbicides prior to construction activities.

[13] City of Murrieta. (2011). Murrieta General Plan 2035; Chapter 12: Safety Element. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed September 20, 2019.

[14] Google Earth; Menifee Unified School District. (ND). Find Your School. Retrieved from MUSD Website: https://www.menifeeusd.org/District/791-Find-Your-School.html. Accessed April 1, 2019.

Implementation of MM HAZ-1 and MM HAZ-2 (see page 4.8-17) would reduce impacts to a less than significant level.

MITIGATION MEASURES

MM HAZ-1 and MM HAZ-2 (see page 4.8-17) are applicable.

Impact 4.8-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

The Project site is not within two miles of a public airport, public use airport;[15] therefore, the Project would not result in a safety hazard for the people residing or working in the area. Furthermore, the proposed Project does not include any towers or tall structures that would result in a safety hazard. Refer to Section 4.11, *Noise*, for impacts related to excessive noise. No impact would occur.

MITIGATION MEASURES

No mitigation is required.

Impact 4.8-6: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Project construction would occur within the site boundaries, thus, would not impede access to nearby roadways or a designated evacuation route. Furthermore, the City does not designate any roads as emergency evacuation routes. Project construction would not interfere with the City's emergency response plan. Construction activities may require the transport of heavy equipment and materials to and from the Project site, which may impede traffic flows. However, these impediments would be localized and short-term. Additionally, a Construction Traffic Control Plan (MM TRAN-11, see Section 4.13, page 4.13-53) would be implemented to ensure emergency vehicle access to/near the Project site and adjacent areas. Emergency fire response is mitigated through construction of the McElwain Road extension (as discussed further in Section 4.16, *Wildfire Hazards*). Furthermore, the MHSPA states that the Project will comply with all applicable code, regulations, and ordinances such as the Fire Projection Technical Report. Therefore, with mitigation, Project construction would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. With mitigation, a less than significant impact would occur in this regard.

[15] Per Google Earth, the Project site is approximately 3.4 miles from French Valley Airport.

Off-Site Construction Impacts

Although the City does not have any designated emergency evacuation routes, I-15 and I-215 may be considered emergency routes as they traverse the City and provide access to many main thoroughfares. The off-site improvements at Zeiders Road and the northeast corner of Keller Road (for the drainage improvements); utility improvements in Keller Road and Zeiders Road, and McElwain Road extension would be temporary and, with implementation of MM TRAN-11 (see Section 4.13, page 4.13-53), no roads would be completely blocked. Therefore, impacts are less than significant with mitigation. Furthermore, design and construction of roadways would comply with the applicable federal, state, and local requirements related to emergency access and evacuation plans. The proposed design and construction plans would be reviewed and approved by the fire marshal during the plan review.

OPERATIONS

Project operations would not disrupt or interfere with emergency access, or impede access to nearby roadways. Additionally, operations would not interfere with the City's emergency response plan. Residential and commercial components of the Project would comply with design standards for emergency services. Therefore, Project operations would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As discussed further in Section 4.16, *Wildfire Hazards*, the Project will provide a new emergency access route for the area, connecting McElwain Road from Linnel Lane to Keller Road. This will improve local emergency access, including emergency access for existing and future land uses along McElwain north of Linnel Lane. No impact would occur in this regard.

Off-Site Operations Impacts

Refer to on-site operations analysis above.

MITIGATION MEASURES

See Section 4.13 for transportation related mitigation measures.

Impact 4.8-7: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

This impact is addressed in Section 4.16, *Wildfire Hazards*.

4.8.6 CUMULATIVE IMPACTS

For purposes of hazards and hazardous materials impact analysis, cumulative impacts are considered for cumulative development in the Project vicinity (on-site and adjacent areas). Refer also to Section 4.0, *Environmental Impact Analysis*, for discussion concerning the basis for the cumulative impact analysis and a list of related cumulative projects located in the Project vicinity.

Impacts associated with hazards and hazardous materials are often site-specific and localized. The EIR evaluates environmental hazards in connection with the Project site and surrounding area. Regarding the off-site environmental hazards, the database search documents the findings of various governmental database searches regarding properties with known or suspected releases of hazardous materials within

a search radius of up to one mile from the site and serves as the basis for defining the cumulative impacts study area.

The Project site is currently vacant. Database record searches reveal that the site does not contain any underground storage tanks or hazardous cleanup sites. Historical aerial photo review shows the Project site has been utilized by agricultural activities for over 70 years.

Additionally, site-specific investigations would be conducted as part of MM HAZ-1 (see page 4.8-17) through MM HAZ-3 (see page 4.8-19) at sites where contaminated soils could occur to minimize the exposure of workers and the public to hazards and hazardous materials. The previously approved Murrieta Hills Specific Plan No. SPM-4 allowed for a maximum of 1,585 residences with a memorial park, commercial uses, park, passive open space, open space, and an elementary school on 985 acres. The Project would amend Specific Plan No. SPM-4 by reducing the number of dwelling units approved under Specific Plan No. SPM-4 from 1,585 to 750.

Cumulative impacts related to hazards and hazardous materials would result from projects that combine to increase exposure to hazards and hazardous materials. The potential for cumulative impacts to occur is limited since the impacts from hazardous materials use on-site are site-specific. Although some of the cumulative projects and other future projects associated with buildout of the surrounding communities (Table 4.1, *Cumulative Projects List*) also have potential impacts associated with hazardous materials, the environmental concerns associated with hazards and hazardous materials are typically site-specific. It is expected that future development within the area must comply with all federal, state, and local statutes and regulations applicable to hazards and hazardous materials.

Furthermore, this EIR has incorporated, by reference, the County of Riverside General Plan Final EIR, which addresses cumulative impacts from County buildout. The General Plan Final EIR concluded that risk of upset and impacts resulting from County General Plan implementation would not result in cumulatively considerable hazardous material effects due to accidental release. Also, according to the Murrieta GP, hazardous materials follow under the County of Riverside's Hazardous Waste Management Plan and has agreed to work on a regional level to solve problems involving hazardous waste.

Each project is required to address any issues related to hazardous materials or wastes on a project-specific basis. With adherence to applicable federal, state, and local regulations governing hazardous materials, the potential risks associated with hazardous materials would be less than significant. The incremental effects of the Project related to hazards and hazardous materials, if any, are anticipated to be minimal, and any effects would be site-specific. Therefore, in light of the above, Project impacts would be mitigated to less than significant levels with mitigation incorporated, and the Project's contribution to cumulative impacts is not otherwise considered to be "cumulatively considerable."

4.8.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable hazards and hazardous materials impacts have been identified for either the construction or operation phases of the Project.

4.8.8 REFERENCES

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4.9 HYDROLOGY AND WATER QUALITY

4.9.1 INTRODUCTION

This section examines the hydrologic and water quality conditions on and around the Murrieta Hills Specific Plan Amendment (MHSPA or Project) site and evaluates whether the Project will result in adverse effects to such resources. The setting, context, and impact analysis in this section is based on the *Preliminary Drainage Study for Tentative Tract Map No. 35853* (EIR Appendix 9.7.1) and the *Project Specific Water Quality Management Plan* (WQMP, EIR Appendix 9.7.2) completed by Chang Consultants in 2018. Additional background information for this section was obtained from the *Murrieta General Plan 2035* (Murrieta GP) and associated Final EIR (2011).

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

b) Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i. result in substantial erosion or siltation on- or off-site;

   ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or

   iii. 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?

d) Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.9.5, *Impacts and Mitigation Measures* below, impacts vary and include less than significant; no impact; and less than significant with mitigation incorporated.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of

Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.9.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

EXISTING HYDROLOGY

The Project is located south of Menifee Valley and Paloma Valley, and within the San Jacinto and Santa Margarita watersheds, which collect water from the surrounding area and drain into the Pacific Ocean. The San Jacinto Watershed covers approximately 720 square miles in the western half of Riverside County. The Santa Margarita Watershed encompasses approximately 750 square miles, of which approximately 27 percent lies within San Diego County and approximately 73 percent is in southwestern Riverside County. Approximately 80 percent of the Project area drains into the San Jacinto Watershed, which is under the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB), while the remaining 20 percent of the Project area drains into the Santa Margarita Watershed, which is under the jurisdiction of the San Diego Regional Water Quality Control Board (SDRWQCB). Additionally, the MHSPA area is within the Riverside County Flood Control and Water Conservation District (RCFCWCD) Area Drainage Plans for the Murrieta Creek/Murrieta Valley and Murrieta Creek/Warm Springs Valley (see Exhibit 4.9-1, *Receiving Waters Map*).

According to the Preliminary Drainage Study and the WQMP, the Project site is currently undeveloped and moderately to steeply sloping towards the northeast. Under pre- and post-development conditions, most of the storm runoff from the Project footprint and tributary area would be conveyed to an underground culvert crossing Keller Road just west of Zeiders Road. This culvert outlets into a minor natural drainage that continues in a northeasterly direction towards I-215. The flow is conveyed beneath

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

I-215 via existing California Department of Transportation (Caltrans) culverts that are approximately 300 feet and 2,500 feet north of Keller Road (Exhibit 3-3, *Vicinity Map*) After the flow crosses I-215, it is conveyed either east towards the Kaiser Permanente medical center or northerly in a series of drainage facilities and ultimately enters Salt Creek within the San Jacinto Watershed. The flow towards the Kaiser Permanente medical center is ultimately conveyed to the Mapleton project and its debris basin and two detention basins. The remainder of the Project site runoff is conveyed easterly along or south of Keller Road and is within the Santa Margarita Watershed. There are a series of culverts crossing I-215 that convey the runoff past the freeway (Exhibit 3-13, *Drainage Plan*). The drainage design for the MHSPA area also includes a series of bioretention basins for treatment and hydromodification control. See Exhibit 3-15, *Stormdrains and Water Quality Basins*, for basin locations and Exhibit 3-16, *Typical Water Quality Basin* for a typical basin.

FLOOD HAZARDS

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) shows the Project site being covered by four map panels including 06065C2064G (panel not printed), 06065C2070H (effective 8/18/2014), 06065C2710G (panel not printed), and 06065C2705G (effective 8/28/2008). Based on a review of these map panels, the Project site is not located in a documented flood plain or floodway.

GROUNDWATER

The Murrieta-Temecula Basin and the French Basin are the two major groundwater basins within the City of Murrieta and its sphere of influence (SOI). The Murrieta-Temecula Basin is the largest groundwater basin in the area, and is fed by precipitation in the valley, underflow, and by surface flow from the creeks draining the surrounding mountains. It then drains into the Santa Margarita River. It underlies approximately 60,000 acres and has an estimated storage capacity of 1.2 million acre-feet. This basin extends from the Murrieta graben (a depressed block of land bordered by parallel faults) in the north to the base of the Aqua Tibia Mountains in the south, and east from the Santa Rosa Plateau to the mesa and valley areas. The Murrieta-Temecula Basin underlies all portions of the Murrieta Creek channel, Warm Springs Creek, Pechanga Creek, and Temecula Creek, which serve as important sources of groundwater recharge for the underlying aquifers. The French Basin extends into the City and SOI from the northeast and is recharged by underflow from the Auld Basin and other surface streams. The French Basin underlies approximately 3,500 acres and drains into Warm Springs Creek.

According to a Project geotechnical report[2] (Appendix 9.5), groundwater was encountered on the Project site in an abandoned water well located in the east-central portion of the site at a depth of seven feet and in a test boring at a depth of 18 feet. Additionally, groundwater was also encountered at a depth of 6.5 feet in an exploratory fault trench located in the northwest portion of the site, which is attributed to a bedrock fault that acts as a groundwater barrier. The fractured and jointed bedrock below the ground surface provides area for water to collect, and this serves as the aquifer within the Project site. The on-site groundwater is seasonal and not part of a larger aquifer that is used for potable water supply.

Approximately 75 percent of the Eastern Municipal Water District's (EMWD) potable water demand is supplied by imported water from the Metropolitan Water District of Southern California through the Colorado River Aqueduct and connections to the State Water Project. However, approximately 25 percent

[2] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report, Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and I-215, Murrieta, California*. Page 7. Temecula, CA: Leighton and Associates, Inc.

of EMWD's potable water demand is supplied by EMWD groundwater wells. Most of the groundwater produced by EMWD comes from wells in the Hemet and San Jacinto area; EMWD also has wells in Moreno Valley, Perris Valley, and Murrieta areas.[3]

WATER QUALITY

The amount of pollutants in the surface runoff is determined by the quantity of a material in the environment and its characteristics. In an urban environment, the quantity of certain pollutants in the stormwater systems is generally associated with the intensity of land use. Within the San Jacinto Watershed, nutrients, pathogens, and organic enrichment/low dissolved oxygen are of concern.[4] Within the Santa Margarita Watershed, nitrate, sediment, indicator bacteria, and total dissolved solids (TDS) are of concern.[5] According to the MHSPA, the Project will be governed by the San Diego/Riverside County Municipal Separate Storm Sewer System (MS4) permit. A MS4 is a collection of structures designed to gather stormwater and discharge it into local streams and rivers.

4.9.3 REGULATORY FRAMEWORK

FEDERAL

Federal Clean Water Act

The Project is subject to federal permit requirements under the Federal Clean Water Act (CWA). The primary goals of the CWA are to maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. The CWA forms the basic national framework for the management of water quality and the control of pollution discharges; it provides the legal framework for several water quality regulations, including the National Pollutant Discharge Elimination System (NPDES), effluent limitations, water quality standards, pretreatment standards, antidegradation policy, nonpoint source discharge programs, and wetlands protection. The United States Environmental Protection Agency (U.S. EPA) has delegated the administrative responsibility for portions of the CWA to state and regional agencies. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The SWRCB works in coordination with the Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance, and restore water quality.

Under the NPDES permit program, the U.S. EPA establishes regulations for discharging stormwater by municipal and industrial facilities and construction activities. Section 402 of the CWA prohibits the discharge of pollutants into Waters of the United States from any point source unless the discharge is in compliance with an NPDES Permit.

The Anti-degradation Policy under the U.S. EPA's Water Quality Standards Regulations (48 F.R. 51400, 40 CFR 131.12, November 8, 1983), requires states and tribes to establish a three-tiered anti-degradation program to prevent a decrease in water quality standards.

[3] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 6-11. City of Murrieta.
[4] California Water Boards, Santa Ana – R8. (2019). *Santa Ana Region - Total Maximum Daily Loads (TMDLs).* Retrieved from California Water Boards Website: https://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/. Accessed July 31, 2019.
[5] Project Clean Water. (2019). *Santa Margarita WMA, Pollutants of Concern*. Retrieved from Project Clean Water Website: http://www.projectcleanwater.org/santa-margarita-wma/. Accessed July 31, 2019.

- Tier 1—Maintains and protects existing uses and water quality conditions that support such uses. Tier 1 is applicable to all surface waters.
- Tier 2—Maintains and protects "high quality" waters where existing conditions are better than necessary to support "fishable/swimmable" waters. Water quality can be lowered in such waters but not to the point at which it would interfere with existing or designated uses.
- Tier 3—Maintains and protects water quality in outstanding national resource waters. Water quality cannot be lowered in such waters except for certain temporary changes.

Anti-degradation was explicitly incorporated into the federal CWA through 1987 amendments, codified in §303(d)(4)(B), requiring satisfaction of anti-degradation requirements before making certain changes in NPDES permits.

Section 303(d) of the CWA requires the SWRCB to list impaired water bodies that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDL) for these waters.

Section 404 of the CWA is administered and enforced by the U.S. Army Corps of Engineers (USACE). Section 404 establishes a program to regulate the discharge of dredged and fill material into Waters of the United States, including wetlands and coastal areas below the mean high tide. USACE administers the day-to-day program, and reviews and considers individual permit decisions and jurisdictional determinations. USACE also develops policy and guidance and enforces Section 404 provisions.

STATE

California Porter-Cologne Water Quality Control Act (Porter-Cologne Act)

The Porter-Cologne Act (California Water Code §13000 et seq) is the principal law governing water quality regulation in California. It established a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act the policy of the State is as follows:

- That the quality of all the waters of the state shall be protected,
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and
- That the state must be prepared to exercise its full power and jurisdiction to protect the quality of water in the state from degradation.

The Porter-Cologne Act established nine RWQCB's (based on watershed boundaries as defined by their surrounding mountain chains and ridges) and the SWRB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Board decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrology regions. The State Water Board and Regional Water Boards have

numerous nonpoint source[6] pollution-related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

The Regional Water Boards regulate discharges under the Porter-Cologne Act primarily through issuance of NPDES permits for point source discharges for contaminants and waste discharge requirements for nonpoint source discharges. Anyone discharging or proposing to discharge materials that could affect water quality (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge. The SWRCB and the RWQCBs can make their own investigations or may require dischargers to carry out water quality investigations and report on water quality issues. The Porter-Cologne Act provides several options for enforcing waste discharge requirements and other orders, including cease and desist orders, cleanup and abatement orders, administrative civil liability orders, civil court actions, and criminal prosecutions.

The Porter-Cologne Act also implements many provisions of the CWA, such as the NPDES permitting program. Section 401 of the CWA gives the State Water Board the authority to review any proposed federally permitted or federally licensed activity that may impact water quality and to certify, condition, or deny the activity if it does not comply with state water quality standards. If the State Water Board imposes a condition on its certification, those conditions must be included in the federal permit or license. Except for dredge and fill activities, injection wells, and solid waste disposal sites, waste discharge requirements may not "specify the design, location, type of construction, or particular manner in which compliance may be had…." (Porter-Cologne Act §13360). Thus, waste discharge requirements ordinarily specify the allowable discharge concentration or load or the resulting condition of the receiving water, rather than the manner by which those results are to be achieved. However, the Regional Water Boards may impose discharge prohibitions and other limitations on the volume, characteristics, area, or timing of discharges and can set discharge limits such that the only practical way to comply is to use management practices. Regional Water Boards can also waive waste discharge requirements for a specific discharge or category of discharges on the condition that management measures identified in a water quality management plan approved by the State Water Board or Regional Water Boards are followed.

The Porter-Cologne Act also requires adoption of water quality control plans that contain the guiding policies of water pollution management in California. A number of statewide water quality control plans have been adopted by the State Water Board. In addition, regional water quality control plans (basin plans) have been adopted by each of the Regional Water Boards and are updated as necessary and practical. These plans identify the existing and potential beneficial uses of waters of the state and establish water quality objectives to protect these uses. The basin plans also contain implementation, surveillance, and monitoring plans. Statewide and regional water quality control plans include enforceable prohibitions against certain types of discharges, including those that may pertain to nonpoint sources. Portions of water quality control plans, the water quality objectives and beneficial use designations, are subject to review by the U.S. EPA. When approved, they become water quality standards under the CWA. The Project is subject to basin plans for the San Diego Region (SDRWQCB) and the Santa Ana Region (SARWQCB).

The Porter-Cologne Act establishes a comprehensive program for the protection of beneficial uses of the waters of the state. California Water Code Section 13050(f) describes the beneficial uses of surface and ground waters that may be designated by the state or regional board for protection as follows: "Beneficial

[6] According to the U.S. EPA, "NPS pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification." NPS pollution has many diffuse sources whereas point source pollution has a single, identified source. Retrieved from U.S. EPA Website: https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution. Accessed July 31, 2019.

uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." Waterbodies with substantial evidence indicating that the waterbody supports rare, threatened, or endangered species are identified as RARE. Twenty-three beneficial uses are now defined statewide; of these 23, 20 beneficial uses are recognized in the Santa Ana Basin (SARWQCB, 2016), and 13 are recognized in the Santa Margarita Basin (SDRWQCB, 2016). Tables 4.9-1 and 4.9-2 below identify the TMDL of pollutants, which is defined as the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. The tables list beneficial uses for each of the receiving waters from the Project site, located within the San Jacinto and Santa Margarita watersheds.

Table 4.9-1: Portion of Site Tributary to Keller Road Culverts (San Jacinto Watershed)

Receiving Waters	303(d) List Impairments and TDML [1] Pollutants	Designated Beneficial Uses [2]
Drainage Facilities and Minor Streams	None	None
Salt Creek	None	None
Canyon Lake (Railroad Canyon Reservoir)	Nutrients	MUN, AGR, GWR, REC1, REC2, WARM, WILD
San Jacinto River (Reach 1)	None	None
Lake Elsinore	Nutrients, PCBs [3], Organic Enrichments/ Low Dissolved Oxygen, DDT [4]	REC1, REC2, WARM, WILD
Temescal Creek (Reach 6)	None	None
Temescal Creek (Reach 5) [5]	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek (Reach 4)	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek (Reach 3) – Lee Lake	None	AGR, IND, GWR, REC1, REC2, WARM, WILD
Temescal Creek (Reach 2)	None	AGR, IND, GWR, REC1, REC2 WARM, WILD
Temescal Creek (Reach 1)	None	REC1, REC2, WARM, WILD
Santa Ana River (Reach 3)	Copper, Lead, Indicator Bacteria	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Prado Basin Management Zone Prado Flood Control Basin	pH	REC1, REC2, WARM, WILD, RARE
Santa Ana River (Reach 2)	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Santa Ana River (Reach 1)	None	REC1, REC2
Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough	None	REC1, REC2, COMM, WILD, RARE, MAR

Please use the following link for beneficial use designations:
https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/docs/2019/New/Chapter_3_June_2019.pdf

[1] TMDL Pollutant is defined as the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

[2] "Beneficial Use" is defined as a use by which water provides advantages for people and/or wildlife, and therefore can function as a water quality indicator. 303(d) Impairments from latest approved 2014 and 2016 combined list.
https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[3] Polychlorinated biphenyls (PBCs) is a group of organic compounds used in manufacturing plastics.

[4] Dichlorodiphenyltrichloroethane (DDT) is found in insecticides and pesticides.

[5] Temescal Creek (Reach 5) is the closest RARE waterbody to the Project site and is located approximately 24 miles from the Project site

Source: Chang Consultants. (2018). *Project Specific Water Quality Management Plan*. Rancho Santa Fe, CA: Chang Consultants. Appendix 9.7.2 of EIR.

Table 4.9-2: Portion of Site Tributary to I-215 (Santa Margarita Watershed)

Receiving Waters	303(d) List Impairments and TDML Pollutants	Designated Beneficial Uses [1]
Drainage Facilities and Minor Streams	None	None
Warm Springs Creek	Indicator Bacteria, Chlorpyrifos [2], Iron, Manganese, Phosphorus, Total Nitrogen as N	MUN, AGR, IND, PROC, REC1, REC2, WARM, WILD
Murrieta Creek	Phosphorus, Chlorpyrifos, Copper, Indicator Bacteria, Iron, Manganese, Nitrogen, Toxicity	MUN, AGR, IND, PROC, GWR, REC1, REC2, WARM, WILD
Santa Margarita River (Upper)	Phosphorus, Toxicity, Indicator Bacteria, Iron, Manganese, Nitrogen	MUN, AGR, IND, REC1, REC2, WARM, COLD, WILD, RARE
Santa Margarita River (Lower)	Indicator Bacteria, Benthic Community Effects, Chlorpyrifos, Total Nitrogen as N, Phosphorus, Toxicity	MUN, AGR, IND, PROC, REC1, REC2, WARM, COLD, WILD, RARE
Santa Margarita Lagoon	Eutrophic [3]	REC1, REC2, EST, WILD, RARE, MAR, MIGR, SPWN

[1] "Beneficial Use" is defined as a use by which water provides advantages for people and/or wildlife, and therefore can function as a water quality indicator. 303(d) Impairments from latest approved 2014 and 2016 combined list.
https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[2] Chlorpyrifos is found in pesticides.
[3] Eutrophic based on nutrients from agriculture and storm runoff.

State Water Resources Control Board

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. The Project site lies within the jurisdiction of the SDRWQCB and SARWQCB.

The NPDES permit is broken up into two phases: I and II. Phase I requires medium and large cities, or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges. Phase II requires regulated small MS4s in urbanized areas, as well as small MS4s outside the urbanized areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Concerning the Project, the NPDES permit is divided into two parts: construction and post-construction. The construction permitting is administered by the SWRCB, while the post-construction permitting is administered by the RWQCB. Development projects typically result in the disturbance of soil that requires compliance with the NPDES General Permit, *Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activities* (Order No. 2012-0006-DWQ, NPDES Number CAS000002) (General Construction Permit). This Statewide General Construction Permit regulates discharges from construction sites that disturb one or more acres of soil.

The SWRCB has issued and periodically renews a statewide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (GCASP) and a statewide General Industrial Activities Stormwater Permit (GIASP) for projects that do not require an individual permit for these activities. The GCASP was adopted in 2009 and further revised in 2012 (Order No. 2012-0006-DWQ). The most recent GIASP (Order No. 2014-0057-DWQ) was adopted in 2014 and requires dischargers to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce or prevent industrial pollutants in stormwater discharges, eliminate unauthorized non-storm discharges, and conduct visual and analytical stormwater discharge monitoring to verify the effectiveness of the SWPPP and submit an annual report.

By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre of total land area must comply with the provisions of this NPDES Permit and develop and implement an effective SWPPP. The SWPPP is required to contain a site map, which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the Project site. The SWPPP is required to list Best Management Practices (BMPs) the discharger would use to protect stormwater runoff and the placement of those BMPs. Examples of BMPs include temporary vegetation, silt fences, and vegetative filter strips. Additionally, the SWPPP must contain the following elements: a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Construction General Permit Section A describes the elements that must be contained in an SWPPP. A Project Applicant must submit a Notice of Intent (NOI) to the SWRCB to be covered by the NPDES General Permit and prepare the SWPPP before beginning construction. SWPPP implementation starts with the commencement of construction and continues through project completion. Upon project completion, the applicant must submit a Notice of Termination (NOT) to the SWRCB to indicate that construction is completed.

The Municipal Stormwater Permitting Program regulates stormwater discharges from MS4s. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. The MS4 permits require the discharger to develop and implement a Stormwater Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in CWA §402(p). The management programs specify what BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations.

For construction activities that would result in the disturbance of one acre or more, permittees must develop, implement, and enforce a program to reduce pollutant runoff in stormwater. This includes: (1) a program to prevent illicit stormwater discharges; (2) structural and non-structural BMPs to reduce pollutants in runoff from construction sites; and (3) preventing discharges from causing or contributing to violations of water quality standards. Permittees are required to review construction site plans to determine potential water quality impacts and ensure proposed controls are adequate. These include preparation and submission of an Erosion and Sediment Control Plan (ESCP) with elements of an SWPPP, prior to issuance of building or grading permits. The 2012 MS4 permit requires that the ESCP be developed by a Qualified SWPPP Developer. Permittees are required to develop a list of BMPs for a range of construction activities.

REGIONAL

Riverside County Drainage Area Master Plan

The Riverside County Drainage Area Master Plan (DAMP) for the Santa Ana Region (RWQCB 2015), Riverside County's Water Quality Management Plan (RCWQMP), and the Santa Margarita Region Water Quality Management Plan (SMRWQMP) were developed to further address post-construction urban runoff from new development and significant redevelopment projects under the jurisdiction of the co-permittees. The DAMP is intended to provide guidelines for project-specific post-construction BMPs and

for regional and sub-regional source control BMPs and structural BMPs to address management of urban runoff quantity and quality to protect receiving waters. The DAMP also illustrates the jurisdictions covered by the Riverside County RWQCB, each of which was issued a MS4 permit for their respective jurisdiction (RWQCB 2015). The RCWQMP and SMRWQMP identify the BMPs, including design criteria for treatment control BMPs that may be applicable when considering any map or permit for which discretionary approval is sought. Examples may include tentative tract maps, parcel maps with land-disturbing activity, conditional permits, and discretionary grading permits where the project is not part of a master plan of development.

The RCWQMP addresses post-construction urban runoff from new development and redevelopment projects within the Santa Margarita River Region. The RCWQMP provides guidelines for the management of urban runoff quantity and quality and the protection of receiving waters through identification and implementation of source control and structural BMPs on a regional and sub-regional level. Design criteria for treatment control BMPs are also given for application on a project-level basis to minimize potential impacts of urban runoff.

Final Upper Santa Margarita Watershed Integrated Regional Water Management Plan Update

The final the Upper Santa Margarita Watershed Integrated Regional Water Management Plan (IRWMP)[7], prepared and governed by the Regional Water Management Group (Rancho California Water District, Riverside County Flood Control and Water Conservation District, and County of Riverside) is a planning and management tool to facilitate efficient use of water resources and to develop effective water conservation measures, using a regional and watershed-based approach. The intent of the IRWMP is to enable greater watershed-wide coordination and management of water resources within the Santa Margarita Watershed as a whole, and adjoining watersheds, as well as regional planning and funding efforts. Through the IRWMP, regional water agencies, flood control districts, counties, cities, federal, state and local agencies, and other stakeholder groups actively collaborate across jurisdictional boundaries to implement water resource management plans. The IRWMP also provides opportunities to identify and evaluate information on present and future needs within the watershed for consideration in the California Water Plan.

Development of the IRWMP for the Upper Santa Margarita Watershed represents a cooperative effort on the part of three agencies (Rancho California Water District, RCFCWCD, and County of Riverside) that have authority for planning and implementation of water management strategies within the watershed, and the Project itself.

Water quality in the region is further guided by the Santa Margarita River Water Quality Improvement Plan (WQIP), which "is a requirement of updated stormwater regulations adopted by the Regional Water Quality Control Board (Regional Board) according to Order No. R9-2013-0001, as amended by Order Nos. R9 2015-0001 and R9-2015-0100. The ultimate goal of the WQIP is to protect, preserve, enhance, and restore water quality of receiving water bodies. These improvements in water quality will be

[7] Rancho California Water District. (2014). *Final Upper Santa Margarita Watershed Integrated Regional Water Management Plan Update*. Retrieved from Rancho California Water District Website: https://www.ranchowater.com/256/2014-USMW-IRWM-Plan-Update. Accessed April 2, 2019.

accomplished through an adaptive planning and management process that identifies the highest priority water quality conditions within the watershed and implements strategies to address them."[8]

LOCAL

Murrieta General Plan 2035

INFRASTRUCTURE ELEMENT[9]

Goal INF-1: ***New development and redevelopment is coordinated with the provision of adequate infrastructure for water, sewer, storm water, and energy.***

Policy INF-1.1: Encourage future development to occur in areas where infrastructure for water, sewer, and storm water can most efficiently be provided.

Policy INF-1.2: Discourage development in areas without connections to existing infrastructure, unless infrastructure is being provided.

Policy INF-1.4: Ensure that new development and redevelopment provides infrastructure for water, sewer, and storm water that adequately serves the proposed uses, and that has been coordinated with affected infrastructure providers.

Policy INF-1.11: Ensure sufficient levels of storm drainage service are provided to protect the community from flood hazards and minimize the discharge of materials into the storm drain system that are toxic or which would obstruct flows.

Policy INF-1.13: Cooperate in regional programs to implement the National Pollutant Discharge Elimination System program.

Policy INF-1.15: Continue to implement the City's residential informational and outreach program by providing homeowners with BMPs for activities such as, but not limited to:

- Disposal of fats, oils, and grease
- Disposal of garden waste
- Disposal of household hazardous waste
- Disposal of pet waste
- Garden care and maintenance
- Vehicular repair and maintenance
- Vehicular washing

Policy INF-1.18: Minimize the adverse effects of urbanization upon drainage and flood control facilities.

[8] Project Cleanwater. (2019). *Santa Margarita Water Quality Improvement Plan*. Retrieved from Project Cleanwater Website: http://www.projectcleanwater.org/santa-margarita-water-quality-improvement-plan/. Accessed August 1, 2019.

[9] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 6: Infrastructure Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/732/06---Infrastructure-Element-PDF. Accessed August 1, 2019.

Policy INF-1.19: Encourage the City and the Riverside County Flood Control and Water Conservation District improve the storm drain system in a way that respects the environment.

Murrieta Jurisdictional Runoff Management Program

The City of Murrieta Jurisdictional Runoff Management Program (JRMP),[10] adopted in June 2012, describes the specific urban runoff management programs and activities to be implemented in order to ensure compliance with requirements of the MS4 permit issued to the Riverside County Permittees by the SDRWQCB for the Santa Margarita Region (Murrieta, 2017). The JRMP describes measures to be implemented to achieve compliance with the MS4 permit and to reduce pollutants in urban runoff to the maximum extent practicable. It is also the principal document that comprehensively translates the MS4 permit requirements into actions that the City is implementing to comply with the permit. The JRMP was developed jointly by the Riverside County Co-Permittees, which include the County of Riverside, RCFCWCD, City of Temecula, and the City of Wildomar, to promote consistency in the compliance programs implemented within the Santa Margarita Region.

Urban stormwater runoff is defined in the MS4 permit as including stormwater runoff, dry weather surface runoff, wash water-related to street cleaning or maintenance, infiltration, and drainage related to storm events. The MS4 permit regulates the discharge of all wet and dry weather urban stormwater runoff and requires the city to implement BMPs to reduce pollutants in stormwater. Suggested BMPs include, but are not limited to: (1) public educational programs on the impacts of potentially harmful chemicals dumped into stormwater drainage systems; (2) implementing landscape maintenance measures including minimization of the use of fertilizers and pesticides and training of personnel to properly implement BMPs and recognize prohibited discharges into the storm drain system; and (3) implementing good housekeeping principles for the cleanup and proper handling and storage of potential contaminants in the maintenance and repair of vehicles and equipment.

Murrieta Municipal Code Section 8.36.200, Prohibited Discharges

Section 8.36.200 of Murrieta Municipal Code (MC), for the Article of Prohibited Discharges and Illegal Connections, states that all discharges to the City's MS4 permit are prohibited pursuant to the NPDES permit. Discharges shall specifically comply with the requirements outlined in the respective general permits.

Murrieta Municipal Code Section 8.36.210, Prohibited Illicit Connections

Section 8.36.210 of the Murrieta MC states that any connection to the City's MS4 permit deemed to be an "illicit connection" pursuant to the NPDES permit is prohibited. For example, any non-stormwater sources such as sanitary wastewater or effluent from septic tanks are prohibited from entering stormwater drains. The prohibition against illicit connections shall apply regardless of whether the connection was established prior to the date on which this chapter was enacted.

[10] City of Murrieta. (2012). *City of Murrieta Jurisdictional Runoff Management Program, Santa Margarita Region, Order No. R9-2010-0016*. Retrieved from RCFCWCD Website: http://rcflood.org/downloads/NPDES/Documents/SM_JRMP/MurrietaJRMP.pdf. Accessed August 1, 2019.

Murrieta Municipal Code Chapter 15.52, Grading, Erosion and Sediment Control

Murrieta's MC specifies grading permit requirements, dust prevention, haul route requirements, and requirements for an erosion and sediment control plan. This minimizes debris on public streets and sets requirements for compliance with the NPDES permit program, among others.

Murrieta Municipal Code Chapter 15.56, Flood Damage Prevention Regulations

Murrieta's regulations with respect to flood damage prevention are included in Chapter 15.56, Flood Damage Prevention Regulations of the MC. The purpose of this chapter is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. Section 15.56.040, Methods of reducing flood losses, includes the following provisions:

A. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

C. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood water;

D. Controlling fill, grading, dredging, and other development which may increase flood damage; and

E. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

4.9.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality (see Impact 4.9-1);
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin (see Impact 4.9-2);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on-or off-site?
    - 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? (see Impact 4.9-3)

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation (see Impact 4.9-4);
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (see Impact 4.9-5).

METHODOLOGY AND ASSUMPTIONS

The Project is evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning hydrology and water quality. This analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on hydrology and water quality examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on significance criteria/threshold's application outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The foundations for the baseline conditions and impact analyses are: field observations conducted by Kimley-Horn; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on hydrology and water quality considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

Also considered in the analysis is the Preliminary Drainage Study and WQMP prepared by Chang Consultants in 2018. The Preliminary Drainage Study evaluates the 10- and 100-year existing and proposed condition hydrology and detention analyses for the Project site.

HYDROLOGIC ANALYSIS

The RCFCWCD's *Hydrology Manual* criteria was the basis for the hydrology analyses. The 10- and 100-year existing and proposed condition rational method results are included in the Preliminary Drainage Study in Appendix 9.7.1. The overall study area was divided into eight major drainage basins (Major Basin 100-800). The Major Basins are shown in Exhibit 4.9-2, *Drainage Basin Map*. The Major Basins also encompass the McElwain Road extension alignment.

DETENTION ANALYSIS

In order to size the detention basins for the Project site, the CivilDesign Unit Hydrograph computer program was used for synthetic hydrograph analyses which determined the required 10-year, 24-hour detention volume. The 10-year, 24-hour detention volume typically requires the largest storage volume of the 12 detention events, so is commonly used for preliminary design.

PROJECT DESIGN FEATURES

- The Project design has avoided the steeper slopes (50 percent grade or more[11]) and has set aside over 600 acres of natural open space, which reduces construction-related grading impacts and decreases the total area of impervious surfaces from the previously approved specific plan.
- The drainage plan consists of two systems that allow for separation of natural runoff and urban runoff.
    - The first system would collect perimeter drainage from the open space areas and conveys runoff through a system of underground storm drain facilities to the natural drainage watercourse in the Linear Nature Park (Open Space 2). This system would have a debris basin in the upper portion of the natural stream. See Exhibit 3-15, *Storm Drains and Water Quality Basins*.
    - The second system would convey urban runoff from the developed areas. The system would collect the stormwater drainage from the inlets and direct the flow through underground storm drain facilities within the streets and various drainage easements to on-site detention basins. The detention basins are designed to attenuate post-development runoff to the pre-development conditions. The treated runoff is then discharged at pre-development flows to the natural drainage courses traversing the Project site.
- The Project would utilize water quality and detention basins, which will be surrounded by trees and naturalized planting areas to decrease runoff, improve soil stabilization, and add to the aesthetics of the site.

4.9.5 IMPACTS AND MITIGATION MEASURES

Impact 4.9-1: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Grading activities during construction, typical of what is found in other area large master planned communities, will occur. Bare soils would be exposed, and stockpiles would be created. Fuels, lubricants, and solid and liquid wastes would be stored within active construction areas. If the construction areas are not properly managed to contain loose soils and liquid and solid contaminants, temporary water quality impacts could occur due to runoff from the active construction site.

[11] Note: The Murrieta MC Section 16.24.060 describes a natural slope category of 50 percent and over as an excessive slope condition and development is prohibited.

The Project would be required to comply with the NPDES Construction General Permit, the water quality policies of the Murrieta GP, the Riverside County DAMP, and the Murrieta's JRMP, all which require the preparation and implementation of a SWPPP in order to obtain grading and building permits. The SWPPP would identify site-specific construction BMPs to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater runoff from the Project site. Construction BMPs would include, but not be limited to, the following:

- Minimization of disturbed areas to the portion of the Project site necessary for construction;
- Stabilization of exposed or stockpiled soils and cleared or graded slopes;
- Establishment of permanent re-vegetation or landscaping as early as is feasible;
- Removal of sediment from surface runoff before it leaves the Project site by silt fences or other similar devices around the site perimeter;
- Diversion of upstream runoff around disturbed areas of the Project site;
- Protection of all storm drain inlets on-site or downstream of the Project site to eliminate entry of sediment;
- Prevention of tracking soils and debris off-site through use of a gravel strip or wash facilities, which will be located at all construction exits from the Project site;
- Proper storage, use, and disposal of construction materials, such as solvents, wood, and gypsum; and
- Continual inspection and maintenance of all BMPs through the duration of construction.

BMPs are designed to control and prevent discharges of pollutants that can adversely impact the downstream surface water quality. Construction activities are also required to comply with the City of Murrieta's Stormwater/Urban Runoff Ordinance, the Erosion and Sediment Control Ordinance, and other required regulations. With the implementation of BMPs as described in the SWPPP (see Mitigation Measure HYD-1 [MM HYD-1], see page 4.9-18), the Project is not anticipated to violate water quality standards during construction. Therefore, impacts would be considered less than significant with mitigation incorporated.

Off-Site Construction Impacts

Similarly, the off-site circulation improvements for the McElwain Road extension would involve grading and roadway construction equipment. These construction activities will not cause any long-term impacts to water quality standards in consideration of the above (NPDES permitting and associated SWPPP measures, including MM HYD-1 [see page 4.9-18]). Construction of the sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain improvements along Keller Road will not cause any significant water quality impacts. Construction will be temporary, gradually moving down the length of the roads as trenching occurs and then is backfilled and the roads are resurfaced. Off-site construction would utilize the same BMPs as the on-site construction, listed above. Examples construction BMPs that may be used include erosion control blankets for slope stabilization and wind erosion control; slope drains to intercept and direct surface runoff or groundwater into a stabilized watercourse; or check dams constructed of rock, gravel bags, sandbags, fiber rolls, or other materials for soil stabilization and sediment

control. Per MM HYD-2 (see page 4.9-19), the Project Applicant shall prepare a Final Project-Specific WQMP with operations and maintenance (O&M) Plan which will identify Project BMPs.

OPERATIONS

The Project has been redesigned from the previously approved Specific Plan, decreasing the number of residential units by more than 50 percent. By reducing the residential units and associated development footprint and clustering development, the impervious surface area is lessened. However, to collect surface water and runoff from the impervious areas, an extensive drainage plan will be in place which includes underground storm drains, culverts, open ditches, swales, and detention basins. The basins are designed to weaken the flow of post-development runoff to pre-development conditions, and have been designed to treat runoff for pollutants, pursuant to SWRCB regulations.

Typical stormwater-related pollutants of concern for large residential mixed-use developments include the following:

- Pesticides and herbicides and an increase in nutrients from fertilizers used for the landscaped areas;
- Trash/debris from the park areas;
- Fluids from vehicles (motor oil, transmission fluid, antifreeze, brank fluid, gasoline, etc.) spilled onto paved areas; and
- Organic compounds and animal waste.

The Project would be required to comply with the NPDES Municipal Permit, the Murrieta GP, and the DAMP, which require implementation of post-construction BMPs in accordance with the City's JRMP. In addition, the MS4 permit for the Santa Margarita Region requires the preparation of a project-specific WQMP for all development projects and, as such, a project-specific WQMP has been prepared for the Project. The Project-Specific WQMP (see Appendix 9.7.2) has incorporated combined low-impact development (LID) treatment, hydrologic control BMPs, and sediment supply BMPs. A final WQMP will be required to address BMP sizing and the O&M plan.

The WQMP is intended to comply with the requirements of City of Murrieta Stormwater and Runoff Management and Discharge Controls MC Section 8.36.320 and has outlined all BMPs designed to meet water quality standards and mitigate any adverse impacts; see MM HYD-2 (see page 4.9-19). Therefore, impacts would be less than significant with mitigation incorporated.

Off-Site Operations Impacts

Operation of the sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not degrade surface or groundwater quality. After construction, these improvements will be subsurface. Sewer lines shall be located and sized in accordance with the Development Design Conditions prepared by the EMWD for the Specific Plan area (Appendix 9.10.1).

The McElwain Road extension will be in the eastern lower elevations of the site, with the off-site portion generally running parallel to I-215. The MHSPA requires appropriate grading treatments and landscaping along the McElwain Road extension, to further minimize adverse effects to water quality. Any grading required for the construction of McElwain Road within the open space area would be landscaped with a

stabilized, native, non-irrigated hydroseed mix. In addition, 10-foot wide water quality gravel trenches, also called infiltration trenches, will be placed along McElwain Road (BMP 12). During final engineering, an analysis shall be performed for each individual gravel trench along McElwain Road.[12] These trenches will slow the flow-rate of runoff, filter runoff, convey runoff to the appropriate drainage structures, and capture runoff to minimize overland flow beyond the trenches. Lastly, all off-site drainage flows entering the Project development storm drain pipes shall have trash racks per American Public Works Association 361-0 at the entrance of the storm drain pipe.[13]

As stated previously, the WQMP is intended to comply with the City's Stormwater and Runoff Management and Discharge Controls requirements and has outlined all BMPs designed to meet water quality standards and mitigate any adverse impacts; see MM HYD-2 (see page 4.9-19). Therefore, impacts would be less than significant with mitigation incorporated.

MITIGATION MEASURES

MM HYD-1: Prior to commencing grading, the Project Applicant shall comply with applicable construction water quality regulations including the NPDES General Construction Permit, which shall be obtained from the Regional Water Quality Control Board. This process requires that the applicant electronically submit Permit Registration Documents (PRDs) prior to commencement of construction activities in the Storm Water Multiple Application and Report Tracking System (SMARTS). PRDs consist of the NOI, Risk Assessment, Post-Construction Calculations, a Site Map, the SWPPP, a signed certification statement by the Legally Responsible Person, and the first annual fee.

The required SWPPP must be submitted to the City of Murrieta, identifying specific actions and BMPs to prevent stormwater pollution during construction activities. The SWPPP shall identify a practical sequence for BMP implementation, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall include but not be limited to the following elements:

a. Comply with the requirements of the State of California's most current Construction Stormwater Permit.

b. Temporary erosion control measures shall be implemented on all disturbed areas.

c. Disturbed surfaces shall be treated with erosion control measures during the October 15 to April 15 rainy season.

d. Sediment shall be retained on-site by a system of sediment basins, traps, or other BMPs.

e. The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate discharge of materials to storm drains.

[12] Chang Consultants. (2018). *Project Specific Water Quality Management Plan*. Rancho Santa Fe, CA: Chang Consultants. Appendix 9.7.2 of EIR.
[13] Michael Baker International (MBI). (2019). *City of Murrieta Tentative Tract Map No. 35853*. Temecula, CA: MBI. Available for review at the City of Murrieta's Planning Division.

f. BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the SARWQCB to determine adequacy of the measure.

g. In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the duration of construction.

h. Prior to the issuance of the first grading permit, the Project Applicant shall submit the Final Tentative Tract Map that includes the water quality BMPs for approval by the City of Murrieta Engineer. The City of Murrieta Engineer shall ensure that all applicable water quality standards are met before approving the SWPPP.

MM HYD-2: The Project Applicant shall prepare a Final Project-Specific WQMP with O&M Plan for submittal together with the associated grading and improvement plans which must be approved prior to the issuance of a building or grading permit. These documents shall be prepared in accordance with applicable City (Murrieta) and County (Riverside) water quality requirements, for review and approval by the City of Murrieta, including the following:

- Site Design BMPs
- Source Control BMPs
- Treatment Control BMPs
- BMP Sizing
- Equivalent Treatment Control Alternatives
- Regionally-Based Treatment Control BMPs
- O&M Responsibility for Treatment Control BMPs

Impact 4.9-2: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The Project site is vacant, does not contain any active or decommissioned groundwater wells, and construction activities do not require the use of groundwater wells. No construction-related impacts are anticipated.

A Project geotechnical report[14] (Appendix 9.5), identified groundwater at multiple locations on the Project site. It appears the site has a perched groundwater table above the bedrock, which is not anticipated to be affected during construction. If groundwater is encountered during construction, some localized, temporary dewatering may be needed.

As identified in the MHSPA and outlined in Draft EIR Section 3.0, *Project Description*, water service to the Project would be provided by the EMWD. All development areas of the Project would use a public water distribution system with the EMWD as the purveyor. Approximately 75 percent of the EMWD's potable water demand is supplied by imported water from the Metropolitan Water District of Southern California through the Colorado River Aqueduct and connections to the State Water Project. Approximately 25 percent of the EMWD's potable water demand is supplied by EMWD groundwater wells. The majority of the groundwater produced by the EMWD comes from wells in the Hemet and San Jacinto area; EMWD also has wells in the Moreno Valley, Perris Valley, and Murrieta areas. A Water Supply Assessment (WSA) has been prepared by the EMWD (Appendix 9.10.2) and is discussed in the Draft EIR (Section 4.15, *Utilities and Service Systems*) and the MHSPA. The WSA demonstrates that the projected water supplies indicated in the EMWD's Urban Water Management Plan would meet the projected water demands for the Project.

The Project has been redesigned to reduce the development footprint and residential density and includes the preservation of over 600 acres in permanent natural open space, which allows for greater infiltration of rainfall during storm events.

Therefore, the Project would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. No significant impact would occur.

Off-Site Construction and Operations Impacts

Refer to the construction and operations discussion above.

MITIGATION MEASURES

No mitigation is required.

Impact 4.9-3: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION AND OPERATIONS

Construction of the Project would alter the existing drainage pattern of the site, considering the existing site is generally undeveloped with little existing impervious surfaces. An NPDES Construction Stormwater Permit shall be obtained and a SWPPP would be implemented to minimize soil erosion and siltation on and off the site; see MM HYD-1 (see page 4.9-18). BMPs as outlined in the WQMP (Appendix 9.7.2) would also be implemented during construction and operation of the site to minimize erosion and sedimentation (see MM HYD-2, see page 4.9-19). In addition to the SWPPP and WQMP, the Project would comply with

[14] Saiid, S. and Riha, R. (2014). *Update Geotechnical Report, Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and I-215, Murrieta, California*. Temecula, CA: Leighton and Associates, Inc.

other applicable local and regional water quality requirements described in the Regulatory Framework discussion. Overall drainage patterns will remain consistent, with flows directed to both the San Jacinto and Santa Margarita watersheds, with water quality measures applicable to the respective watershed.

Project design has retained over 600 acres in natural open space, which reduces construction-related grading and associated erosion. In consideration of Project Design Features (PDFs) and existing regulations, with implementation of MM HYD-1 and MM HYD-2 (see pages 4.9-18 through 4.9-19), no significant impacts are anticipated.

Off-Site Construction and Operations Impacts

Refer to the construction and operations discussion above.

MITIGATION MEASURES

Refer to MM HYD-1 and MM HYD-2 on pages 4.9-18 through -19.

Impact 4.9-3: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

iii. 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?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION AND OPERATIONS

The Project site is presently undeveloped covered mostly with pervious or permeable surfaces. Implementation of the Project would introduce impervious surfaces on the site; therefore, increasing the amount and rate of surface runoff. To address this concern, the Project Applicant prepared a Preliminary Drainage Study (Appendix 9.7.1) based on the RCFCWCD's *Hydrology Manual* criteria. Table 1 of the Preliminary Drainage Study shows that, without mitigation, the Project would increase surface runoff flows for both the 10-year and 100-year events in certain drainage areas. The Project's drainage system has been designed to mitigate this impact, by providing on-site detentions basins and bio-retention basins, combined with a comprehensive on-site and off-site storm drainage system (shown in Exhibit 3-13, *Drainage Plan*). These drainage design recommendations are included in the Project design plans as shown in the MHSPA and Tentative Tract Map. Project drainage has been designed to ensure that runoff flows leaving the site do not exceed existing conditions, thereby avoiding impacts to downstream facilities.

In addition to the on-site drainage system, the Project proposes relatively minor off-site drainage improvements to convey Project flows northeasterly from the site, along Keller Road, then across I-215 to existing drainage facilities (refer to Exhibit 3-13, *Drainage Plan*). These off-site improvements are described further below under Off-Site Construction and Operations Impacts.

Prior to grading permit issuance, the Project Applicant will be required to submit final grading and drainage plans for review and approval by the City of Murrieta and the EMWD, to ensure that the Project does not result in increased flows off-site or otherwise significantly impact downstream drainage facilities. The drainage design would prevent flooding on- and off-site due to an increase in surface water runoff, resulting in impacts to surface runoff being less than significant with mitigation incorporated.

Off-Site Construction and Operations Impacts

The proposed drainage system design includes relatively minor off-site improvements. In addition to typical roadway drainage facilities within the McElwain Road extension, the Project requires a drainage conduit outlet (with associated rock riprap for energy dissipation) across the site within the City of Menifee on the north side of Keller Road, west of Zeiders Road, at drainage node 48 (see Exhibit 4.9-3). This drainage outlet is anticipated to include a headwall and wingwall structure, consisting of either a concrete box culvert or several smaller diameter storm drain pipes (approximately 54 inches in diameter). Note that this is an existing drainage outlet, and the Project Applicant is improving this existing outlet at the request of the City of Murrieta and EMWD, as part of the Keller Road improvements. Because the improvements are within the City of Menifee, they will be involved in the review and approval of the infrastructure plans/permits. In addition, the drainage outlet was shifted slightly west to avoid private property owners at the northwest corner of Keller Road and Zeiders Road, with proposed improvements now planned within the existing Keller Road right-of-way. From this outlet Project drainage is conveyed along the north side of Keller Road, within existing right-of-way, to a new drainage conduit that will run under I-215, outletting in an existing drainage basin at the northeast corner of Keller Road and I-215. With proposed on-site and off-site improvements (Exhibit 4.9-3, *Proposed Condition Rational Method Work Map*), the Project will not cause additional flooding, exceed the capacity of existing drainage facilities, or impede or redirect flood flows such that on-site or off-site areas are significantly impacted. Water quality effects of the Project are addressed under Impact 4.9-1 above.

The Project also proposes off-site sewer line improvements within Zeiders Road. This will have no significant impact on drainage facilities or flood control, as this is a typical pipeline installation within an existing road right-of-way.

MITIGATION MEASURES

MM HYD-3: Prior to issuance of grading permits, the Project Applicant shall submit final tract map(s) for review and approval by the City of Murrieta and the City of Menifee, including final drainage design plans supported by a final drainage study. The tract maps, grading plans, and final drainage study shall demonstrate compliance with applicable City and County drainage plans, policies, design guidelines and regulations including but not limited to City of Murrieta Municipal Code Chapter 15.52 Grading, Erosion, and Sediment Control and Chapter 16.94 Tentative Maps, and City of Menifee Municipal Code Chapter 8.26 Grading Regulations.

Impact 4.9-4: Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

The Project is inland and is not at risk for inundation due to a tsunami, since it is more than 25 miles from the Pacific Ocean. The Project site is not within a seiche zone, since no large bodies of water border the Project site.

A review of the FEMA FIRMs was conducted to determine whether the Project site is located within a flood-prone zone. The Project site is located on mapped Panels 2070 and 2705 of 3805 (Map No. 06065C2705G and 06065C2070G, August 28, 2008) and unmapped panels 2064 and 2710 of 3805. According to the mapped panels, portions of the Project site on these panels are located within the designated Zone X, which are areas determined to be outside of the 0.2 percent annual chance (500-year) floodplain. For unmapped Panel 2064, no special flood hazard areas are present, and for unmapped Panel 2710, unincorporated areas are located in Zone D and all other areas are located in Zone X. Zone D represents areas in which flood hazards are undetermined, but possible. Therefore, the mapped areas of the Project site are located outside the 100-year flood hazard area, but the unmapped areas have an undetermined flood risk.

The *Riverside County General Plan* Dam Failure Inundation Zones map[15] shows the areas within the cities of Murrieta, Temecula, Menifee, Wildomar, and unincorporated Riverside County regions that are susceptible to inundation from regional water bodies, including Lake Vail, Lake Skinner, and Diamond Forebay, Diamond West Dam, and Diamond Valley Lake. According to the Dam Failure Inundation Zones map, the Project site is not located within a dam hazard zone that is susceptible to inundation from any of the above-mentioned water bodies. Thus, implementation of the Project would not expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam.

Therefore, the Project is not at risk for release of pollutants due to Project site inundation.

Off-Site Construction and Operations Impacts

Refer to the construction and operations discussion above.

MITIGATION MEASURES

No mitigation is required.

Impact 4.9-5: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

The Project is underlain by two groundwater basins – the Murrieta-Temecula Basin and the French Valley. Neither basin is subject to a Sustainable Groundwater Management Plan,[16] although the Murrieta-

[15] Riverside County Planning Department. (2015). *Riverside County General Plan, Chapter 6: Safety Element*. Figure S-10: Dam Failure Inundation Zones. Page S-39. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch06_Safety_DEC2016.pdf?ver=2017-10-06-093651-757. Accessed August 1, 2019.

[16] California Department of Water Resources (CDWR). (2019). *SGMA Basin Prioritization Dashboard*. Retrieved from CDRW Website: https://gis.water.ca.gov/app/bp2018-dashboard/p1/. Accessed April 2, 2019.

Temecula Basin (or "Temecula Valley Groundwater Basin") is subject to the Temecula Valley Basin Salt and Nutrient Management Plan (SNMP), completed in 2014. A rather small portion (approximately 20 percent) of the Project drains to the Murrieta-Temecula Basin (westerly and southernmost portions). The Project is also within the Upper Santa Margarita Watershed Integrated Regional Water Management Plan area. As discussed above under Water Quality (Impact 4.9-1), the Project will meet applicable local and regional water consumption and water quality goals of the RCFCWCD, the City of Murrieta, and the City of Menifee for improvements north of Keller Road.

Off-Site Construction and Operations Impacts

Refer to the construction and operations discussion above.

MITIGATION MEASURES

No mitigation is required.

4.9.6 CUMULATIVE IMPACTS

A less than significant impact with mitigation incorporated would occur as a result of the Project in regard to hydrology and water quality. According to the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in a significant and unavoidable impact on water resources.[17] According to the City of Murrieta GP 2035 EIR, buildout of the Murrieta GP would result in a less than significant impact on hydrology, drainage, and water quality following adherence to and/or compliance with the existing regulatory framework, Murrieta MC, Murrieta GP goals and policies, and mitigation measures.[18] A significant cumulative impact would occur if cumulative projects would adversely impact hydrology and water quality.

The Murrieta GP EIR also concluded that compliance with the Murrieta MC, which incorporates federal and state regulations and guidelines pertaining to stormwater runoff, would ensure that impacts associated with water quality would not be cumulatively significant. No cumulative impacts were identified related to water quality because these regulations, including the General Construction Permit (SWRCB, 2012) and the Murrieta JRMP, are intended to mitigate cumulative impacts from all new development and redevelopment. Compliance with existing regulations would reduce potential cumulative impacts to a less than significant level.

Implementation of the Project would have the potential to result in sources of polluted runoff during construction and would result in an increase in impervious surfaces following construction that would potentially result in the contribution of nonpoint source pollution. However, the Project would be consistent with the Murrieta GP and all policies applicable to new development projects upon its annexation into the City of Murrieta. As discussed under Impact 4.9-1, prior to construction of the Project, the Project Applicant will be required to prepare and implement a SWPPP that would outline the BMPs that would reduce water quality impacts during construction to a less than significant level. Prior to the

[17] Riverside County Planning Department. (2015). *County of Riverside Environmental Impact Report No. 521, Section 5.0: Additional Required CEQA Topics*. Page 5-199. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/05-00_AdditionalTopics.pdf. Accessed August 1, 2019.

[18] City of Murrieta. (2011). *Murrieta General Plan 2035, Section 5-13: Hydrology, Drainage, and Water Quality*. Page 5.13-46. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/758/05-13---Hydrology-Drainage-and-Water-Quality-PDF. Accessed August 1, 2019.

issuance of grading permits, the SWPPP would be required to be prepared to the satisfaction of the Murrieta City Engineer. Additionally, all construction activities would comply with the Murrieta JRMP.

Following construction, the Project will comply with the Murrieta JRMP and the RCWQMP for the Santa Margarita Region of Riverside County, which would minimize impacts on receiving water quality by incorporating post-construction BMPs into Project design, including LID site design, hydromodification measures, source control, and treatment control. Implementation of the BMPs as PDFs will reduce the impacts of the Project to receiving water quality in both the construction and operation phases. Furthermore, implementation of MM HYD-1 (see page 4.9-18 through MM HYD-3 (see page 4.9-22) will further minimize impacts associated with water quality and drainage, as they require the Murrieta City Engineer to review and approve the Final Tentative Tract Map, which includes the BMPs and drainage system design, to ensure that all applicable flood control and water quality standards are met. Therefore, the Project will not result in a cumulatively considerable impact related to drainage or water quality.

4.9.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable hydrology and water quality resource impacts have been identified for either the construction or operation phases of the Project.

4.9.8 REFERENCES

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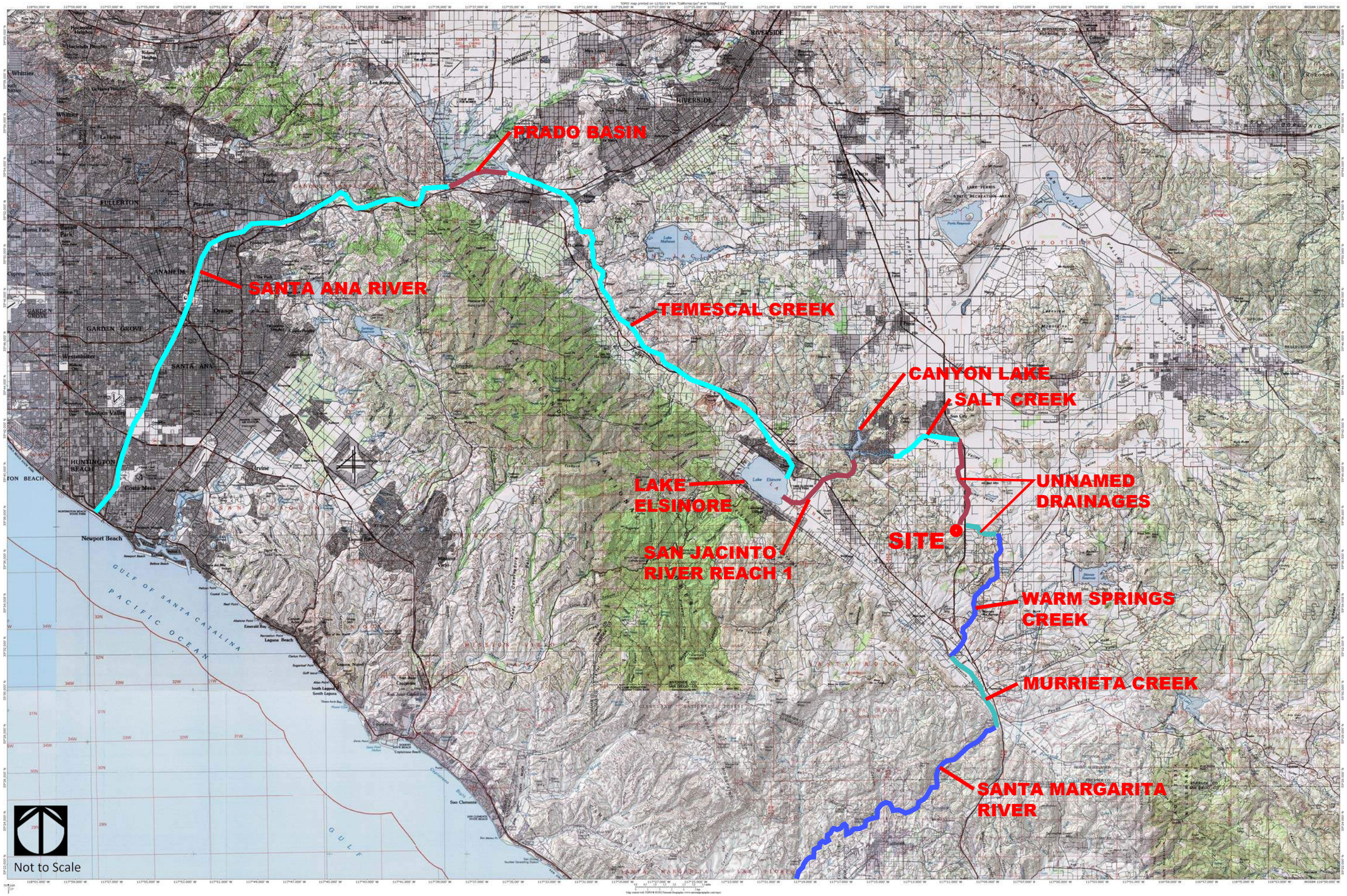
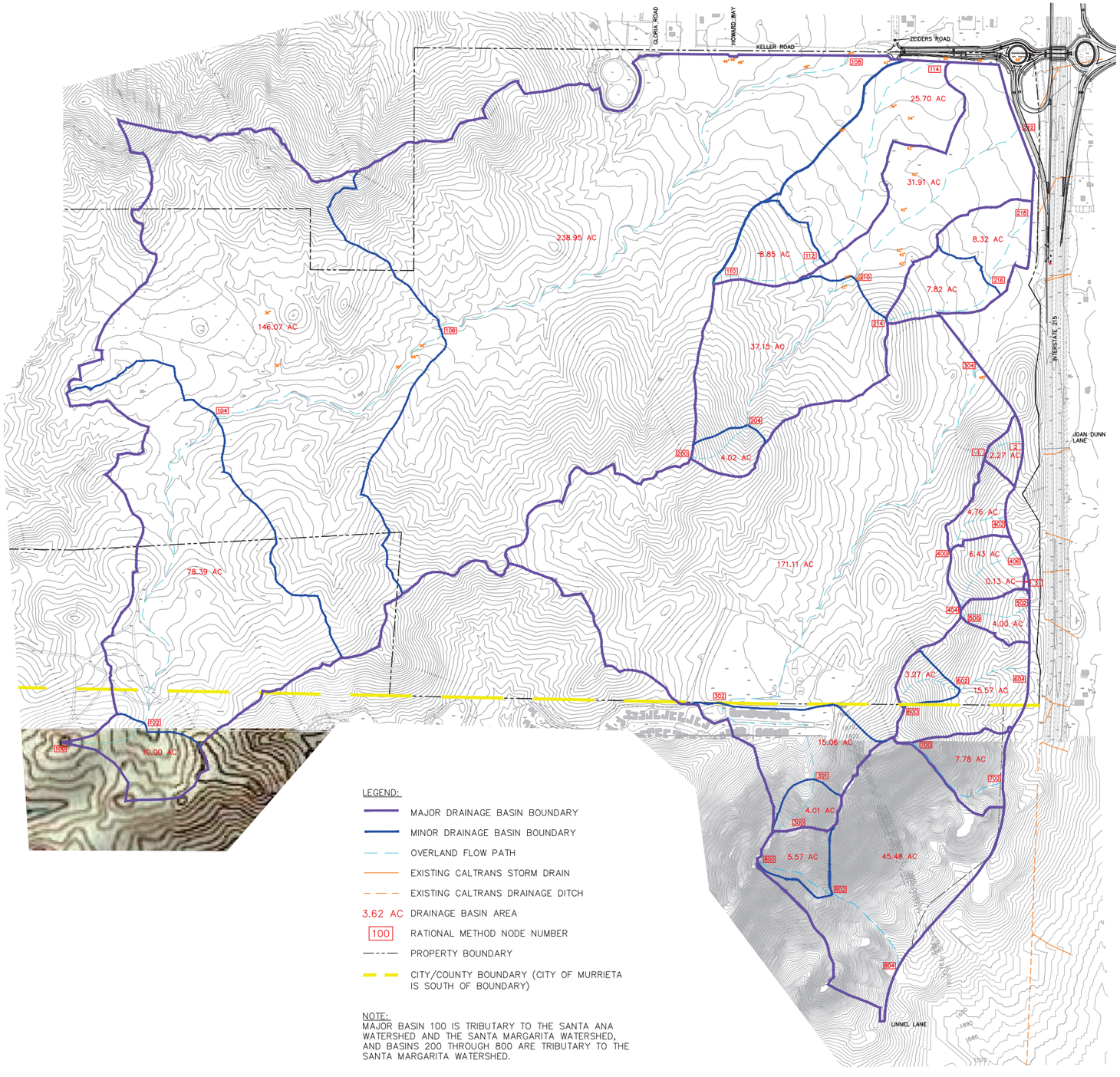


Source: Project Specific Water Quality Management Plan, Appendix 1

EXHIBIT 4.9-1: Receiving Waters Map

Murrieta Hills Specific Plan Amendment

Kimley»Horn

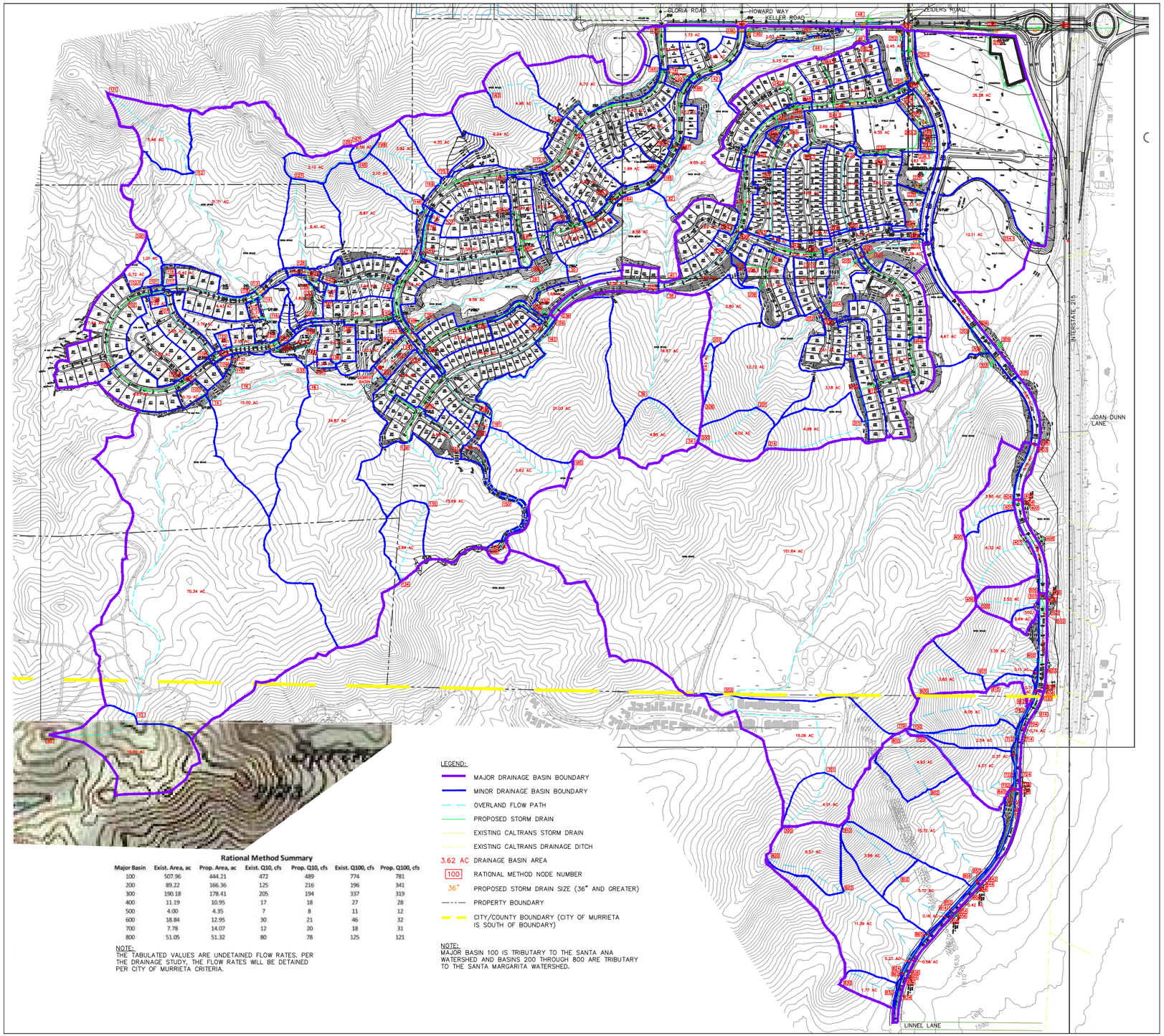


Source: Preliminary Drainage Study for Tentative Tract Map No. 35853, Map Pockets

Not to Scale

EXHIBIT 4.9-2: Drainage Basin Map
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Rational Method Summary

Major Basin	Exist. Area, ac	Prop. Area, ac	Exist. Q10, cfs	Prop. Q10, cfs	Exist. Q100, cfs	Prop. Q100, cfs
100	507.96	444.21	472	489	774	781
200	89.22	166.36	125	216	196	341
300	190.18	178.41	205	194	337	319
400	11.19	10.95	17	18	27	28
500	4.00	4.35	7	8	11	12
600	18.84	12.95	30	21	46	32
700	7.78	14.07	12	20	18	31
800	51.05	51.32	80	78	125	121

NOTE:
THE TABULATED VALUES ARE UNDETAINED FLOW RATES. PER THE DRAINAGE STUDY, THE FLOW RATES WILL BE DETAINED PER CITY OF MURRIETA CRITERIA.

Source: Preliminary Drainage Study for Tentative Tract Map No. 35853, Map Pockets

Not to Scale

EXHIBIT 4.9-3: Proposed Condition Rational Method Work Map
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.10 LAND USE AND PLANNING

4.10.1 INTRODUCTION

This section examines the Murrieta Hills Specific Plan Amendment (MHSPA or Project) and its compliance with the applicable general plans, zoning ordinances, land use plans, policies, and regulations from relevant federal, state, and local agencies as well as other regional organizations. The section evaluates the potential impacts that the Project may have regarding its own land uses, but also the potential impacts to nearby land uses and developments.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project physically divide an established community?

b) Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Analysis of area cumulative impacts is also included in the discussion portions of this section. As will be demonstrated in Section 4.10.5, *Impacts and Mitigation Measures* below, Project impacts for each inquiry are "no impact" and "less than significant," respectively.

The data presented in this section was obtained from available public resources including the Southern California Association of Governments' (SCAG) *2016 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), *County of Riverside General Plan* (Riverside County GP), *City of Murrieta General Plan (Murrieta GP)*, the *City of Murrieta Municipal Code (Murrieta MC),* and the *City of Menifee General Plan Vision 2030* (Menifee GP), among others.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (RCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.10.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain

undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

EXISTING LAND USE

The Project site is presently on unincorporated County land, primarily designated as Rural Mountainous, under the Riverside County GP, Sun City/Menifee Valley Area Plan. The northwest corner of the Project site is currently designated Rural Community – Low Density Residential and the northeast corner Rural Community – Estate Density Residential.[2] The Project site is presently zoned as Rural Residential (R-R) under County Land Use Ordinance 348. This zoning classification allows for 0.5-acre lots that are normally used for light agriculture and single-family residential dwellings.

Project implementation would require a General Plan Amendment and pre-zoning in accordance with the Riverside Local Agency Formation Commission (LAFCO) sphere of influence (SOI) amendment and annexation processes. Once the annexation process is complete, the General Land Use Designations within the Specific Plan area would change from the current Riverside County land use designations described above to Murrieta GP Land Use Designations of Single Family Residential, Mixed-Use, Commercial, and Parks and Open Space (see Exhibit 3-6, *Proposed General Plan Amendment)*.

In addition, Project implementation would pre-zone the Project area to the following City of Murrieta districts: Single-Family Residential (SF-2), Estate Residential (ER-3), Mixed-Use (MU), Community Commercial (CC), and Open Space (OS) (see Exhibit 3-7, *Proposed Zone Change*). These zoning changes will be effective following the completion of the annexation process.

SURROUNDING LAND USES

The Project's eastern boundary is the City of Murrieta and I-215. The City of Murrieta limit also comprises the Project's southeastern boundary and RCA-owned land borders the Project site to the southwest. Located east of I-215 is land designated as Office and Research Park (ORP), Business Park (BP), Civic/Institutional (C/I), and Parks and Open Space (P/OS). The Loma Linda University Medical Center – Murrieta and associated professional office building, and Kaiser Permanente medical facility are also located across I-215. A mixture of land designated as Parks and Open Space (P/OS), Large Lot Residential (LLR), Single-Family Residential (SFR), and Office and Research Park (ORP) are adjacent to the south side

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] Riverside County Planning Department. (2016). *Sun City/Menifee Valley Area Plan*. *Figure 3: Sun City/Menifee Valley Area Plan Land Use Plan*. Page 13. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/areaplans/SCMVAP_121316.pdf?ver=2017-10-06-094255-673. Accessed August 5, 2019.

of the Project area. [3] Undeveloped land, designated as Estate Density Residential-Rural Community (EDR-RC)[4], within the City of Wildomar borders the open space area on the west side of the Project. The northern portion of the Project area borders the City of Menifee which is located on the north side of Keller Road. Along the northern border, within the City of Menifee, land is designated as Rural Residential (RR2) and Economic Development Corridor (EDC), per the City of Menifee's 2018 Land Use map[5].

Three specific plans within the City are located near the Project. The Greer Ranch Specific Plan borders the Project to the south. The Golden City Specific Plan is located across I-215 to the Project's southeast corner, and the Murrieta Highlands Specific Plan is located across I-215 to the Project's northeast corner.

4.10.3 REGULATORY FRAMEWORK

REGIONAL

Southern California Association of Governments 2016 Regional Transportation Plan/Sustainable Communities Strategy

The SCAG was formed in 1965 as a Joint Powers Authority focused on the management of the regional issues facing southern California. SCAG is recognized both federally as a Metropolitan Planning Organization (MPO), and by the state as a Regional Transportation Planning Agency and a Council of Governments (COG). The counties in SCAG region are Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. Together, these counties are able to more efficiently plan for future growth and infrastructure needs through setting cohesive and cooperative economic, environmental and public health goals.

The SCAG 2016 RTP/SCS was updated in April 2016 to strategize methods for sustainable growth for the region by integrating land use and transportation efficiently. The RTP/SCS identifies challenges the regions faces, such as the scarcity and insufficiency of transportation funding; adaptation of climate change demands; and rehabilitation and maintenance of the existing transportation system. Major initiatives that SCAG has identified include preserving the transportation system we already have; expanding passenger rail; and focusing new growth around transit.[6]

Southern California Association of Governments Regional Housing Needs Assessment

As a COG, SCAG is required by California housing law to conduct a Regional Housing Needs Assessment (RHNA) every eight years. This assessment determines future housing needs for every jurisdiction in a given region for a specific time period. The jurisdictions in the SCAG region use the RHNA for land use planning, prioritizing local resource allocation, and for deciding how to address identified existing and future housing needs from population, employment, and household growth. The 5th cycle RHNA Allocation Plan, which covers the planning period from October 2013 to October 2021, was adopted by

[3] City of Murrieta. (2011). *City of Murrieta General Plan 2035*. *Exhibit 3-5: General Plan 2035 Land Use Policy Map*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/729/03---Land-Use-Element-PDF. Accessed August 5, 2019.

[4] City of Wildomar. (2018). *City of Wildomar General Plan Land Use Map*. Retrieved from City of Wildomar Website: http://www.cityofwildomar.org/UserFiles/Servers/Server_9894739/File/Government/Departments/Planning/Maps/General%20Plan%20Land%20Use%20Map%2001-08-2018.pdf. Accessed August 5, 2019.

[5] City of Menifee. (2018). *City of Menifee Land Use* map. Retrieved from City of Menifee Website: https://www.cityofmenifee.us/DocumentCenter/View/1013/Menifee-General-Plan-Land-use-map-as-of-May-2018. Accessed August 5, 2019.

[6] SCAG. (2016). *Final 2016-2040 RTP/SCS*. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf. Accessed August 5, 2019.

the Regional Council on October 4, 2012. The Plan quantifies the need for housing within each jurisdiction during the planning period. The City of Murrieta's Final RHNA Allocation is as follows:

- Number of very low-income households: 395
- Number of low-income households: 262
- Number of moderate-income households: 289
- Number of above moderate-income households: 627
- Total households: 1,573

The 6th cycle of the RHNA allocation plan is currently under development and will cover the planning period of October 2021 through October 2029.[7]

Southern California Association of Governments' 2008 Regional Comprehensive Plan

The Regional Comprehensive Plan (RCP)[8] is a major advisory plan designed to respond to important issues present in the southern California region. Serving as an advisory document to local agencies, the RCP provides optional best practices intended for use by agencies within the region as they manage projects and issues on both a local and regional scale. The RCP covers multiple impact areas, including sections on land use and open space.

The RCP classifies open spaces as natural lands, community open spaces, and farmlands. Natural lands are undeveloped, vacant area with natural vegetation and wildlife. Community open spaces include uses such as parks and community gardens. Farmlands involves agricultural properties as defined by the California Department of Conservation. While acknowledging local agencies' plans and efforts toward open space conservation, the RCP also proposes best practices to assist in these efforts. These best practices are intended to further assist the conservation effort of natural lands while increasing community accessibility to open spaces.

The Land Use and Housing portion of the RCP analyzes the challenges facing the SCAG region as it continues to grow. To minimize the impact of this growth, the RCP presents strategies like the Compass Blueprint, meant to increase population and environmental sustainability even as the region grows. The goals are focused on the revitalization of transportation corridors and under-utilized areas, while creating more pedestrian-friendly communities. The strategies also intend to preserve established neighborhoods and important open spaces.

Western Riverside County Multiple Species Habitat Conservation Plan

In 2004, the RCA, governed by a Board of Directors, was assembled to create the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional habitat conservation plan developed for the conservation of plant and wildlife species, and associated habitat, of western Riverside County. The MSHCP Area collectively includes 1.26 million acres (1,966 square miles) of the County and crosses over various diverse habitat and bioregions. The MSHCP is an effort by the RCA to foster and promote biological and ecological diversity in the region, and protects 146

[7] SCAG. (2012). *Regional Housing Needs Assessment (RHNA) & Housing*. Retrieved from SCAG Website: http://www.scag.ca.gov/programs/Pages/Housing.aspx. Accessed August 5, 2019.
[8] SCAG. (2008). *Regional Comprehensive Plan*. Retrieved from SCAG Website: http://www.scag.ca.gov/NewsAndMedia/Pages/RegionalComprehensivePlan.aspx. Accessed August 5, 2019.

native species of plants, birds, and animals. The RCA has the goal of setting aside 40 percent, or 500,000 acres, for preservation by 2029. When the Plan was adopted it included 347,000 acres of public or quasi-public lands, leaving 153,000 acres to be acquired; approximately 81 percent of the goal for reserves is in place.

Portions of the County within the MSHCP include any unincorporated County land between the San Jacinto Mountains and the Orange County line. The following cities are included in the MSHCP area and are considered member cities:

- Temecula
- Murrieta
- Lake Elsinore
- Canyon Lake
- Norco
- Corona
- Riverside
- Moreno Valley
- Banning
- Beaumont
- Calimesa
- Perris
- Hemet
- San Jacinto

While the RCA develops the procedures for the MSHCP's implementation, the cities within the MSHCP are given control over land-use decisions. This allows them to balance their development goals with the requirements of both the state and federal Endangered Species Act (ESA). With the inclusion of its partner cities and its coverage range, this habitat conservation plan is among the largest ever attempted in the United States.

Western Riverside Council of Governments

The Western Riverside Council of Governments (WRCOG) unifies jurisdictions and agencies of western Riverside County by creating a collective voice on important issues and topics that affect them. For a list of member agencies visit: http://www.wrcog.cog.ca.us/178/Member-Agencies. Representatives from various western Riverside County cities and agencies comprise the WRCOG Executive Committee, which sets policy for the WRCOG. The WRCOG recognizes that many issues related to growth are not restricted by political boundaries and, therefore, focuses on growth-related matters at the regional level. By working together, member agencies realize the cost-effectiveness of reducing duplication of effort and sharing information. The WRCOG has multiple programs addressing regionally important topics such as energy, healthy communities, and transportation.

The WRCOG's BEYOND Framework Fund Program, launched in 2015, supports its member agencies efforts to improve quality of life in western Riverside County. Approximately $4.1 million, over two rounds, has been awarded to member jurisdictions to support 83 projects. An example of a BEYOND project is the City of Murrieta's Murrieta Energy Efficiency Project, which utilized BEYOND funds to finance energy improvement projects identified utilizing an energy audit under the direction of the Energy Network and the Western Riverside Energy Partnership.[9]

WRCOG transportation programs include the Transportation Uniform Mitigation Fee (TUMF) Program and the Active Transportation Plan (ATP).[10] The TUMF Program ensures that developers pay their fair share for increased traffic created by their developments. The ATP serves as a resource for WRCOG member

[9] WRCOG. (2015). *BEYOND Framework Fund Program*. Retrieved from WRCOG Website: http://www.wrcog.cog.ca.us/164/BEYOND. Accessed August 5, 2019.
[10] WRCOG. (2019). *Transportation*. Retrieved from WRCOG Website: http://www.wrcog.cog.ca.us/173/Transportation. Accessed August 5, 2019.

jurisdictions/stakeholders to aid in identifying active transportation facilities (bike and pedestrian) they would like to see in their community and provides guidance on how each project can be accomplished.

Riverside Local Agency Formation Commission

Established by the legislature in 1963, LAFCOs are state-mandated regulatory agencies created to help implement State policy of encouraging orderly growth and development through the regulation of local public agency boundaries. California is comprised of 58 counties, all of which have a LAFCO; however, note that each LAFCO is an independent agency and not associated with county government. The LAFCO for Riverside County has jurisdiction over boundary changes of cities and special districts in the County (https://lafco.org/).

LAFCO has regulatory and planning functions. On the regulatory side, the LAFCO carries out legislative mandate through the consideration of proposals for boundary changes. The most common type of boundary change is annexation to a local agency, such is the case for this Project and its annexation into the City of Murrieta. Most annexations are initiated by landowners to facilitate development. On the planning side, LAFCO establishes and amends SOIs, and is required to designate and periodically review the SOI for each local agency in the County. A SOI is planning tool adopted and used by LAFCO to designate the future boundary and service area for a city or special district. LAFCO will responsible for reviewing and approving the SOI Amendment and subsequent annexation into the City of Murrieta for the Project.

Riverside County Airport Land Use Commission

The Riverside County Airport Land Use Commission (ALUC) protects the health, safety and welfare of the public by minimizing the public's exposure to extensive noise and safety hazards in areas surrounding airports through the orderly expansion of airports and the adoption of land use measures. The ALUC reviews land use compatibility issues (e.g., safety, noise, overflight and airspace protection) for development surrounding airports. These compatibility issues are identified and analyzed in the Airport Land Use Compatibility Plans (ALUCP) for each airport, and implementation of these Plans promotes compatible development around the airports. The ALUCPs set compatibility criteria applicable to landowners in their design of new development and local jurisdictions/agencies in their amendment or preparation of ordinances and land use plans.

The *Riverside County Airport Land Use Compatibility Plan Policy Document* (2004), establishes policies applicable to land use compatibility planning in the vicinity of Riverside County airports. Included in the policy document are compatibility criteria, maps for the influence areas of individual airports, and procedural requirements associated with the compatibility review of development proposals. Municipalities within the County are required to modify their GPs to be consistent with the policies within the RCALUCP to ensure a similar standard throughout the County. According to the policy document, 13 public-use airports, one military airport, and two private-use airports have influence areas within Riverside County.

Riverside County Transportation Commission

The Riverside County Transportation Commission (RCTC) plans and implements transportation and transit improvements, assists local governments with money for local streets and roads, helps smooth the way for commuters and goods movement, and ensures that everyone in Riverside County has access to transportation.

Ordinance No. 02-001[11], otherwise known as the "Expenditure Plan" or "Measure A," is Riverside County's first half-cent sales tax for transportation improvements. The RCTC set in motion a proactive response to growing congestion by spelling out a list of transportation projects to address the problem. RCTC has ensured that the $1 billion raised by Measure A from 1989 to 2009 made a significant difference on virtually every major roadway in the County. Commuter rail, public transit, and commuters also received benefits. In 2002, Measure A was extended by Riverside County voters. Now, Measure A will continue to fund transportation improvements through 2039. Funds from this tax are distributed among all regions of Riverside County that require roadway or transportation improvements. The one-half percent sales tax for transportation to supplement traditional revenues and revenues is to be generated through locally adopted developer fees and assessment districts for transportation improvements.

County of Riverside General Plan

The Riverside County Integrated Project (RCIP) GP was adopted in 2003. The RCIP GP has undergone numerous revisions/amendments as demonstrated here:

https://planning.rctlma.org/Portals/14/genplan/2019/Oline_GPAUpdate_5.14.19.pdf.

The GP covers unincorporated Riverside County and is supplemented by 19 area plans, which provide an opportunity to enhance community identity within Riverside County and stimulate quality of life at the community level. The Project area is located in the Sun City/Menifee Valley Area Plan. The GP provides policy direction and standards related to land use, housing, safety, circulation, open space and conservation, air quality, and noise that is relevant countywide. The GP complies with the State GP law and includes the following seven mandated resources or elements: land use, circulation, conservation, open space, safety, noise, and housing. In this GP, conservation and open space elements were combined into the Multipurpose Open Space Element. Optional GP elements, air quality and healthy communities, are also included. Below is a discussion about the Land Use Element of the County of Riverside GP.

LAND USE ELEMENT[12]

The Land Use Element of the Riverside County GP serves as a guide for the public, planners, and decision-makers regarding the ultimate pattern of development in the County. This element assigns the general distribution and locations, and extent of land uses, such as agriculture, business, housing, industry, natural resources, open space, public/quasi-public uses, and recreation. In addition, this element also discusses the standards of residential density and non-residential intensity for the various land use designations.

Together, the Land Use Element and GP Land Use Map are intended to help guide Riverside County to achieve an integrated and coordinated land use, open space, and transportation system. Central to the vision for the County is the goal to enhance and maintain the character of Riverside County, including its extraordinary natural resources and unique communities, by clearly delineating areas that are suitable for future growth and are suitable to be maintained and preserved. Key to this goal is the need to focus future growth into a pattern that complements and incorporates the multi-purpose open space and

[11] RCTC. (2002). Ordinance No. 02-001, Riverside County Transportation Commission Transportation Expenditure Plan and Retail Transaction and Use Tax Ordinance. Retrieved from RCTC Website: https://www.rctc.org/wp-content/uploads/2018/07/Measure-a-expenditure-plan-ordinance.pdf. Accessed August 14, 2019.

[12] Riverside County Planning Department. (2019). *County of Riverside General Plan, Chapter 3: Land Use Element*. Pages LU-4 – LU-5. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch03_Land%20Use_041619.pdf. Accessed August 6, 2019.

transportation systems. Future growth should be directed to areas well served by public facilities and services, and where significant environmental features such as drainage ways, lands subject to extreme natural hazards, or lands that offer scenic beauty can be preserved. The focus of the Riverside County GP is not on the continuation of disaggregate land uses, but on creating and connecting whole communities. The desire of the County is to achieve this vision by achieving the following basic tenants:

- Accommodate strategically located community centers and re-plan existing urban cores with a transit-adaptive, integrated mixture of commercial, residential, employment, parks, civic, recreational, and cultural uses within walking distance of transit facilities. These community centers are intended to accommodate a portion of future growth by allowing increased densities and intensities in order to reduce sprawl and the amount of land required for public infrastructure;
- Accommodate a comprehensive, multi-purpose open space system that provides a variety of functions, including; providing a framework for community development that encompasses the needs for active and passive recreation, establishing separations between communities, and maintaining the historic character of Riverside County;
- Accommodate a multi-modal transportation system that serves an expanding population and is integrated with a variety of land uses through transit-adaptive development and infrastructure. This transportation system is interconnected on the regional and project level and includes systems for vehicular, transit, the Oasis concept[13], pedestrian linkages, trails, bicycle routes, air and other non-motorized forms of transportation. The transportation system is designed into each community and project to provide attractive, safe options of travel;
- Allow for a balanced mixture of land uses, including commercial, office, industrial, agriculture, and open space, as well as a variety of residential product types, densities, and intensities in appropriate locations that respond to a multitude of market segments. The land use plan accommodates a variety of housing types, from rural estates to urban apartments;
- Accommodate the various communities of Riverside County, which are maturing in their own way, at their own pace and within their own context. This includes the preservation of character in some communities, accommodating growth in other communities, and achieving a mixture of growth and preservation in others;
- Cooperate regionally on issues of mobility, transportation systems development, traffic congestion reduction, clear air, clean water, watershed management, and habitat linkages; and
- Utilize a system of incentives that are designed to facilitate the achievement of these concepts within the context of the free market.

The Riverside County GP Land Use Element establishes a complex interrelationship of land uses that will contribute to accomplishing many of the GP's goals. By adhering to the patterns established, a viable, self-sustaining county with a high quality of life and desirable physical character can be developed.

[13] According to the *County of Riverside General Plan's Circulation Element*, "The Transit Oasis is a system that can provide transit service to concentrations of employment, community activity, and residences while maintaining reasonable travel times and just as importantly, be built and operated at a reasonable cost." Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch04_Circulation_121217.pdf. Accessed August 6, 2019.

LOCAL

Murrieta General Plan 2035[14]

LAND USE ELEMENT[15]

The Land Use Element of the Murrieta GP is intended to facilitate the City's growth by promoting land uses and development activity in a way that further improves the City's future.

Goal LU-1: ***A complimentary balance of land uses throughout the community that meets the needs of existing residents and businesses as well as anticipated growth, and achieves the community's vision.***

Policy LU-1.1: Identify appropriate locations for residential and non-residential development to accommodate growth through the year 2035 on the General Plan Land Use Policy Map.

Policy LU-1.2: Ensure future development provides for a variety of commercial, industry, and housing that serve the spectrum of incomes within the region.

Policy LU-1.3: Establish a range of residential density and non-residential intensities to encourage a wide range of development opportunities.

Policy LU-1.4: Provide for the development of complementary land uses, such as open space, recreation, civic and service uses for all future residential and non-residential development.

Policy LU-1.5: Encourage a wide variety of retail and commercial services, such as restaurants, and cultural arts/entertainment, in appropriate locations.

Policy LU-1.6: Promote future patterns of development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities.

Policy LU-1.7: Ensure necessary capital improvements are in place prior to new development or completed concurrently.

Goal LU-4: ***A housing stock that meets the diverse needs of Murrieta's existing and future residents.***

Policy LU-4.1: Provide for housing opportunities that address the needs of those who currently live or desire to live in Murrieta.

Policy LU-4.3: Locate multiple-family housing adjacent to jobs, retail, schools, open space, public transportation, and transportation corridors.

Goal LU-9: ***Land use patterns and urban design that support healthy and sustainable lifestyles and businesses.***

Policy LU-9.1: Encourage human-scale urban design on the neighborhood, block, and building scale.

[14] City of Murrieta. (2011). *City of Murrieta General Plan 2035*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/303/General-Plan-2035. Accessed August 6, 2019.

[15] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 3: Land Use Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/729/03---Land-Use-Element-PDF. Accessed August 6, 2019.

Policy LU-9.2: Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial, mixed-use or transit-oriented development areas.

Policy LU-9.3: Encourage new neighborhoods to be built on a pedestrian-scale, within walking distance of parks, neighborhood-serving commercial areas, and other neighborhood amenities.

Policy LU-9.4: Differentiate between areas zoned as neighborhood commercial and community commercial, encouraging unique, pedestrian-oriented, and neighborhood-serving uses in the neighborhood commercial zone.

Policy LU-9.5: Promote commercial uses near residential neighborhoods that serve local residents and create neighborhood-gathering places.

Goal LU-25: ***Collaboration with Federal, State, County, and other regional agencies and authorities to ensure compliance with existing and future legislation that affects the City of Murrieta.***

Policy LU-25.5: Comply with procedures and programs of the County of Riverside and the Local Agency Formation Commission for future annexations.

CIRCULATION ELEMENT[16]

The Circulation Element of the Murrieta GP overviews the City's plans and policies for its transportation system. The section also looks into the modes of transportation used in the City, such as cars, bicycles, and buses. The section assists in the planning of communities by incorporating land use with transportation.

Goal CIR-3 ***Circulation systems that preserve the quality of residential neighborhoods.***

Policy CIR-3.2 Review the design of all proposed new residential neighborhoods to ensure that "cut through" routes are minimized, and pedestrian connections are maximized.

Goal CIR-7 ***Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.***

Policy CIR-7.1 Encourage future developments to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences.

Policy CIR-7.3 Encourage safe pedestrian walkways and ensure compliance with the Americans with Disabilities Act (ADA) requirements within all developments.

Policy CIR-7.5 Provide pedestrian amenities such as benches, trees, landscaping, and shade trees to encourage people to walk to destinations.

[16] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 5: Circulation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed August 6, 2019.

HEALTHY COMMUNITY ELEMENT[17]

Methods that are designed to enhance the City's welfare are outlined in the Healthy Community Element of the GP. Community health involves planning that increases the happiness of the community along with its safety. Proper land use can progress the goals proposed in this element.

Goal HC-4: ***Public spaces that foster positive human interaction and healthy lifestyles.***

Policy HC-4.1: Create public plazas with seating, art, and play features near shopping and business districts.

CONSERVATION ELEMENT[18]

The Murrieta GP's Conservation Element is intended to create greater awareness of the City's natural resources, and the impact that development could have on those resources. This element takes into account outside policies and creates a framework to ensure conscious utilization and effects on natural resources.

Goal CSV-5: ***Hills and ridges are protected for their environmental and aesthetic values.***

Policy CSV-5.1: Promote compliance with hillside development standards and guidelines to maintain the natural character and the environmental and aesthetic values of sloped areas.

Policy CSV-5.2: Incorporate significant landform features into City parks and open space, where appropriate.

Goal CSV-8: ***Conservation of biological resources through habitat preservation and restoration, in coordination with other regional efforts and in compliance with state and federal mandates.***

Policy CSV-8.1: Facilitate the conservation of habitat areas and wildlife corridors under the Western Riverside Multiple Species Habitat Conservation Plan.

RECREATION AND OPEN SPACE ELEMENT[19]

The Recreation and Open Space Element of the Murrieta GP 2035 provides the standards and goals of the City regarding the preservation of its natural features and resources. The section outlines the City's plans to conserve its nature areas and promote positive ecological interactions between the environment and the population.

Goal ROS-7: ***Open space areas are planned to protect, conserve, and utilize resources of unique character and value for the community.***

Policy ROS-7.1: Preserve and enhance open space resources in Murrieta.

Policy ROS-7.2: Designate open space to preserve habitat and scenic views of natural areas.

[17] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 7: Healthy Community Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/733/07---Healthy-Community-Element-PDF. Accessed August 6, 2019.

[18] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 8: Conservation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed August 6, 2019.

[19] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 9: Recreation and Open Space Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/735/09---Recreation-and-Open-Space-Element-PDF. Accessed August 6, 2019.

Goal ROS-8: ***New development is part of a coordinated system of open space, parkland, recreation facilities, and trails.***

Policy ROS-8.1: Encourage the provision of parks, recreation facilities, and/or open space in new development and redevelopment projects.

AIR QUALITY ELEMENT[20]

The Air Quality Element of the City's GP dictates the City's goals and policies regarding air pollution and the components of life that affect the air quality. Various sources are described in this element along with policies and regulations utilized to minimize and mitigate those effects.

Goal AQ-1: ***Improved air quality through participation in regional and local efforts.***

Policy AQ-1.:4 Cooperate with the State and Southern California Association of Governments (SCAG) in the implementation of SB 375 – Regional Transportation Planning, Housing, CEQA and Global Warming Emission Reduction Strategies.

Goal AQ-4: ***Mobile source emissions are reduced by providing a balance of jobs and housing that serve the needs of the community.***

Policy AQ-4.4: Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.

NOISE ELEMENT[21]

The Noise Element analyzes and estimates potential noise impacts that could affect different areas and land uses within the City. The Noise Element incorporates general practices and methods for minimizing and mitigating possible noise-related impacts.

Goal N-1: ***Noise sensitive land uses are properly and effectively protected from excessive noise generators.***

Policy N-1.1: Comply with Land Use Compatibility for Community Noise Environments.

Goal N-2: ***A comprehensive and effective land use planning and development review process that ensures noise impacts are adequately addressed.***

Policy N-2.2: Integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts.

HOUSING ELEMENT[22]

The City's Housing Element analyzes the City's current and projected population to ensure that decent affordable housing will be available for all residents. This element proposes different plans meant to not

[20] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 10: Air Quality Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/720/10---Air-Quality-Element-PDF. Accessed August 6, 2019.
[21] City of Murrieta. (2011). *City of Murrieta General Plan 2035, Chapter 11: Noise Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/721/11---Noise-Element-PDF. Accessed August 6, 2019.
[22] City of Murrieta. (2013). *City of Murrieta General Plan 2035 – 2014-2021 Housing Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/724/13---Housing-Element-PDF. Accessed August 6, 2019.

only increase the amount of housing available in the City, but also maintain the quality of the existing housing and create greater opportunity for people of all types to access housing.

Goal 1: ***Provide adequate housing opportunities throughout the City of Murrieta.***

Policy 1.1: Provide a range of residential development types in Murrieta, including low-density single-family homes, moderate density townhomes, higher density multifamily units, and residential/commercial mixed use in order to address the City's share of regional housing needs.

Goal 5: ***Identify adequate sites to achieve housing variety.***

Policy 5.1: Identify vacant and/or underutilized parcels throughout the City, that can accommodate a variety of housing types for all socioeconomic segments of the community.

Murrieta Municipal Code (Murrieta MC)[23]

SECTION 16.06.030 ZONING DISTRICT REGULATIONS

The Murrieta MC Section 16.06.030 establishes the general guidelines that developments should follow within their respective zoning district. This section clarifies the correct procedure to follow in cases where project sites are within multiple land use zones. As well, this section presents the City's policy regarding conflicts between zoning district regulations and other zoning agreements, such as specific plans. This section states that in the case of conflicts between general zoning code policies and those presented by specific plans or other development agreements, the policies presented by the specific plan or development agreement will take precedence.

SECTION 16.08 RESIDENTIAL DISTRICTS

Section 16.08 of the Murrieta MC outlines the City's policies regarding the zoning standards for residential districts. The City's residential zoning districts that are included in this Project are Single-Family Residential 2 (SF-2), Estate Residential 3 (ER-3), and Mixed-Use (MU-3). Note that the mixed-use zone applies specifically to PA 8 which includes multi-family residential housing, commercial retail and office use, or a combination of both.

The SF-2 district is intended for attached or detached single-family residential dwellings with a minimum lot size of 5,000 square feet (sf). This zone allows for a development density of 5.1 to 10 dwelling units per acre (du/ac). Developments in this district allow for the clustering of dwelling structures with shared open spaces and recreational facilities. The ER-3 district contains larger lots with a minimum lot size of 10,000 sf and a development density of two to three du/ac. These larger lots are still used for single-family residential dwellings, but with greater allowance for some rural uses.

SECTION 16.10 COMMERCIAL DISTRICTS

The City outlines its policies and standards regarding commercial zoning districts in Section 16.10 of its MC. Only one of the commercial zoning districts described in the Murrieta MC is included in this Project, the Community Commercial (CC) District. The CC district is generally used for the development of shops

[23] City of Murrieta. (2019). Murrieta, California Municipal Code. Accessible at http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca.

and markets that suit the common needs of the nearby residences. This district is also suitable for office and restaurant uses. A buffer zone between this commercial district and the nearby residential zoning districts is required. Unlike the previous residential zoning districts, CC districts are not given minimum lot size standards. However, CC districts are generally expected to be between 10 to 30 acres in size, allowing for some variety in the ultimate usage.

SECTION 16.14 SPECIAL PURPOSE DISTRICTS

The City's standards regarding the special purpose zoning districts are outlined in Section 16.14 of the Murrieta MC. For the purposes of this Project, the Open Space (OS) district will be utilized. The Murrieta MC gives an OS zoning district classification to areas that are used to aid in the conservation of natural resources and natural areas. These districts tend to be largely undeveloped except for some structures such as standard park features and trails. Like the CC district described above, the OS district does not have a minimum lot size. The OS district is allowed variety in order to be most effective in their conservation efforts.

SECTION 16.44.100 MIXED-USE PROJECTS

The Murrieta MC does not currently have a designated mixed-use zoning district. However, the *Downtown Murrieta Specific Plan* (2017) does include a Mixed-Use (MU) Zoning District which provided the general framework and outline for this Project's MU standards. The MU designation allows for a wide variety of uses, including professional office, service-oriented businesses, retail, single and multi-family residential, or a combination of the above in a mixed-use development. A vertical mix of uses is encouraged with any commercial or office uses occupying the ground floor. Residential uses may be developed up to a maximum density of 24 dwelling units per acre.[24]

Section 16.44.100 of the Murrieta MC – Mixed-Use Projects, provides a definition multiple or mixed-use projects as "developments that combine both commercial/office and residential uses or structures on a single lot, or as components of a single development. The uses may be combined either vertically within the same structure or spread horizontally on the site in different areas and structures.

The primary design issue related to mixed-use projects is the need to successfully balance the requirements of residential uses. (e.g., the need for privacy and security) with the needs of commercial uses for access, visibility, parking, loading, and possibly extended hours of operation."

Site planning specifications for mixed-use projects state that mixed-use projects that provide commercial space on the ground floor with residential units above are encouraged over projects that provide commercial structures on the front portion of the lot with residential uses placed at the rear of the lot. This latter configuration does not meet the intent of a true mixed-use project which incorporates vertical integration of uses. However, a horizontal separation (commercial to the front, residential to the rear) of uses may be appropriate depending on the size of the site and available access. Additional specifications are listed under Section 16.44.100 of the Murrieta MC.

[24] City of Murrieta. (2017). *Downtown Murrieta Specific Plan*. Page 22. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/DocumentCenter/View/619/Downtown-Murrieta-Specific-Plan-PDF. Accessed August 6, 2019.

Murrieta Hills Specific Plan Project Background

The Project site was once the subject of a proposed specific plan that included residential, commercial, and memorial park uses, proposed by the Rose Hills Foundation. The landowner applied for annexation of the site into the City of Murrieta, and in conjunction with the annexation effort, the City approved the original Murrieta Hills Specific Plan as the pre-zoning for the property. The original Murrieta Hills Specific Plan was approved by the City of Murrieta in 1995 (Specific Plan No. SPM-4, City Council Resolution No. 95-353). As approved, Specific Plan No. SPM-4 focused on the memorial park and residential uses, allowing for a maximum of 1,585 residences, with commercial uses, a linear park/riparian corridor, open space and an elementary school on approximately 985 acres (Exhibit 3-1, *1995 Specific Plan SPM-4 Land Use Plan*). The original Murrieta Hills Specific Plan was approved by the City of Murrieta, subject to completion of annexation proceedings to the City of Murrieta through the Riverside LAFCO. However, the previous applicant did not pursue annexation and chose to remain within the unincorporated County area. Although SPM-4 was approved, since the Project did not proceed to formal annexation through LAFCO, the site is still within unincorporated Riverside County with associated County zoning and general plan land use designations.

The proposed annexation boundary creates one island of unincorporated property between the cities of Murrieta and Menifee, adjacent to the Project site. LAFCO will take this into consideration as part of annexation proceedings for the Project. The aforementioned parcels were invited to participate in the annexation but declined. Given that the parcels also border Menifee, they could be annexed into Menifee, annexed into Murrieta at a later date (and not as part of the proposed Project) or possibly remain unincorporated.

An amendment to Specific Plan No. SPM-4 was submitted to the City of Murrieta in 2005 by Del Webb. Due to the economic downturn and market conditions, the plan amendment was withdrawn. In 2011, Benchmark Pacific, in partnership with the property owner, Pulte/BP Murrieta Hills, LLC, initiated the MHSPA to amend Specific Plan No. SPM-4.

Following release of the Notice of Preparation (NOP) in August 2014, the City and applicant engaged in extensive stakeholder outreach resulting in a substantially revised and improved site plan that further reduces environmental impacts compared to the site plan proposed as part of the original application and as described and shown in the NOP. The MHSPA updates, amends and replaces Specific Plan No. SPM-4. It reduces the Specific Plan boundary to approximately 972 acres, increases the amount of preserved natural open space, and changes the development concepts and land use mix.

4.10.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project will have a significant environmental impact if one or more of the following occurs:

- Would the Project physically divide an established community? (see Impact 4.10-1); or
- Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (see Impact 4.10-2)

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning land use and planning. In addition to PDFs, this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce a potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures would be recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on land use and planning components examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: field observations conducted by Kimley-Horn personnel in early 2019; review of project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on land use and planning standards considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components. For example, the Project does not exceed the set standards for allowed developments within each zoning type.

PROJECT DESIGN FEATURES

- Annexation of the Specific Plan area, which is presently within unincorporated Riverside County, into the City of Murrieta which will allow the City to manage and plan development in border areas around the Project.
- RCA/MSHCP compliance and donation of approximately 63 percent of the Project site, meeting the 60 to 70 percent conservation target for Cell Group C (see Section 4.3, *Biological Resources* for more information).
- Creation of open spaces along the western, southern, eastern, and northern portions of the Project area.
- Revision from the previously approved MHSP, creating an OS buffer area (fuel modification zone) between the Project and Greer Ranch residential community.
- Incorporation of varying residential housing opportunities including single-family, executive single-family, and mixed-use residential (inclusive of multi-family residential).
- Inclusion of a community commercial zone and mixed-use element.

- Provision of an essential north/south connection via the extension of McElwain Road.
- Creation of a more compact, environmentally sensitive design by eliminating the sprawl and discontinuity of the previously approved MHSP PAs and utilizing a smaller development footprint with continuous development between neighboring Project PAs.

4.10.5 IMPACTS AND MITIGATION MEASURES

Impact 4.10-1: Would the Project physically divide an established community?

Level of Significance: No Impact

CONSTRUCTION AND OPERATIONS

This Project is the revision and amendment of a previously planned community in the City of Murrieta. In 1995, the MHSP No. SMP-4 was approved which included the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on approximately 985 acres. However, MHSP No. SMP-4 was never implemented. As part of the MHSPA, the number of dwelling units has since been reduced to 750, and area of land used has been reduced approximately 972 acres under the MHSPA. The area in which the Project will be located is unoccupied and largely vacant land. No communities currently exist in the Project area. The area occupied by the Project is bordered by two neighborhoods, one to the north in the City of Menifee and one to the south in the City of Murrieta; with the I-215 bordering its east side. Open space is planned for the western portion of the Project site with the next nearest established residential community approximately one mile away in the City of Wildomar. Due to the lack of developments occupying the Project area and the neighboring residential communities' boundaries established outside of the Project footprint, the Project will not physically divide any established communities. Therefore, no impacts are expected, and no mitigation is necessary.

Off-Site Construction and Operations Impacts

The McElwain Road extension will be in an area that is largely undeveloped and will therefore not physically divide an established community, but rather will complete a long-planned GP road extension and provide much needed secondary access to this area of northern Murrieta. Above-ground drainage structures (concrete ditches) will be placed along McElwain Road from Street 'D' to Linnel Lane. Again, these improvements will not divide an established community.

The sewer service improvements along Keller Road and Zeiders Road and the off-site storm drain along Keller Road will not physically divide an established community as the construction of these improvements will occur beneath existing roads and within existing road rights-of-way. Once construction is completed, these improvements will be subsurface and not result in an adverse impact to an established community.

MITIGATION MEASURES

No mitigation is required.

Impact 4.10-2: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

SCAG 2016 RTP/SCS Strategies

The Project has been designed to be compatible with the strategies proposed by SCAG in their 2016 RTP/SCS. These strategies were a collaborative effort between SCAG and local agencies with the intention of not only managing regional growth, but also maximizing ecological health. Table 4.10-1, *Project Compatibility with SCAG 2016 RTP/SCS Strategies* below describes the Project's compatibility with the land use strategies proposed in SCAG's 2016 amendment of the RTP/SCS.

Table 4.10-1 Project Compatibility with SCAG 2016 RTP/SCS Strategies

RTP/SCS Strategies [1]	Project Compatibility
Reflect the Changing Population and Demands	**Consistent:** The City demographics summary shows that a majority of the population is made up of multiple individual households with higher than average income levels.[2] The Project reflects this by zoning the majority of the residential areas for single-family and executive single-family residential units, while also offering zoning for mixed-use development with the potential to include a mixture of multi-family residential uses in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses in a mixed-use environment.
Focus New Growth Around Transit	**Consistent:** High-Quality Transit Areas (HQTAs) require creation of complete streets.[1] The roadways planned for the Project will include pedestrian walkways along each street connecting residential areas to open space and commercial and mixed-use zones. While not located adjacent to major forms of mass transit, the Project area will include the extension of existing McElwain Road. This will create a better connection between the cities of Murrieta and Menifee. Upon Project completion, the City may coordinate with the Riverside Transit Agency (RTA) to incorporate a new bus stop in the Project area into an existing bus route. The closest Metrolink station is the Perris – South station; approx. 11 miles north of the Project via I-215 and Case Road in Perris. Project area residents could board the 91/Perris Valley Line, or Blue Line, in Perris and access the vast southern California Metrolink. Residents may also board RTA Route 61 at Stop ID 3345, located just south of the intersection of Linnel Lane and McElwain Road (by Target), and take the bus to the Perris – South Metrolink Station.
Plan for Growth Around Livable Corridors	**Consistent:** A variety of sidewalks will provide pedestrian connections to the various neighborhoods, recreational amenities, open spaces, and the planned commercial area within the community. This will increase the mobility of the residents and promote a walkable community. Community commercial zoning in this Project is expected to lead to developments such as restaurants, a grocery store, lodging, and other services. The commercial zone is also adjacent to the planned mixed-use zone within the Project.
Provide More Options for Short Trips	**Consistent:** Community commercial and mixed-use zones are included in the Project design to serve neighborhood needs. Each planned street within the Project area will be bordered with sidewalks in many sections promoting pedestrian travel. Bicyclists will also be accommodated with bike lanes along select streets. The community will also feature other walking paths and trails linking residents and visitors with the commercial, mixed-use, and open space amenities.

Table 4.10-1 Project Compatibility with SCAG 2016 RTP/SCS Strategies

RTP/SCS Strategies [1]	Project Compatibility
Support Local Sustainability Planning	**Consistent:** The Project, as previously stated, has incorporated pedestrian and bicyclist connectivity to create a more walkable/bikeable community and reduce vehicular traffic. Pedestrian connections have been designed between each the open spaces, commercial areas, mixed-use area, and residential areas. The inclusion of multiple neighborhood parks and the nearness of the planned commercial area and mixed-use area will lead to a more sustainable, complete community.
Protect Natural and Farm Lands	**Consistent:** The Project has incorporated approx. 648 acres of open space land. Of that total, approx. 609 acres will be left untouched as natural open space and consistent with MSHCP standards, dedicated to the RCA. Smaller pocket parks have also been planned to be nearby each of the Project's residential PAs.

[1] Source: SCAG. (2016). SCAG Final *2016-2040 RTP/SCS, Chapter 5: The Road to Greater Mobility & Sustainable Growth - Land Use Strategies*. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_05_RoadToGreaterMobilityAndSustainableGrowth.pdf. Accessed August 6, 2019.
[2] Source: SCAG. (2019). Profile of the City of Murrieta. Retrieved from SCAG Website: https://www.scag.ca.gov/Documents/Murrieta.pdf. Accessed August 6, 2019.

Due to the Project's consistency with SCAG's 2016 RTP/SCS Land Use strategies, the impact is less than significant.

Minimum Land Use Standards

The Project will be made up of nine planning areas (PAs) and three open space areas. Seven of the PAs (1 - 7) will be classified with single-family residential zoning, with PA 8 classified as mixed-use (PA 8) and community commercial (PA 9). The City's MC Title 16 has established minimum land use standards for each zoning designation. Table 4.10-2, *Murrieta Zoning Standards* below summarizes the land use standards that relate to the Project.

Table 4.10-2: Murrieta Zoning Standards [1]

Land Use (Zoning Symbol)	Density Range (du/ac)	Minimum Lot Size
Single Family Residential 2 (SF-2) District	5.1-10.0 du/ac	5,000 sf
Estate Residential 3 (ER-3) District	2.0-3.0 du/ac	10,000 sf
Mixed-Use (MU) District	Up to 24 du/ac	None
Community Commercial (CC) District	None	None
Open Space (OS) District	None	None

[1] Source: City of Murrieta. (2019). Murrieta MC Sections 16.08, 16.10, 16.14. Accessible at http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca.

The community commercial, open space, and mixed-use zones do not have minimum lot sizes standards. These areas are designed to accommodate various types of businesses and uses that meet Murrieta MC development standard requirements. The lots proposed by the Project have been designed to meet these specifications. Table 4.10-3, *Project Parcel Standards* below shows the Project's projected design standards.

Table 4.10-3: Project Parcel Standards [1]

Planning Area	Land Use	Zoning Symbol	Expected Density	Min. Lot Size
PA 1	Single-Family Residential	SF-2	3.5 du/ac	5,500 sf
PA 2	Single-Family Residential	SF-2	3.4 du/ac	4,800 sf
PA 3	Single-Family Residential	SF-2	1.9 du/ac	6,500 sf
PA 4	Single-Family Residential	SF-2	2.3 du/ac	5,500 sf
PA 5	Single-Family Residential	SF-2	2.4 du/ac	6,500 sf
PA 6	Single-Family Residential	SF-2	2.5 du/ac	5,500 sf
PA 7	Single-Family Residential	ER-3	1.2 du/ac	10,000 sf
PA 8	Mixed-Use	MU[2]	Up to 24 du/ac	NA
PA 9	Community Commercial	CC	NA	
OS 1,2,3	Open Space	OS	NA	

1. Source: City of Murrieta. (2019). *Murrieta Hills Specific Plan, Specific Plan Amendment 012-3164*. Chapter 3: Land Use, Table 3-1.
2: The MU zone applies specifically to PA 8. Future development within PA 8 shall occur as multi-family residential, commercial retail and office use, or a combination of both. Allowed development shall occur consistent with development regulations as identified in Section 16.08.020, Residential Districts General Development Standards, and Section 16.08.040, Multi-Family Residential Design Standards, of the City's Development Code for multi-family (MF-2) residential development; and Section 16.10.020, Commercial District General Development Standards, and Section 16.10.030, Commercial Districts Design Standards, of the City's Development Code for Neighborhood Commercial uses unless otherwise indicated in the Murrieta Hills Specific Plan.

The PAs for the Project are consistent with the standards presented in the Murrieta MC. Like the Murrieta MC, the community commercial and open space lots planned for the Project do not have set minimum lot sizes or expected densities. PA 2 of the Project has a minimum lot size of 4,800 sf, which seemingly conflicts with the MC's standard of 5,000 sf minimum for SF-2 zones. However, because specific plans take precedence in conflict situations, the Project will also take precedence in this case. This policy is also reinforced in the Murrieta MC section 16.06.030.B.3 as it states that in the case of conflicts, the provisions of development agreements, such as specific plans, will have authority[25]. Therefore, the impact is less than significant.

Murrieta General Plan 2035

The Project has been designed to be compliant with applicable land use regulations within the Murrieta GP. A summary of the Project's consistency with applicable land use goals and policies in the Murrieta GP is located in Table 4.10-4, *Murrieta General Plan 2035 Consistency* below.

Note that Project implementation will require a Murrieta GP Amendment and Pre-zoning in accordance with Riverside Local Agency Formation Commission (LAFCO) requirements for a sphere of influence (SOI) amendment and annexation. The GP land use designations within the Specific Plan area will change from the current Riverside County GP land use designations of Rural Mountainous (RM), Rural Community-Estate Density Residential (RC-EDR), and Rural Community-Low Density Residential (RC-LDR) to City of Murrieta GP land use designations of Single Family Residential, Multiple Family Residential, Mixed Use, Commercial, and Parks and Open Space.

Project implementation will pre-zone the Project area into the following City of Murrieta zoning districts: Single-Family Residential (SF-2), Estate Residential (ER-3), Mixed Use (MU), Community Commercial (CC),

[25] City of Murrieta. (2019). Murrieta MC §16.06.030.B.3: Conflicts Between Provisions. Accessible at http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca.

and Open Space (OS). Once adopted and made effective following annexation (and the associated SOI amendment) of the Specific Plan area to the City of Murrieta, the MHSPA will constitute the land use and zoning regulations for development of all parcels within the Specific Plan area and shall replace the Riverside County GP and Land Use Ordinance, and the previous Murrieta Hills Specific Plan No. SPM-4.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
LAND USE ELEMENT	
Goal LU-1: A complimentary balance of land uses throughout the community that meets the needs of existing residents and businesses as well as anticipated growth and achieves the community's vision.	
Policy LU-1.1: Identify appropriate locations for residential and non-residential development to accommodate growth through the year 2035 on the General Plan Land Use Policy Map.	**Consistent:** The Project area is presently undeveloped vacant land. The City intends on annexing the Project area, adding both the land and future development to its municipality.
Policy LU-1.2: Ensure future development provides for a variety of commercial, industry, and housing that serve the spectrum of incomes within the region.	**Consistent:** The Project design includes zoning for single-family residential uses (PA 1 – 7), along with mixed-use zoning (PA 8). See Exhibit 3-7, *Proposed Zoning Change*. Community commercial (PA 9) and open space zoning (OS 1 – 3) are also incorporated within the Project area.
Policy LU-1.3: Establish a range of residential density and non-residential intensities to encourage a wide range of development opportunities.	**Consistent:** Refer to Table **4.10-3** of this EIR. Various densities are expected within the planned residential zoning types. The community commercial zone (PA 9) has no set intensity; however, it allows for multiple potential commercial uses.
Policy LU-1.4: Provide for the development of complementary land uses, such as open space, recreation, civic and service uses for all future residential and non-residential development.	**Consistent:** Approx. 652 acres of open space is included in the Project's design. These open spaces will include approx. 609 acres of MSHCP natural land (OS 1), and an approx. 37-acre linear nature park (OS 2) within the developed Project area. An approx. five-4.6 acre public neighborhood park, several pocket parks, and a HOA community center are also proposed.
Policy LU-1.5: Encourage a wide variety of retail and commercial services, such as restaurants, and cultural arts/entertainment, in appropriate locations.	**Consistent:** The Project will include approx. 18 acres of community commercial (PA 9) and approx. 13 acres of mixed-use zoning (PA 8). Anticipated land uses include residential, restaurants, a grocery store, lodging, and other services.
Policy LU-1.6: Promote future patterns of development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities.	**Consistent:** An extension of the existing McElwain Road along the eastern side of the Project ultimately connecting to Zeiders Road at Keller Road is proposed. This will create a direct connection between the cities of Murrieta and Menifee. The Project will be located on the southwest corner of the intersection of Keller Road and I-215, placing the community adjacent to an already existing major transportation corridor. Construction of the I-215/Keller Road interchange is proposed as a separate project.
Policy LU-1.7: Ensure necessary capital improvements are in place prior to new development or completed concurrently.	**Consistent:** The phasing program described in the MHSPA makes sure that all necessary facilities and infrastructure will be ready for use in time for future developments.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
Goal LU-4: A housing stock that meets the diverse needs of Murrieta's existing and future residents.	
Policy LU-4.1: Provide for housing opportunities that address the needs of those who currently live or desire to live in Murrieta.	**Consistent**: According to the SCAG's Profile of the City of Murrieta[2], the population of Murrieta is 113,541 and number of households is 34,498. The median household income ($80,373) is well above the current 2019 poverty guideline ($25,750 for a family of four). The average household size is approx. 3.3 and median age is 33.7. Approx. 67 percent of homes are owner occupied and approx. 33 percent are renter occupied. The Project will offer a variety of housing options including single-family residential housing of varying densities and lot sizes across several PAs (1 – 7) and a multi-family or high-density residential option within a mixed-use development (PA 8).
Policy LU-4.3: Locate multiple-family housing adjacent to jobs, retail, schools, open space, public transportation, and transportation corridors.	**Consistent:** The Project is located adjacent to I-215 and interstate access ramps-Community Commercial zoning (PA 9) has been incorporated into the Project Design. The anticipated uses of these zones (and associated employment opportunities) include retail services, restaurants, a grocery store and lodging. A mixed-use PA (PA 8) is included in the Project and will allow for a mixture of multi-family residential uses in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses in a mixed-use environment. See Policy LU-1.4 above for open space elements of the Project.
Goal LU-9: Land use patterns and urban design that support healthy and sustainable lifestyles and businesses.	
Policy LU-9.1: Encourage human-scale urban design on the neighborhood, block, and building scale.	**Consistent:** The Project will be a walkable community, with sidewalks bordering all neighborhood streets, walking paths, and active recreational facilities, including pocket parks, an HOA community center, and a 4.6-acre public neighborhood park. Nature overlooks are located throughout the development providing residents views of the vast open spaces. Mixed-use and commercial uses are proposed within proximity to the residential PAs, with pedestrian connections (paved walking paths and sidewalks), thereby reducing vehicle miles traveled to obtain goods and services.
Policy LU-9.2: Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial, mixed-use or transit-oriented development areas.	**Consistent:** Approx. 18 acres of community commercial (PA 9) and approx. 13 acres of mixed-use land use (PA 8) has been incorporated in the Project design. These PAs will also feature pedestrian walkways that create connections to the residential PAs. Monumentation, landscaping, and creative lighting, among other features, will create an inviting pedestrian-friendly environment.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
Policy LU-9.3: Encourage new neighborhoods to be built on a pedestrian-scale, within walking distance of parks, neighborhood-serving commercial areas, and other neighborhood amenities.	**Consistent:** Pedestrian accommodations and recreational spaces and facilities will be interspersed throughout the Project area. Commercial and mixed-use developments will also be within walking distance of the planned residential PAs.
Policy LU-9.4: Differentiate between areas zoned as neighborhood commercial and community commercial, encouraging unique, pedestrian-oriented, and neighborhood-serving uses in the neighborhood commercial zone.	**Consistent:** Refer to Policies LU-1.5, LU-4.3, and LU-9.3 above. Adjacent commercial zoning has been included in the Project design. More specifically, the commercial component of the Project (PA 9) is zoned Community Commercial and is located at the entrance to the project that will provide future residents with easy access.
Policy LU-9.5: Promote commercial uses near residential neighborhoods that serve local residents and create neighborhood-gathering places.	**Consistent:** Refer to Policies LU-1.5, LU-4.1, and LU-9.3 above. Adjacent commercial zoning has been included in the Project design, as has a mixed-use component (PA 8) which allows for a mixture of multi-family residential uses in combination with a variety of retail, professional office, service-oriented businesses and/or combinations of such uses in a mixed-use environment.
Goal LU-25: Collaboration with Federal, State, County, and other regional agencies and authorities to ensure compliance with existing and future legislation that affects the City of Murrieta.	
Policy LU-25.5: Comply with procedures and programs of the County of Riverside and the Local Agency Formation Commission for future annexations.	**Consistent:** The City will proceed with the annexation of the Project area in a manner consistent with the Riverside LAFCO and County regulations.
CIRCULATION ELEMENT	
Goal CIR-3: Circulation systems that preserve the quality of residential neighborhoods.	
Policy CIR-3.2: Review the design of all proposed new residential neighborhoods to ensure that "cut through" routes are minimized, and pedestrian connections are maximized.	**Consistent:** The proposed street and sidewalk network will complement the Project area's topography and natural setting, connecting the nine PAs. The extension of McElwain Road will accommodate traffic circulation between the City of Murrieta and the City of Menifee. Refer to Policy LU-9.1 above regarding the abundance of pedestrian connections.
Goal CIR-7: Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.	
Policy CIR-7.1: Encourage future developments to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences.	**Consistent:** Refer to Policies LU-9.1 and LU-9.2 above. Pedestrian walkways/sidewalks will be present along all planned interior roads providing connections between the PAs. Sidewalks are also planned along McElwain Road from Keller Road to Street 'D', and along the south side of Keller Road from east of McElwain Road/Zeiders Road to Gloria Road.
Policy CIR-7.3: Encourage safe pedestrian walkways and ensure compliance with ADA requirements within all developments.	**Consistent:** All pedestrian sidewalks and ramps proposed for the Project will comply with ADA requirements.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
Policy CIR-7.5: Provide pedestrian amenities such as benches, trees, landscaping, and shade trees to encourage people to walk to destinations.	**Consistent:** Landscaped walkways will be incorporated into the circulation design of the Project. Landscaped park areas, such as the neighborhood and pocket parks, will be created as well. Park amenities will include seating areas, picnic tables, and play areas.
HEALTHY COMMUNITY ELEMENT	
Goal HC-4: Public spaces that foster positive human interaction and healthy lifestyles.	
Policy HC-4.1: Create public plazas with seating, art, and play features near shopping and business districts.	**Consistent:** The Project involves the creation of a walkable community that places residential PAs near community commercial (e.g., restaurants, grocery stores), mixed-use (e.g., multi-family residential and retail services), and open spaces (e.g., public parks and natural lands). Neighborhood and pocket parks will be nearby and available to each residential PA.
CONSERVATION ELEMENT	
Goal CSV-5: Hills and ridges are protected for their environmental and aesthetic values.	
Policy CSV-5.1: Promote compliance with hillside development standards and guidelines to maintain the natural character and the environmental and aesthetic values of sloped areas.	**Consistent:** A large amount of the Project area will be left undisturbed. This includes the areas bordering the MSHCP areas to the south and west of the development areas. Approx. 609 acres of the Project's land will be dedicated as natural open space (OS 1) consistent with the MSHCP. This will protect the Project's most sensitive areas and natural resources. Development is planned to occur in the flatter, less sensitive portions of the Project area.
Policy CSV-5.2: Incorporate significant landform features into City parks and open space, where appropriate.	In the case of the Project site, the steeper slopes are primarily within the areas designated as permanent open space preserve and will not be developed. The site's steeper slopes ascend away from the developed areas of the Project (versus situations where development occurs at the top of a slope). The linear nature park preserves an existing riparian corridor through the central portion of the development area, containing coast live oak woodland, southern coast live oak riparian forest, southern willow scrub, and southern cottonwood-willow riparian forest. The large rock outcroppings on-site will become a focal point within the community.
Goal CSV-8: Conservation of biological resources through habitat preservation and restoration, in coordination with other regional efforts and in compliance with state and federal mandates.	
Policy CSV-8.1: Facilitate the conservation of habitat areas and wildlife corridors under the Western Riverside Multiple Species Habitat Conservation Plan.	**Consistent:** Refer to Policy CSV-5.1 above. Areas adjacent to existing MSHCP lands will be kept undeveloped as natural lands consistent with the MSHCP.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
RECREATION AND OPEN SPACE ELEMENT	
Goal ROS-7: Open space areas are planned to protect, conserve, and utilize resources of unique character and value for the community.	
Policy ROS-7.1: Preserve and enhance open space resources in Murrieta.	**Consistent:** The Project will include the allotment of approx. 648 acres of land for open space uses, which includes approx. 609 acres of MSHCP-consistent natural land (OS 1). A linear nature park (OS 2), neighborhood park, and several pocket parks are also proposed. A third open space category (OS 3) includes non-MSHCP open space.
Policy ROS-7.2: Designate open space to preserve habitat and scenic views of natural areas.	**Consistent:** Refer to Policy ROS-7.1 above. The Project includes over 600 acres of MSHCP-compliant open space. Design elements include overlooks at strategic points in the community to capture scenic vistas.
Goal ROS-8: New development is part of a coordinated system of open space, parkland, recreation facilities, and trails.	
Policy ROS-8.1: Encourage the provision of parks, recreation facilities, and/or open space in new development and redevelopment projects.	**Consistent:** Refer to Policy ROS-7.1 above. The Project design includes plans for multiple parks including the approx. 37-acre linear nature park (OS 2) located centrally within the developed area. A neighborhood park and several pocket parks are also proposed. Sidewalks and existing dirt road trails will provide pedestrian connections to the various neighborhoods, recreational amenities, open spaces, and the planned commercial/mixed-use area within the community. See Exhibit 3-8, *Recreation and Open Space Master Plan* for a layout of the Project parks and recreation facilities.
AIR QUALITY ELEMENT	
Goal AQ-1: Improved air quality through participation in regional and local efforts.	
Policy AQ-1.4: Cooperate with the State and Southern California Association of Governments (SCAG) in the implementation of SB 375 – Regional Transportation Planning, Housing, CEQA and Global Warming Emission Reduction Strategies.	**Consistent:** The Project will comply with applicable aspects of the SCAG 2016 RTP/SCS.
Goal AQ-4: Mobile source emissions are reduced by providing a balance of jobs and housing that serve the needs of the community.	
Policy AQ-4.4: Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.	**Consistent:** The Project proposes zoning areas that allow multiple types of residential developments, including single- and multi-family residential. Multi-family residential will be incorporated into a mixed-use element (PA 8). A community commercial, PA 9, is also proposed, potentially providing job opportunities for area residents.
NOISE ELEMENT	
Goal N-1: Noise sensitive land uses are properly and effectively protected from excessive noise generators.	
Policy N-1.1: Comply with Land Use Compatibility for Community Noise Environments.	**Consistent:** The Project will comply with all applicable land use regulations relating to noise. Including those found in Section 16.30 of the Murrieta MC.

Table 4.10-4 Murrieta General Plan 2035 Consistency

General Plan Policy [1]	Project Consistency
Goal N-2: A comprehensive and effective land use planning and development review process that ensures noise impacts are adequately addressed.	
Policy N-2.2: Integrate noise considerations into land use planning decisions to prevent new noise\land use conflicts.	**Consistent:** As previously stated, the Project will remain consistent with applicable noise related land use policies.
HOUSING ELEMENT	
Goal 1: Provide adequate housing opportunities throughout the City of Murrieta.	
Policy 1.1: Provide a range of residential development types in Murrieta, including low-density single-family homes, moderate density townhomes, higher density multi-family units, and residential/commercial mixed use in order to address the City's share of regional housing needs.	**Consistent:** The Project proposes the creation of several single-family PAs with varying lot sizes and dwelling unit densities (PAs 1 – 7). A multi-family residential/ mixed-use component is also proposed (PA 8).
Goal 4: Promote equal housing opportunity for all residents.	
Policy 4.1: Continue to enforce fair housing laws prohibiting discrimination in the building, financing, selling, or renting of housing on the basis of race, ethnicity, ancestry, national origin, religion, sex, disability, age, marital status, familial status, source of income, sexual orientation, or any other arbitrary factor.	**Consistent:** The Project will comply with applicable fair housing laws.
Goal 5: Identify adequate sites to achieve housing variety.	
Policy 5.1: Identify vacant and/or underutilized parcels throughout the City, that can accommodate a variety of housing types for all socioeconomic segments of the community.	**Consistent:** As previously stated, the Project involves the creation of residential zones with varying levels of housing types and densities. These zones allow developments that range from low-density single-family residential units to higher density multi-family units as part of a mixed-use PA.
[1] Source: City of Murrieta. (2011). *City of Murrieta General Plan 2035*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/303/General-Plan-2035. Accessed August 6, 2019. [2] Source: SCAG. (2019). *Profile of the City of Murrieta*. Retrieved from SCAG Website: https://www.scag.ca.gov/Documents/Murrieta.pdf. Accessed August 6, 2019.	

The Project is shown to be consistent with the Murrieta GP sections in Table 4.10-4 above. No conflicts have been found and therefore, the impact is less than significant.

Riverside County Airport Land Use Compatibility Plan (RCALUCP)

The Project does not fall under the RCALUCP's jurisdiction. The nearest airport to the Project area is the French Valley Airport, just outside the Murrieta city limits in unincorporated Riverside County. Although this airport was adopted by the RCALUCP on December 9, 2004[26], the Project is not within its area of influence (AOI). The Project is approximately 3.5 miles away from the French Valley Airport, and approximately one mile away from the French Valley Airport AOI. Due to its distance from both the airport

[26] Riverside County ALUC (2004). *Riverside County Airport Land Use Compatibility Plan, Volume 1, Policy Document*. Page 1-2, Table 1A. Retrieved from RCALUC Website: http://www.rcaluc.org/Portals/13/PDFGeneral/plan/newplan/03-%20Vol.%201%20Overview%20Summary.pdf. Accessed August 6, 2019.

and the airport AOI, the Project is not required to comply with RCALUCP policies and will not lead to a significant impact.

Western Riverside County RCA and MSHCP

RCA-owned lands are present near the south and southwest portions of the Project area. The conservation lands occupy the County parcels with assessor parcel number (APN) designations 384-200-018, 384-190-016, and 384-190-015[27]. The Project includes a jurisdictional boundary change which will be processed through the Riverside LAFCO to amend the City's SOI and annex the MHSPA area, along with the RCA-owned parcels, currently within the unincorporated area of Riverside County, into the City of Murrieta (see Exhibit 3-6, *Proposed General Plan Amendment*). In addition to this, the Project area bordering the conservation lands will be zoned as Open Space. This area will be covered in natural vegetation and will be kept in its natural state as much as possible during construction of the water tank and access road, located in OS 1 south of PA 6 (see Exhibit 2-2, *Land Use Plan*). OS 1 makes up approximately 613 acres of the Project area and extends from the planned development areas to the Project's northern, western, southern, and eastern borders. OS 1's preservation will be consistent with the MSHCP, dedicating approximately 609 acres to the RCA; therefore, no mitigation will be necessary, and the impact is less than significant.

Off-Site Construction and Operations Impacts

MURRIETA GP 2035 – CIRCULATION ELEMENT

The Circulation Element of the Murrieta GP illustrates the City's overall transportation plan to provide for the movement of goods and people within and through the City. The element demonstrates goals and policies to achieve a balanced transportation system that adequately serves the growth and development anticipated in the Land Use Element. Within this element, an analysis of the projected traffic conditions was conducted to establish whether the City's circulation system can accommodate the future traffic demands of buildout, including the land use changes proposed by the GP. The Circulation Element, Exhibit 5-10: *General Plan 2035 Circulation Map*[28] illustrates the extension of McElwain Road, from Clinton Keith Road north to the city/county boundary, as a Secondary Roadway. Per Table 5-2: *Daily Roadway Capacity Values* in the Circulation Element[29], Secondary Roadways include four lanes and an average daily traffic (ADT) of 20,700 vehicles per day (vpd) for level of service (LOS) C.

While the off-site portion of the McElwain Road extension is included on the General Plan 2035 Circulation Map, the roadway classification is inconsistent. As stated above the GP Circulation Map designation for this portion of McElwain Road is Secondary Roadway, a four-lane roadway. The MSHPA classifies this off-site portion of McElwain Road as a Modified Collector and will be a two-lane roadway. However, as part of the required General Plan Amendment, the MHSPA McElwain Road extension (both on-site and off-site

[27] WRCRCA. (2019). RCA MSHCP Information Tool/Map. Accessible at http://wrcrca.maps.arcgis.com/apps/webappviewer/index.html?id=a73e69d2a64d41c29ebd3acd67467abd. Accessed August 6, 2019.

[28] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element.* Exhibit 5-10: General Plan 2035 Circulation Map. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed August 6, 2019.

[29] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element*. Table 5-2: Daily Roadway Capacity Values. Page 5-8. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed August 6, 2019.

portions) and associated roadway classifications will be acknowledged in the Circulation of the Murrieta GP.

The water and sewer service improvements along Keller Road; sewer improvements along Zeiders Road; and the off-site storm drain along Keller Road will not interfere with land use plans as the construction of these improvements will occur beneath existing roads and road rights-of-way. Once construction is completed, these improvements will be subsurface and not result in an adverse impact to an established community. Above-ground drainage structures (concrete ditches) will be placed along McElwain Road from Street 'D' to Linnel Lane and along the north side of Keller Road; however, these improvements will not divide an established community.

MITIGATION MEASURES

No mitigation is required.

4.10.6 CUMULATIVE IMPACTS

For purposes of cumulative land use and planning impact analysis, cumulative impacts are considered for cumulative development according to the related projects; see Table 4-1, *Cumulative Projects List*. Those projects described in Table 4-1 represent past, present, and potential future projects that could lead to cumulative impacts once combined with this Project. The geographic context for the land use and planning cumulative impact analysis includes the jurisdiction of local and regional agencies including the City of Murrieta, Riverside County and SCAG. Future development of the Project site will be reviewed for consistency with adopted planning documents and policies associated with the previously listed agencies, in accordance with the requirements of CEQA, the California Zoning and Planning Law and the California Subdivision Map Act, all of which require findings of plan and policy consistency prior to approval of entitlements for development.

Implementation of the Project, when considered in conjunction with other existing and planned developments listed in Table 4-1, will result in the development of currently vacant and undeveloped sites, or conversion of existing land uses (e.g., from residential to commercial). The approximately 972-acre Project site is presently undeveloped and located in an unincorporated portion of southwestern Riverside County and is not considered in the Murrieta GP. The Riverside County GP, Sun City/Menifee Valley Area Plan Land Use Plan designates the majority of the Project site as RM (Rural Mountainous, 10-acre minimum lot size), with smaller portions designated RC-EDR (Rural Community-Estate Density Residential, two-acre minimum lot size) and RC-LDR (Rural Community - Low Density Residential, half-acre to one-acre lot size). All parcels within the Project boundary are currently zoned by Riverside County as R-R, Rural Residential.

Lastly, development of the MHSPA will be compatible with surrounding land uses and will not conflict with applicable plans or policies. According to Section 5.0: *Additional Required CEQA Topics* of the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in a less than significant impact on land use-related environmental issues with implementation of, and compliance with, mitigation measures which include key regulations and programs; Riverside County ordinances; and Riverside County GP policies.[30]

[30] Riverside County Planning Department. (2015). *County of Riverside Environmental Impact Report No. 521, Section 5.0: Additional Required CEQA Topics*. Page 5-59. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/05-00_AdditionalTopics.pdf. Accessed August 6, 2019.

According to the City of *Murrieta General Plan 2035 EIR, Section 5.1: Land Use*, buildout of the Murrieta GP would result in a less than significant land use impacts with adherence to land use goals and policies identified in the Murrieta GP 2035.[31]

Overall, the cumulative impact of the Project with respect to future development will not be cumulatively considerable and is, therefore, less than significant.

4.10.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable land use or planning impacts have been identified for either the construction or operation phases of the Project.

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[31] City of Murrieta. (2015). *Final Environmental Impact Report, Murrieta General Plan 2035. Section 5.1: Land Use*. Page 5.1-64. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/783/05-01---Land-Use-PDF. Accessed August 6, 2019.

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4.11 NOISE

4.11.1 INTRODUCTION

This section examines both construction-related and operational noise and vibration impacts to on-site and surrounding land uses resulting from Murrieta Hills Specific Plan Amendment (MHSPA or Project) implementation. The Project site is currently located in unincorporated Riverside County but annexation into the City of Murrieta is part of the Project description. The Project site also abuts the cities of Murrieta, Menifee and Wildomar, all of which may potentially be affected by Project implementation as well as associated off-site improvements. Feasible mitigation measures are recommended to avoid or lessen the Project's noise impacts to a less than significant level, but, as discussed in this section, some impacts are considered significant and unavoidable.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

a) Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

c) For a project located within the vicinity of a private airstrip or 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?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.11.5, *Impacts and Mitigation Measures* below, significant unavoidable impacts and a less than significant impact are anticipated.

The analysis is based primarily on Michael Baker International's (MBI) *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment* (2018, Appendix 9.8 of DEIR). Additional information presented in this section was obtained from available public resources including the *City of Murrieta General Plan (Murrieta GP)*, the *City of Murrieta Municipal Code (Murrieta MC)*, the *City of Menifee General Plan (Menifee GP)*, *City of Menifee MC*, the *County of Riverside General Plan (Riverside County GP), and the County of Riverside Zoning Ordinance No. 348,* among others.

Note that the acoustical assessment technical report for this Project (Appendix 9.8) analyzed two alternatives. Alternative 1 (Originally Proposed Project) would include 578 single-family units and 172 multi-family units, with 346,302 square feet of commercial retail. Alternative 2 (Environmentally Preferred Alternative) would have fewer single-family units (557 total), more multi-family units (193 total); and less commercial square footage (222,156 square feet) than Alternative 1. Analyses and data presented in this section are for Alternative 2.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.11.2 ENVIRONMENTAL SETTING

The Murrieta Hills Specific Plan Amendment (MHSPA) area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

Characteristics of Noise

Sound is mechanical energy transmitted by pressure waves through a medium such as air or water; the manner in which sound travels through this medium is influenced by the physical properties of the medium (such as temperature, density, and humidity). Noise is often defined as unwanted sound.

The human ear is not equally sensitive to all frequencies on the audible sound spectrum; for this reason, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, is a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Sound can vary in intensity by over 1 million times within the range of human hearing; for this reason, the decibel scale is based on logarithms (a system used to shorten calculations in mathematics), which keeps sound pressure measurements within a convenient and manageable range. Because the decibel scale is logarithmic in nature, two noise sources do not

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

combine in a simple additive fashion. For example, if two sources each produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. The noise levels presented in this section are expressed in dBA, unless otherwise indicated.

Stationary noise sources such as idling vehicles or on-site construction equipment are considered "point sources," and noise originating from these sources "attenuates," or decreases, based on certain physical principles (e.g., spherical spreading). In accordance with these principles, this analysis assumes that noise originating from a point source attenuates at a rate of 6.0 dBA per doubling of distance (Caltrans, 2013). Application of these attenuation rates account for such factors as the absorption of noise waves into ground surfaces, vegetation, and intervening structures.

Health Effects of Noise

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses would range from "not annoyed" to "highly annoyed." Table 4.11-1, *Noise Descriptors*, provides a listing of methods to measure sound over a period of time.

Table 4.11-1: Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time-varying signal over a given time period. The L_{eq} is the value that expresses the time-averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 p.m. to 10:00 p.m., and +10 dBA for the night, 10:00 p.m. to 7:00 a.m.
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time

	period called the L_{eq}. The L_{dn} is calculated by averaging the L_{eq}'s for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.) by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
Exceedance Level (L_n)	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% (L_{01}, L_{10}, L_{50}, L_{90}, respectively) of the time during the measurement period.
Source: Harris, C. (1979). *Handbook of Noise Control*.	

Effects of Noise on People

The effects of noise on people can be placed into three categories: the subjective effects of annoyance, nuisance, and dissatisfaction; interference with activities such as speech, sleep, and learning; and physiological effects such as hearing loss or sudden startling. Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the third category. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important method of predicting human reactions to a new noise environment is to compare the new noise level to the existing noise level to which one has adapted (i.e., the ambient noise level). In general, the more a new noise level exceeds the former ambient noise level, the less acceptable the new noise environment will be judged. A California Department of Transportation (2009) study reports the following human responses to changes in noise levels:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA increase is considered a "barely perceptible" difference (i.e., the change in noise is perceived but does not cause a human response).
- An increase of at least 5 dBA is required before any noticeable change in human response is expected.
- A 10-dBA increase is subjectively heard as an approximate doubling in loudness.

Groundborne Vibration

Vibration is an oscillatory motion through a solid medium. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for individuals to perceive vibration from sources such as buses and trucks, even in locations near major roads. However, some common vibration sources produce groundborne vibration that can be felt (e.g., construction activities such as blasting, pile driving, and operating heavy equipment). There are several methods employed to quantify vibration. The measurement used in this analysis—peak particle velocity (PPV)—is defined as the maximum instantaneous peak of the vibration signal. PPV is used to describe vibration impacts on buildings and structures and is expressed in inches per second (in/sec). Typically, groundborne vibration generated by human activity attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures); people (residents, especially the elderly and sick); and locales with vibration-sensitive equipment such as hospitals, research labs, and production facilities for computer-chip manufacturing.

The responses of human receptors and structures to vibration are influenced by a combination of factors, including soil/rock type, distance from the source, duration, and the number of perceived events. Energy

transmitted through the ground as vibration can reach levels that cause structural damage; however, humans are very sensitive, and the vibration amplitudes that can be perceived by humans are well below the levels that cause architectural or structural damage. Caltrans (2004) characterizes the annoyance potential of vibration as follows: 0.01 in/sec PPV is "barely perceptible," 0.04 in/sec PPV is "distinctly perceptible," 0.1 in/sec PPV is "strongly perceptible," and 0.4 in/sec PPV is "severe."

Mobile Sources

Mobile noise sources consist of vehicular traffic traveling on the roadway network in the vicinity of the Project site. Mobile source noise is a function of the traffic volume and vehicle speed on the roadways. Keller Road, I-215, Scenic Vista Drive, Zeiders Road, Howard Way, Gloria Road, and Antelope Road are sources of mobile source noise near the Project site.

Stationary Noise Sources

The Project site consists of vacant land. Scattered single-family and agricultural uses north of the Project site, including stables, generate some sources of noise, evident during a site visit performed by Kimley-Horn staff on January 10, 2019. The noise associated with these sources may represent a single-event noise occurrence, short-term or long-term/continuous noise. Other noise sources in the Project area include residential noises, which typically include mechanical equipment such as air conditioners and swimming pool pumps.

Noise Monitoring

To quantify existing ambient noise levels in the Project area, four noise measurements were conducted on March 20, 2018; refer to Table 4.11-2, *Noise Measurements*. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site. Fifteen-minute measurements were taken, between 7:30 a.m. and 3:45 p.m., at each site. Short-term (Leq) measurements are considered representative of the noise levels in the Project vicinity.

Table 4.11-2: Noise Measurements

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBA)	Time
1	North of the Project site on Gloria Road.	47.4	40.6	66.4	89.2	7:38 a.m.
2	Eastern boundary of Project site, adjacent to Scenic View Drive and parallel to I-215.	76.7	52.8	114.7	144.5	11:59 a.m.
3	Northeast section of Project site along un-named dirt road adjacent to dirt agricultural fields. Proposed Planning Area 1.	52.0	30.3	71.1	84	2:57 p.m.
4	Northeast section of Project site along un-named dirt road that leads to water tanks. Proposed Planning Area 4.	36.5	28.1	64.8	90.7	3:23 p.m.

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 23. Table 9. (EIR Appendix 9.8).

Meteorological conditions were clear skies, warm temperatures, with light wind speeds (5 miles per hour), and low humidity. Measured noise levels during the daytime measurements ranged from 36.5 to 76.7 dBA Leq. Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring

equipment complies with applicable requirements of the American National Standards Institute (ANSI) for Type I (precision) sound level meters.

Sensitive Receptors

Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. Existing sensitive receptors located within 1.25 miles of the Project site include residential uses, recreational uses, hospital and medical office uses, schools, commercial and retail uses and a church. Sensitive receptors are listed in Table 4.11-3, *Sensitive Receptors*.

Table 4.11-3: Sensitive Receptors

Type	Name	Distance from Project Site (feet)	Direction from Project Site	Location
Residential	Residential Uses	Adjacent	North	Along Keller Road
	Residential Uses	Adjacent	South	Along Bottle Brush Way
Schools	Oak Meadows Elementary School	2,789	Northeast	28600 Poinsettia Street, Murrieta, CA 92563
	Vista Murrieta High School	5,435	Southeast	28251 Clinton Keith Road, Murrieta, CA 92563
	Antelope Hills Elementary School	5,724	South	36105 Murrieta Oaks Avenue, Murrieta, CA 92562
	Tovashal Elementary School	6,650	South	23801 Raphael, Murrieta, CA 92562
Hospital/ Medical Center	Loma Linda University Medical Center - Murrieta	350	East	28062 Baxter Rd, Murrieta, CA 92563
	Kaiser Permanente Medical Center	1,100	Northeast	28150 Keller Rd, Murrieta, CA 92563
Places of Worship	Menifee Hills Bible Church	4,445	North	33220 Sweetwater Canyon Road, Menifee, CA 92584
Parks	Mapleton Park	2,730	Northeast	Poinsettia St & Daffodil Way, Murrieta, CA 92563
	Springbrook Park	2,665	East	Sevilla St & Albacete Avenue, Murrieta, CA 92563
	Antelope Hills Park	6,463	South	Carlton Oaks Street, Murrieta, CA 92562
	Blackmore Ranch Park	5,136	South	36012 Nutmeg Street, Murrieta, CA 92562
	Oak Mesa Park	5,150	South	23680 Clinton Keith Road, Murrieta, CA 92562

Note: Distances are measured from the exterior Project boundary only and not from individual construction areas within the interior of the Project site.

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 24. Table 10. (EIR Appendix 9.8).

Mobile Noise Measurements

Most of the existing noise in the Project area is generated from vehicle sources traveling along I-215. As shown in Table 4.11-4, *Existing Traffic Noise Levels*, mobile noise sources in the vicinity of the Project site range from 24.9 to 63.3 dBA.

Table 4.11-4: Existing Traffic Noise Levels

Roadway Segment	Existing Conditions				
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Keller Road					
Howard Way to Zeiders Rd.	290	44.6	-	-	-
Zeiders Road to I-215	1,100	50.4	-	-	-
I-215 to Mapleton Avenue.	3,160	24.9	-	-	-
Mapleton Avenue to Whitewood Road/Menifee Road	2,910	54.6	44	-	-
Antelope Road					
Keller Road to Mapleton Avenue	8,110	61.4	125	58	-
Keller Road to Scott Road	12,300	63.3	165	76	36
Zeiders Road					
North of Keller Road	920	52.0	-	-	-
McElwain Road					
Keller Road to Project Access	Does Not Exist				
Project Access to Linnel Lane	Does Not Exist				
Linnel Lane to Clinton Keith Road	15,020	60.5	108	50	-

Notes: ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level.
Noise modeling is based on traffic data within *Murrieta Hills Specific Plan Traffic Impact Analysis*, prepared by MBI (November 2018).

Source: MBI. (2018). Acoustical Assessment for the Murrieta Hills Specific Plan Amendment. Page 26. Table 11. (EIR Appendix 9.8). Noise modeling is based on traffic data within *Murrieta Hills Specific Plan Traffic Impact Analysis,* prepared by Michael Baker International (November 2018).

Traffic noise associated with the I-215 freeway was modeled using the Federal Highway Administration (FHWA) Traffic Noise Model version 2.5 (TNM 2.5). Mobile source noise was modeled using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108), which incorporates several roadway and site parameters. The model does not account for ambient noise[2] levels, but only noise generated by automobile traffic on the roadway. Noise projections are based on modeled vehicular traffic as derived from the *Murrieta Hills Traffic Impact Analysis* (*Traffic Study*) prepared by Michael Baker International. Existing modeled traffic noise levels are shown in Table 4.11-4 above.

[2] According to the FHWA "Ambient noise is the all-encompassing sound associated with an environment, which is usually a composite of sounds from several sources, near and far." FHWA. (2018). *Noise Measurement Handbook – Final Report, FHWA-HEP-18-065*. Retrieved from FHWA Website: https://www.fhwa.dot.gov/Environment/noise/measurement/handbook.cfm#toc492990895. Accessed July 25, 2019.

4.11.3 REGULATORY FRAMEWORK

FEDERAL

Federal Transit Administration Noise and Vibration Guidance

The Federal Transit Administration (FTA) has published the Transit Noise and Vibration Impact Assessment Report to provide guidance on procedures for assessing impacts at different stages of transit project development. The report covers both construction and operational noise impacts, and describes a range of measures for controlling excessive noise and vibration. The specified noise criteria are an earlier version of the criteria provided by the Federal Railroad Administration's High-Speed Ground Transportation Noise and Vibration Impact Assessment. In general, the primary concern regarding vibration relates to potential damage from construction. The guidance document establishes criteria for evaluating the potential for damage for various structural categories from vibration.

STATE

California Government Code

California Government Code § 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services.

The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 Community Noise Equivalent Level (CNEL) and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research, provides guidance for the acceptability of specific land use types within areas of specific noise exposure. Table 4.11-5, *Land Use Compatibility for Community Noise Environments*, presents guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. OPR guidelines are advisory in nature. Local jurisdictions, including the City of Murrieta, have the responsibility to set specific noise standards based on local conditions.

Table 4.11-5: Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70-75	75-85
Residential – Multiple-Family	50 – 65	60 - 70	70 – 75	70 - 85
Transient Lodging – Motel, Hotels	50 – 65	60 - 70	70 – 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 – 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 - 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 - 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 – 85	NA
NA: Not Applicable; L_{dn}: average day/night sound level; CNEL: Community Noise Equivalent Level				
Notes: Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Clearly Unacceptable – New construction or development should generally not be undertaken.				
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 15. Table 3. (EIR Appendix 9.8).				

LOCAL

City of Menifee General Plan Vision 2030

These policies are relevant as the Project site lies immediately adjacent to the southern border of the City of Menifee and Project-related traffic, including both construction and operational trips will use Keller Road and other road segments and intersections in the City of Menifee. The Menifee GP Noise Element[3] includes policies, standards, criteria, programs, and maps related to protecting public health and welfare from noise. The applicable goals and policies related to noise limits in Menifee are listed below.

Goal N-1: ***Noise-sensitive land uses are protected from excessive noise and vibration exposure.***

Policy N-1.7: Mitigate exterior and interior noises to the levels listed in Table 4.11-6 below to the extent feasible, for stationary sources adjacent to sensitive receptors.

Policy N-1.11: Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.

[3] City of Menifee. (2012). *Menifee General Plan Vision 2030, Noise Element*. Retrieved from City of Menifee Website: https://cityofmenifee.us/228/Noise-Element. Accessed August 11, 2019.

Table 4.11-6: Stationary Source Noise Standards

Land Use (Residential)	Interior Standards	Exterior Standards
10:00 p.m. to 7:00 a.m.	40 L_{eq} (10 minutes)	45 L_{eq} (10 minutes)
7:00 a.m. to 10:00 p.m.	55 L_{eq} (10 minutes)	65 L_{eq} (10 minutes)

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 16. Table 4. (EIR Appendix 9.8).

Policy N-1.13: Require new development to minimize vibration impacts to adjacent uses during demolition and construction.

City of Menifee Municipal Code

The following sections of the Menifee MC[4] are applicable to the Project because the Project will affect noise receptors within the City of Menifee. Menifee MC Section 9.09, *Noise Control Regulations*, contains the Menifee Noise Control Regulations. Menifee MC 9.09.030 relates to construction related exemptions. Specifically, private construction projects are exempt from the Menifee Noise Control Regulations, provided that construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September, and construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May. Menifee MC Section 9.09.050 describes the General Sound Level Standards, which does not allow any sound, or allow the creation of any sound, on any property that causes the exterior and interior sound level on any other occupied property to exceed the sound level standards set forth in Table 4.11-6 above.

City of Murrieta General Plan 2035

The Murrieta GP Noise Element[5] identifies noise-sensitive land uses and noise sources, defines areas of noise impact, and establishes goals, policies, and programs to ensure that City residents are protected from excessive noise. The following lists applicable noise goals and policies obtained from the General Plan:

Goal N-1: ***Noise sensitive land uses are properly and effectively protected from excessive noise generators.***

Policy N-1.1: Comply with the Land Use Compatibility for Community Noise Environments.

Policy N-1.2: Protect schools, hospitals, libraries, churches, convalescent homes, and other noise-sensitive uses from excessive noise levels by incorporating site planning and project design techniques to minimize noise impacts. The use of noise barriers shall be considered after all practical design-related noise measures have been integrated into the project. In cases where sound walls are necessary, they should help create an attractive setting with features such as setbacks, changes in alignment, detail and texture, murals, pedestrian access (if appropriate), and landscaping.

[4] City of Menifee. (2019). *Menifee Municipal Code*. Retrieved from City of Menifee Website: https://cityofmenifee.us/318/Municipal-Code. Accessed August 11, 2019.

[5] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 11: Noise Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/721/11---Noise-Element-PDF. Accessed August 11, 2019.

Policy N-1.3: Discourage new residential development where the ambient noise level exceeds the noise level standards set forth in the Noise and Land Use Compatibility Guidelines and the City Noise Ordinance.

Policy N-1.4: Coordinate with the County of Riverside and adjacent jurisdictions to minimize noise conflicts between land uses along the City's boundaries.

Goal N-2: ***A comprehensive and effective land use planning and development review process that ensures noise impacts are adequately addressed.***

Policy N-2.1: Review and update the Noise Ordinance to ensure that noise exposure information and specific policies and regulations are current.

Policy N-2.2: Integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts.

Policy N-2.3: Consider the compatibility of proposed land uses with the noise environment when preparing, revising, or reviewing development proposals.

Policy N-2.4: Encourage proper site planning and architecture to reduce noise impacts.

Policy N-2.5: Permit only those new development or redevelopment projects that have incorporated mitigation measures, so that standards contained in the Noise Element and Noise Ordinance are met.

Policy N-2.6: Incorporate noise reduction features for items such as, but not limited to, parking and loading areas, ingress/egress point, HVAC units, and refuse collection areas, during site planning to mitigate anticipated noise impacts on affected noise-sensitive land uses.

Policy N-2.7: Require that new mixed-use developments be designed to limit potential noise from loading areas, refuse collection, and other activities typically associated with commercial activity through strategic placement of these sources to minimize noise levels on-site.

Policy N-2.8: Encourage commercial uses in mixed-use developments that are not noise intensive.

Policy N-2.9: Orient mixed-use residential units, where possible, away from major noise sources.

Policy N-2.10: Locate balconies and operable windows of residential units in mixed-use projects away from the primary street and other major noise sources, where possible, or provide appropriate mitigation.

Goal N-3: ***Noise from mobile sources is minimized.***

Policy N-3.1: Consider noise mitigation measures in the design of all future streets and highways and when improvements occur along existing freeway and highway segments.

Policy N-3.2: Work with Caltrans to achieve maximum noise abatement in the design of new highway projects or with improvements to interchanges along the I-15 and I-215 Freeways, and with widening of SR-79.

Policy N-3.3: Encourage the construction of noise barriers and maintenance of existing noise barriers for sensitive receptors located along the I-15 and I-215 Freeways.

Policy N-3.4: Enforce the use of truck routes to limit unnecessary truck traffic in residential and commercial areas. Consider requiring traffic plans for construction projects and new commercial and industrial uses.

Policy N-3.5: Consider the use of rubberized asphalt for new roadways or roadway rehabilitation projects.

Policy N-3.6: Coordinate with appropriate agencies in the siting, design, and construction of rail stations and track alignments to ensure that adjacent land uses are considered and noise attenuation measures are addressed.

Goal N-4: ***Reduced noise levels from construction activities.***

Policy N-4.1: Regulate construction activities to ensure construction noise complies with the City's Noise Ordinance.

Policy N-4.2: Limit the hours of construction activity in residential areas to reduce intrusive noise in early morning and evening hours and on Sundays and holidays.

Policy N-4.3: Employ construction noise reduction methods to the maximum extent feasible. These measures may include, but not limited to, shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied sensitive receptor areas, and use of electric air compressors and similar power tools, rather than diesel equipment.

Policy N-4.4: Encourage municipal vehicles and noise-generating mechanical equipment purchased or used by the City to comply with noise standards specified in the City's Municipal Code, or other applicable codes.

Policy N-4.5: Allow exceedance of noise standards on a case-by-case basis for special circumstances including emergency situations, special events, and expedited development projects.

Policy N-4.6: Ensure acceptable noise levels are maintained near schools, hospitals, convalescent homes, churches, and other noise-sensitive areas.

Table 4.11-7, *Exterior Noise Standards*, provides noise standards for designated land uses within the City and Table 4.11-8, *Interior Noise Standards*, provides the City's interior noise standards.

Table 4.11-7: Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 p.m. – 7:00 a.m. (Nighttime)	45
		7:00 a.m. – 10:00 p.m. (Daytime)	50
	Residential properties within 500 feet of a kennel(s)	7:00 a.m. – 10:00 p.m. (Daytime)	70
III	Commercial properties	10:00 p.m. – 7:00 a.m. (Nighttime)	55
		7:00 a.m. – 10:00 p.m. (Daytime)	60
IV	Industrial properties	Anytime	70

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 20. Table 5. (EIR Appendix 9.8).

Table 4.11-8: Interior Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Allowable Interior Noise Level (dB)
All	Multi-family Residential	10:00 p.m. – 7:00 a.m.	40
		7:00 a.m. – 10:00 p.m.	45
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 20. Table 6. (EIR Appendix 9.8).			

City of Murrieta Municipal Code

The Murrieta MC[6] includes several references to noise control. The following sections of the Murrieta MC are applicable to the proposed Project.

§ 16.30.60 Activities Exempt from Regulations

The following activities shall be exempt from the provisions of this chapter:

H. Motor Vehicles on Public Right-of-Way and Private Property. Except as provided in this chapter, all vehicles operating in a legal manner in compliance with local, state, and federal vehicle noise regulations within the right-of-way or on private property.

§ 16.30.130 Acts Deemed Violations

A. Construction Noise

1. Operating or causing the operation of tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of seven p.m. and seven a.m., or any time on Sundays or holidays, so that the noise creates a noise disturbance across a residential or commercial property line, except for emergency work of public service utilities.

2. Construction activities shall be conducted in a manner that the maximum noise levels at the affected structures will not exceed those listed in the following schedule:

a. Residential Structures:

1) Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than ten days) of mobile equipment:

Table 4.11-9: Maximum Permitted Noise Levels for Mobile Equipment

Time Interval	Single-Family Residential	Multi-Family Residential	Commercial
Daily. Except Sundays and legal holidays. 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily. 8:00 p.m. to 7:00 a.m. and all-day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 21. Table 7. (EIR Appendix 9.8).			

2) Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation periods (three days or more):

[6] City of Murrieta. (2019). *Murrieta Municipal Code*. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/259/Development-Code. Accessed August 11, 2019.

Table 4.11-10: Maximum Permitted Noise Levels for Stationary Equipment

Time Interval	Single-Family Residential	Multi-Family Residential	Commercial
Daily. Except Sundays and legal holidays 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily. 8:00 p.m. to 7:00 a.m. and all-day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 21. Table 8. (EIR Appendix 9.8).			

K. Vibration. Operating or permitting the operation of any device that creates vibration that is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way is prohibited. The perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

4.11.4 SIGNIFICANCE CRITERIA

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if one or more of the following occurs:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (see Impact 4.11-1);
- Generation of excessive groundborne vibration or groundborne noise levels? (see Impact 4.11-2);
- For a project located within the vicinity of a private airstrip or 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? (see Impact 4.11-3)

SIGNIFICANCE OF CHANGES IN TRAFFIC NOISE LEVELS

An off-site traffic noise impact typically occurs when there is a discernable increase in traffic and the resulting noise level exceeds an established noise standard. In community noise considerations, changes in noise levels greater than 3 dB are often identified as substantial, while changes less than 1 dB will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dB. However, this is based on a direct, immediate comparison of two sound levels. Community noise exposures occur over a long period of time and changes in noise levels occur over years (rather than the immediate comparison made in a laboratory situation). Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dB, and 3 dB is the most commonly accepted discernable difference. A 5-dB change is generally recognized as a clearly discernable difference.

As traffic noise levels approach or exceed the normally acceptable compatibility guideline (refer Table 4.11-5, *Land Use Compatibility for Community Noise Environments*), a 3 dB increase as a result of

the Project is used as the increase threshold for the Project. Thus, the Project would result in a significant noise impact when a permanent increase in ambient noise levels of 3 dB occur upon Project implementation and the resulting noise level exceeds the applicable exterior standard at a noise-sensitive use.

METHODOLOGY AND ASSUMPTIONS

Noise Levels Standards

Consistency with local noise standards are determined by comparing the applicable noise level standard to published equipment noise levels. In some cases, this requires calculating noise levels at various distances (i.e., to a property line or sensitive receptor) using widely published noise propagation equations[7] in order to assess whether a potential conflict could occur.

Groundborne Vibration during Construction

The Project would result in significant impacts if it were to generate vibration levels substantial enough to damage nearby structures or buildings, or result in vibration levels that are commonly accepted as an annoyance to sensitive land uses. Caltrans characterizes the annoyance potential of vibration as follows: 0.01 in/sec PPV is "barely perceptible," 0.04 in/sec PPV is "distinctly perceptible," 0.1 in/sec PPV is "strongly perceptible, and 0.4 in/sec PPV is "severe."[8]

PROJECT DESIGN FEATURES

- The Project land use plan prohibits residential land uses within 500 feet from the I-215 right-of-way, minimizing mobile source noise impacts.
- The Project represents a substantial reduction in density and overall development footprint in comparison to the currently approved Specific Plan, with corresponding reductions in construction-related grading and traffic noise, and operational traffic noise.
- Use of modern construction equipment and techniques.
- Use of modern building materials and techniques, including glass view fences; screening/insulation of noise-generating or vibrating equipment; and screening/buffering between commercial and residential development using plant material and masonry walls.

4.11.5 IMPACTS AND MITIGATION MEASURES

Impact 4.11-1: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Level of Significance: Significant and Unavoidable Impact

[7] FHWA. (2006). *Roadway Construction Noise Model (FHWA-HEP-05-054)*.
[8] Caltrans. (2004). *Transportation and Construction-Induced Vibration Guidance Manual*.

CONSTRUCTION

Project construction would occur in three phases. Groundborne noise and other types of construction-related noise impacts, including blasting, would typically occur during excavation activities of the grading phase. For additional information on blasting activities, see *Blasting Construction* on page 4.11-18 below and Section 4.6, *Geology and Soils*. This phase of construction has the potential to create the highest levels of noise. Typical noise levels generated by construction equipment are shown in Table 4.11-11, *Maximum Noise Levels Generated by Construction Equipment.* It should be noted that the noise levels identified in Table 4.11-11 are maximum sound levels (L_{max}), which are the highest individual sound occurring at an individual time period. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Table 4.11-11: Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor[1]	L_{max} at 50 Feet (dBA)
Concrete Saw	20	90
Crane	16	81
Concrete Mixer Truck	40	79
Backhoe	40	78
Dozer	40	82
Excavator	40	81
Forklift	40	78
Paver	50	77
Roller	20	80
Tractor	40	84
Water Truck	40	80
Grader	40	85
General Industrial Equipment	50	85

Note:
1. Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 31. Table 12. (EIR Appendix 9.8).

Pursuant to Murrieta MC Section 16.30.130, construction activities are prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, or anytime on Sundays or holidays; however, emergency work on public service utilities are exempt from these restrictions. Construction is permitted between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. However, the City has placed numerical limits on construction noise from mobile and stationary equipment based on land use. If construction noise were measured from a surrounding single-family residential, multi-family residential, or commercial property and the levels exceeded the maximum noise limits identified in Table 4.11-9 and Table 4.11-10, a significant impact would occur.

The potential for construction-related noise to affect nearby residential receptors would depend on the location and proximity of construction activities to these receptors. Construction would be acoustically

dispersed as it would occur throughout the Project site and would not be concentrated or confined in the area directly adjacent to sensitive receptors. It should be noted that the noise levels depicted in Table 4.11-11 are maximum noise levels, which would occur sporadically when construction equipment is operated in proximity to sensitive receptors. Table 4.11-12, *Construction Average Leq (dBA) Noise Levels by Receptor Distance and Construction Activity*, identifies the nearest receptor to each phase of construction and the anticipated short-term construction noise levels generated during each construction activity. The distances were measured from the receptor property boundary to the center of each phase of construction.

Table 4.11-12: Construction Average Leq (dBA) Noise Levels by Receptor Distance and Construction Activity

Location Description	Noise Modeling Locations	Distance (ft.)	Construction Activities	Estimated Construction Noise Level	Threshold	Exceed Threshold
Phase 1						
Existing Single-Family Residence: North of Keller Road on Zeiders Road	1	1,800	Grading	52.3	60 dBA	No
			Construction	50.3		No
			Paving	43.5		No
			Painting	49.0		No
Phase 2						
Single-Family Residence: (Westernmost Phase 1 Residence	2	1,500	Grading	53.9	60 dBA	No
			Construction	51.9		No
			Paving	45.1		No
			Painting	50.6		No
Phase 3						
Multi-Family Residence (Phase 2 Construction)	3	850	Grading	58.8	65 dBA	No
			Construction	56.8		No
			Paving	50.1		No
			Painting	55.6		No
Existing Single-Family Residence: North of Keller Road on Zeiders Road	1	550	Grading	57.6	60 dBA	No
			Construction	55.2		No
			Paving	50.8		No
			Painting	56.3		No

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 32. Table 32. (EIR Appendix 9.8).

Given the sporadic and variable nature of construction and the implementation of time limits and noise limits, specified in the Murrieta MC, noise impacts would be less than significant. Additionally, Mitigation Measure (MM) NOI-1 (see page 4.11-26) requires best management practices during construction to further reduce the potential for short-term noise impacts. Therefore, impacts would be less than significant with mitigation incorporated.

Blasting Construction

Project construction activities would require controlled blasting in areas where non-rippable rock using conventional excavation process using heavy earth moving equipment is not feasible. Specifically, blasting would be required in PA 3, PA 5, and PA 7 where it is likely that cuts in these areas would require blasting

where the most resistant rock is located.[9] Additionally, for the construction of McElwain Roadway, excavation of cut slopes in granodiorite deposits may require localized heavy ripping or local blasting.[10]

A typical blasting operation includes drilling a hole, filling the hole with explosive material, capping the hole, and detonating the material. Sound levels from a rock drill have been measured at 94 dBA at 50 feet. Blasting is a short-term event, typically lasting no more than several seconds. The nearest existing noise-sensitive receivers to where blasting would occur is the residence at 35256 McElwain Road, which is located approximately 85 feet east-southeast of the McElwain Road extension; the residence at 27740 Linnel Lane, which is located approximately 300 feet west-northwest of the McElwain Road extension; and the Loma Linda University Health Center - Murrieta, located approximately 575 feet east of the McElwain Road extension. Other noise-sensitive receivers in proximity of the Project include single-family residences north of Keller Road and single-family residences to the south of the Project site in the Greer Ranch residential community. The single-family residences north of Keller Road would be located approximately 2,600 feet from the nearest blasting area within PA 5, the single-family residences at Greer Ranch would be located approximately 1,750 feet south of blasting activities at PA 7, and the Loma Linda University Health Center would be located approximately 2,000 feet from the nearest blasting area within PA 3. However, potential blasting activities for the construction of McElwain Roadway would potentially affect the Greer Ranch area and Loma Linda University Health Center, in addition to the two previously listed single-family residences. The estimated blasting noise levels at these sensitive receptors would range from approximately 89 dBA at 85 feet to approximately 60 dBA at 2,600 feet, assuming a typical drop in noise levels of 6.0 dBA for every doubling of distance from the source.

Blasting would also have the potential to impact sensitive wildlife species in the Open Space (OS) 1 - Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area on the Project site. Blasting sites AT-15 and AT-17, located north of PA 7, are within the MSHCP Conservation Area. Blasting activities associated with site AT-14, located north of PA-7 and site AT-19, located north of PA 5, are located adjacent north of the Project site boundary, but may impact MSHCP Open Space south of the sites. See Exhibit 4.11-1, *Potential Blasting Locations* for potential blasting site locations.

MM NOI-2 (see page 4.11-26) and MM NOI-3 (see page 4.11-27) would be required to reduce noise impacts during blasting activities. MM NOI-2 (see page 4.11-26) requires implementation of a Blast Program to ensure that noise levels do not exceed the City's applicable thresholds during blasting activities. MM NOI-3 (see page 4.11-27) prohibits construction-related noise within 200 feet of the edge of the MSHCP Conservation Area during the typical breeding season of February 15 to August 31. However, this time period may be expanded to start on January 1 if raptor surveys (required by MM BIO-3, see page 4.11-27) determine that active nests are found. Construction activities within and adjacent to any occupied sensitive habitat areas must not exceed 75 dBA Leq, or ambient noise levels if higher than 75 dBA Leq, during the breeding season. MM NOI-3 (see page 4.11-27) also requires an acoustical analysis to demonstrate that the 75 dBA noise level is not exceeded at any occupied sensitive habitat areas identified in biological pre-construction surveys. Implementation of MM NOI-2 (see page 4.11-26) and MM NOI-3 (see page 4.11-27) would reduce the impact of blasting activities. Considering the temporary nature of blasting noise, and the anticipated noise attenuation due to distance between blasting areas

[9] Leighton and Associates, Inc. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and Interstate 215, Murrieta California.* (EIR Appendix 9.5.1).

[10] Leighton and Associates, Inc. (2014). *Geotechnical/Geologic Review Portion of Tentative Tract Map No. 35853 Murrieta Hills Specific Plan, McElwain Roadway City of Murrieta, California.* Site Geologic Map on page 28. (EIR Appendix 9.5.2).

and sensitive receptors, no significant impacts are anticipated with implementation of recommended mitigation measures.

Off-Site Construction Impacts

MCELWAIN ROAD EXTENSION

Potential blasting activities for the construction of McElwain Road would potentially affect the Greer Ranch residential community area, in addition to a few rural residential parcels southwest of the proposed road, and two single-family rural residential parcels immediately adjacent to the McElwain Road extension area.

One single-family rural residence is approximately 300 feet from the roadway extension and the other is approximately 85 feet away. Construction of the McElwain Road extension would involve grading and paving equipment. Table 4.11-11 shows that grading equipment (e.g., graders, dozers, loaders, backhoes, etc.) have noise levels as high as 85 dBA at 50 feet. Additionally, paving equipment (e.g., pavers, rollers, etc.) have noise levels as high as 80 dBA at 50 feet. At the closest residence (approximately 85 feet) typical grading and paving equipment would result in noise levels ranging from 74 to 79 dBA.

Although overall construction activities would occur over several phases during multiple years, construction equipment would not operate in the vicinity of the two single-family homes for extended periods (i.e., not more than ten days, as construction of the roadway extension would occur in a linear fashion). From the perspective of a sensitive receptor, the construction equipment approaches, passes by, and then recedes into the distance. Peak noise levels would thus be periodic, intermittent, and temporary during brief pass-by periods. Section 16.30.130 of the Murrieta MC establishes a 75 dBA daytime (7:00 a.m. to 10:00 p.m.) noise standard for mobile construction equipment that would operate for less than ten days (refer to Table 4.11-9). As noted above, typical grading equipment would generate 79 dBA at the closest sensitive receptor and would exceed the City's 75 dBA standard. MM NOI-1 (see page 4.11-26) would limit the use of heavy equipment within 200 feet of the residences along the McElwain Road extension. Alternatively, temporary noise barriers may be used to mitigate this impact.

Construction of the McElwain Road extension would occur approximately 1,670 feet east of the nearest residence at the Greer Ranch residential community; within approximately 1,200 feet of rural residential lots to the southwest; within approximately 300 feet of the residence at 27740 Linnel Lane; and within approximately 85 feet of the residence at 35256 McElwain Road. A single-family residential neighborhood is located approximately 1,300 feet south of the southern terminus of McElwain Road extension. Implementation of MM NOI-1 (see page 4.11-26) would require best management practices during construction to further reduce the potential for short-term noise impacts. As mentioned above, MM NOI-2 (see page 4.11-26) requires the implementation of a Blast Program to ensure that noise levels do not exceed the City's applicable thresholds during blasting activities. Construction is permitted between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, given that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. Due to the proximity of the residential dwellings near the McElwain Road extension, even with implementation of MM NOI-1 (see page 4.11-26) through MM NOI-3 (see page 4.11-27), noise and vibration levels from either blasting or traffic may exceed the limits prescribed in Murrieta MC sections 4.11-10 and 4.11-11. A significant and unavoidable impact would occur.

ZEIDERS ROAD SEWER LINE

As part of the proposed Project, several infrastructure improvements would occur off-site, outside the Specific Plan area. For sewer service, improvements are proposed along Keller Road and Zeiders Road, both within the jurisdiction of the City of Menifee. The point of connection into the EWMD is proposed on Zeiders Road, 2,600 feet north of Keller Road near the Zeiders Road and Ciccotti Street intersection. There are a few single-family residences located along this section of Zeiders Road. Construction of the off-site sewer would commence during the Phase 1 construction, tentatively scheduled for 2023. Pipeline construction in urban residential areas is a typical process throughout Riverside County and its cities. This section of Zeiders Road is subject to the City of Menifee Noise Control Regulations, which exempts construction noise if it occurs between the hours of 6:00 a.m. to 6:00 p.m. (June through September) and 7:00 a.m. to 6:00 p.m. (October through May)[11]. In consideration of the relatively brief period of pipeline construction and compliance with the City of Menifee Noise Ordinance and MM NOI-1 (see page 4.11-26), sewer line construction on Zeiders Road is not anticipated to create significant noise impacts.

OPERATIONS

Off-Site Mobile Noise

Project buildout would result in additional traffic on adjacent roadways, thereby increasing vehicular noise in the vicinity of existing and proposed land uses. The Project's trip generation, discussed in more detail in Section 4.13, *Transportation,* would generate a total of approximately 663 trips during the a.m. peak hour and 1,239 trips during the p.m. peak hour, and approximately 13,209 average daily trips (see Table 64 of the TIA located in Appendix 9.9 of the EIR).

As depicted in Table 4.11-13, under the "Future with Project" scenario, noise levels would range from approximately 58.0 dBA to 65.7 dBA, with the highest noise levels also occurring along Antelope Road, between Keller Road and Scott Road. Table 4.11-13 also compares the "Future Without Project" scenario to the "Future with Project" scenario. The noise levels would result in a maximum increase of 11.0 dBA along McElwain Road (Keller Road to Project Access) as a result of the Project. This is reduced from Alternative 1 (Originally Proposed Project), which would have resulted in a maximum increase of 12.1 dBA. The McElwain Road segment is predominantly internal to the Project site (see discussion below for on-site mobile noise impacts). South of the Project site, McElwain Road runs through areas consisting primarily of vacant land zoned Office (O)[12], except for one single-family home located approximately 85 feet from the future McElwain Road centerline and a second single-family residence located approximately 300 feet west-northwest of the alignment.

The increase threshold of 3.0 dBA would be exceeded along McElwain Road (from Keller Road to Linnel Lane) and the associated noise level of approximately 62.9 dBA (for McElwain Road from Keller Road to Project Access) would exceed the normally acceptable compatibility guideline of 60 dBA for residential properties; refer to Table 4.11-5. However, 62.9 dBA is within the "conditionally acceptable" Community Noise Exposure standard range of 55-70 dBA for single-family residential land uses (refer to Table 4.11-5). Although the resultant noise level for this single-family residence would be within conditionally acceptable levels, the absolute increase from existing conditions would be approximately 11 dBA, which exceeds the 3.0 dBA increase threshold for increase in ambient noise levels. Therefore, Project implementation would

[11] American Legal Publishing Corporation (ALPC). (2019). *City of Menifee, California Code of Ordinances, §9.09.030 – Construction-Related Exemptions*. Retrieved from City Menifee Website: https://cityofmenifee.us/318/Municipal-Code. Accessed July 25, 2019.

[12] City of Murrieta. (2014). *Murrieta Zoning Map*. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/DocumentCenter/View/299/Zoning-Map-PDF?bidId=. Accessed July 25, 2019.

significantly increase noise levels along the improved McElwain Road and a potentially significant impact would occur.

Table 4.11-13: Future Traffic Noise Levels

Roadway Segment	Future Without Project					Future With Project					Difference In dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour	
Keller Road											
Howard Way to Zeiders Rd.	5,990	57.8	71	33	-	6,250	58.0	73	34	-	0.2
Zeiders Rd. to I-215	14,000	61.5	125	58	-	20,330	63.1	161	75	35	1.6
I-215 to Mapleton Ave.	22,880	63.8	182	84	-	25,330	64.3	195	90	-	0.5
Mapleton Ave. to Whitewood Rd./Menifee Rd.	20,350	63.2	163	76	-	22,070	63.5	172	80	-	0.3
Antelope Road											
Keller Rd. to Scott Rd.	20,660	65.6	236	110	51	21,250	65.7	241	112	52	0.1
Zeiders Road											
North of Keller Rd.	9,300	62.1	139	64	-	13,010	63.6	174	81	-	1.5
McElwain Road											
Keller Rd. to Project Access	880	51.9	-	-	-	11,180	62.9	157	73	-	11.0
Project Access to Linnel Ln.	880	51.8	-	-	-	3,790	58.1	75	35	-	6.3
Linnel Ln. to Clinton Keith Rd.	22,170	62.2	141	65	-	22,640	62.3	142	66	-	0.1

Notes: ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level.
Noise modeling is based on traffic data within *Murrieta Hills Specific Plan Amendment Traffic Impact Analysis*, prepared by MBI, November 2018. (EIR Appendix 9.8).

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 38. Table 15. (EIR Appendix 9.8). Noise modeling is based on traffic data within *Murrieta Hills Specific Plan Traffic Impact Analysis,* prepared by Michael Baker International (November 2018).

Typically, feasible mitigation measures for off-site roadway noise impacts includes repairing the roads with rubberized asphalt and developing sound walls or attenuation barriers to minimize noise impacts. However, this mitigation can only be imposed on on-site roadways since the Applicant would not have authorization or control to make off-site improvements. For the section of McElwain Road south of the

site, the designated land use is Office and Research Park[13], so use of rubberized asphalt or sound walls is not considered reasonable or feasible. The one affected residence would still be within conditionally acceptable noise levels.

On-Site Mobile Noise

Project implementation would result in the development of a maximum of 750 new homes and a maximum of 18.14 acres of community commercial use, which would be exposed to elevated noise levels from traffic noise along the I-215 freeway. The FHWA Traffic Noise Model version 2.5 (TNM 2.5) was used to evaluate the noise impacts from traffic along I-215 to the proposed on-site uses. Noise from typical daily traffic along I-215 was modeled at a total of 46 receiver locations on the Project site. The TNM 2.5 noise modeling is based on the site plan and tentative tract map for the Project, as well as the existing acoustical conditions in the surrounding area (i.e., existing berms, buildings, topography, etc.).

The normally acceptable dBA CNEL/L_{dn} noise standards for single-family and multi-family residential uses are 60 dBA, and 65 dBA, respectively as shown in Table 4.11-5, *Land Use Compatibility for Community Noise Environments*. Table 4.11-14, *Traffic Noise Modeling Results*, indicates the results of the modeling at the proposed receptors along I-215. It should be noted that the traffic noise levels depicted in Table 4.11-14 differ from the measured levels depicted in Table 4.11-2 because they represent noise levels at different locations on the Project site and are also reported in different noise metrics (e.g., noise measurements are the L_{eq} values and traffic noise are reported in CNEL).

With Project implementation, the dBA CNEL/L_{dn} noise standard for single-family residential uses is exceeded at the single-family lots facing the freeway in PA 2 Therefore, implementation of MM NOI-4 (see page 4.11-27) is required, which proposes construction of a 5-foot sound wall to reduce the sound level of the single-family lots located in PA 2 below the 60 dBA standard. Implementation of MM NOI-4 (see page 4.11-27) would reduce impacts to a less than significant level. Note that following completion of the Project acoustical assessment in Appendix 9.8, the Project Applicant modified the site design to exclude residential uses within 500 feet of I-215, which avoids potential freeway-related noise impacts to multi-family homes in PA 8.

Due to the varying topography on the Project site and receptor-to-roadway (I-215) distances, the single-family residential receptors located in PA 1 and PA 3 would not be exposed to traffic noise levels exceeding the City's land use compatibility standards. A noise barrier analysis was only applicable for the receptors in PA 2 where I-215 traffic noise levels would exceed the normally acceptable dBA CNEL/L_{dn} noise standards for single-family residential uses (60 dBA).

Table 4.11-14 below presents the results of the traffic noise modeling for the I-215 traffic noise impacts to 46 receivers within the Project planning areas. Exterior noise levels were modeled at each receiver. Modeling exterior levels provides the noise level that would be perceived from outside of each residence, such as in the yard or driveway, or in the case of PA 2, in the open space park. Receivers in planning areas 1, 2, 3, and 8 were modeled due to their close proximity to I-215. In residential planning areas, first and second row receivers were modeled. First row receivers are the homes closest to I-215, and second row receivers are homes behind the first row, or second closest to I-215. The exterior noise level in dBA CNEL/L_{dn} is provided for conditions before and after mitigation.

[13] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 3 – Land Use Element, Exhibit 3-5: General Plan 2035 Land Use Policy Map*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/729/03---Land-Use-Element-PDF. Accessed July 25, 2019.

Table 4.11-14: Traffic Noise Modeling Results

Receiver #	Location Description	Exterior Noise Level (dBA CNEL/L_{dn}) [1, 2]	Exterior Noise Level After Mitigation (dBA CNEL/L_{dn}) [1, 2]
1	PA-1, Single-Family Lots (First Row)	56.8	-
2		56.8	-
3		56.8	-
4		56.0	-
5	PA-2, Public Park	56.4	-
6	PA-2, Single-Family Lots (First Row)	59.7	56.5
7		**60.3**	57.1
8		**60.0**	56.7
9		**60.6**	56.8
10		**60.2**	56.6
11	PA-3, Single-Family Lots (First Row)	55.6	-
12		54.4	-
13		52.7	-
14		56.5	-
15		55.0	-
16		54.0	-
17		53.5	-
18		51.8	-
19		52.8	-
20		54.3	-
21		52.3	-
22	PA-3, Single-Family Lots (Second Row)	51.1	-
23		50.2	-
24		51.6	-
25		53.4	
26		55.3	-
27		52.9	-
28		53.6	-
29		54.0	-
30		53.8	-
31		54.1	-
32		56.6	-
33	PA-1, Single-Family Lots (Second Row)	54.6	-
34		54.1	-
35		53.9	-
36-41	PA-8, Multi-Family (First Row)	68.9-73.8	*Project site has been redesigned to avoid residential development within 500 feet of I-215.*
42-46	PA-8, Multi-Family (Second Row)	53.8-59.0	*Project site has been redesigned to avoid residential development within 500 feet of I-215.*

Bold text indicates noise levels exceeding the City's noise limits without mitigation.

Notes:
1. Noise levels were modeled using FHWA TNM 2.5.
2. Refer to Draft EIR Appendix 9.8, Appendix B, *Modeling Data*, for detailed modeling outputs.
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 42. Table 18. (EIR Appendix 9.8).

According to the Murrieta Noise Compatibility Standards, new construction should only proceed in areas exposed to normally unacceptable noise levels if a detailed analysis of noise reduction requirements is completed and noise insulation features are included in the project design. Therefore, MM NOI-5 (see page 4.11-27) requires site-specific noise studies (based on specific site design and architectural plans) to verify that residences incorporate various architectural features to reduce noise is required. Note that, following completion of the Project noise study contained in Appendix 9.8, the Project Applicant modified the site design to prohibit residential uses within 500 feet of I-215, which substantially reduces freeway-related mobile noise impacts on the multi-family component of the Project.

Stationary Noise Impacts

Project implementation would introduce new noise sources from the newly constructed residential and commercial/retail uses. Although several noise sources would be introduced, many of them would operate for very brief time periods, such as delivery truck movements, trash compactors and parking lot sweepers. These types of sources usually do not operate concurrently in close proximity. Other noise sources, such as air conditioning equipment, loading dock activities, and parking lot noise, operate for comparatively longer periods of time. The projected noise levels presented below do not account for any noise attenuation due to walls, berms, intervening structures or topography.

RESIDENTIAL

In residential areas, typical noise sources include children playing, pet noise, amplified music, car repair, pool and spa equipment, air conditioning units, woodworking and similar hobby or home improvement activities. Noise from residential stationary sources would primarily occur during the CNEL "daytime" activity hours of 7:00 a.m. to 10:00 p.m. (see Table 4-11.1 above for a description of CNEL and associated hour designations). Furthermore, the residences would be required to comply with the noise standards set forth in the Murrieta GP and Murrieta MC.

MECHANICAL EQUIPMENT

The primary stationary noise source associated with the proposed commercial development would be heating, ventilation, and air conditioning (HVAC) units. HVAC units would be located throughout the commercial uses in PA 9. HVAC systems typically result in noise levels that average between 40 and 50 dBA Leq at 50 feet from the source. HVAC units would adjoin the commercial uses or be roof mounted. The nearest off-site sensitive receptors (residential uses) would be located approximately 1,500 feet northwest of the proposed commercial area. At this distance, noise levels from HVAC units would be a maximum of 20 dBA, which is below the City's 50 dBA daytime standard and 45 dBA nighttime standard for residential land uses. As the project would not place mechanical equipment associated with the Project near adjacent residential uses, noise from the HVAC units would not be perceptible from the adjacent residences on the eastern side of the Project site. Impacts from mechanical equipment would be less than significant.

Slow-Moving Trucks (Deliveries) and Loading Docks

Noise sources at loading docks for the commercial uses may include maneuvering and idling trucks, truck refrigeration units, forklifts, banging and clanging of equipment (i.e., hand carts and roll-up doors), noise from public address systems and voices of truck drivers and employees. The maximum noise levels of slow-moving heavy and small trucks range between 70 and 73 dBA at 50 feet. The final location of loading

docks for the commercial land uses have not been determined, as specific site design would vary on the final end-users and configurations may vary. To mitigate noise levels resulting from activities at loading docks, loading docks adjacent to residential uses shall be designed with a depressed (i.e., below-grade) loading dock area; an internal bay; or a wall to break the line of sight between residential land uses and other noise-sensitive uses, and loading operations.

MM NOI-5 (see page 4.11-27) requires the preparation of an acoustical analysis at the time of Project-specific site design to demonstrate that loading dock operation in the commercial/mixed use PAs would not result in noise levels that exceed the City's noise standard at nearby residences or other sensitive uses. It should be noted that *Murrieta MC Section 16.30.130(B) – Loading and Unloading Operations* prohibits loading, unloading, opening, closing or other handling of boxes. crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 p.m. and 6:00 a.m. Implementation of MM NOI-5 (see page 4.11-27) will ensure the Project's compliance with this code as it pertains to dock operations. Therefore, it is anticipated that with the implementation of MM NOI-5 (see page 4.11-27), impacts will be less than significant.

PARKING AREAS

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. Parking lot noise are instantaneous noise levels compared to noise standards in the CNEL scale, which are averaged over time. As a result, actual noise levels over time resulting from parking lot activities would be far lower. However, the instantaneous maximum sound levels generated by a car door slamming, engine starting up and cars driving by may be an annoyance to adjacent noise-sensitive receptors. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 4.11-15, *Typical Noise Levels Generated by Parking Lots*. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech to 50 dBA at 50 feet for very loud speech.

Table 4.11-15: Typical Noise Levels Generated by Parking Lots

Noise Source	Maximum Noise Levels at 50 Feet from Source
Car door slamming	63 dBA Leq
Car starting	60 dBA Leq
Car idling	61 dBA Leq
Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 46. Table 19. (EIR Appendix 9.8).	

Traffic noise impacts associated with parking lots would be considered minimal since the parking lots will be associated with mixed-use (PA 8) and commercial use (PA 9), which will be located along the I-215 freeway. Parking lot noise will be masked by background noise from traffic along I-215 (the ambient noise in this area is 76.7 dBA; refer to Table 4.11-2). Therefore, parking lot noises associated with PA 8 and PA 9 would not result in substantially greater noise levels than current noise levels at the Project site. Noise associated with parking lot activities is not anticipated to exceed the City's Noise Standards or the California Land Use Compatibility Standards during operation. Therefore, noise impacts from parking lots would be less than significant.

MITIGATION MEASURES

MM NOI-1: For construction activities (other than blasting) within 200 feet of sensitive receptors, the construction contractor shall implement the following measures during construction:

- Construction activities that could generate high noise levels at residences shall be scheduled during times that would have the least impact on sensitive receptor locations. This could include restricting construction activities in the areas of potential impact to middle hours of the work day, such as from 10:00 a.m. to 4:00 p.m. Monday to Friday when residents would be least likely to be home.
- Stationary construction noise sources, such as temporary generators, shall be located as far from nearby noise-sensitive receptors as possible.
- Trucks shall be prohibited from idling along streets serving the construction site where noise-sensitive residences are located. The construction contractor will ensure idling limits are adhered to.
- The construction contractor shall prohibit the use of heavy-duty graders or dozers (i.e., equipment that generates noise levels greater than 81 dBA L_{max} at 50 feet) within 200 feet sensitive receptors along the McElwain Road extension. Excavators, loaders, backhoes, and paving equipment within 200 feet are acceptable. Alternatively, the construction contractor will install temporary noise barriers that would completely shield the equipment from sensitive receptors within 200 feet. The temporary barriers shall meet the following standards:
  - The noise barriers shall be a minimum height of 12 feet high. The barriers shall be solid from the ground to the top of the barrier and have a weight of at least 2.5 pounds per square foot, which is equivalent to ¾ inch thick plywood.
  - The barrier design shall optimize the following requirements: (1) the barrier shall be located to maximize the interruption of line of sight between the equipment and the receptor; (2) the length and of the barrier shall be selected to block the line of sight between the construction area and the receptors; (3) the barrier shall be located as close as feasible to the receptor or as close as feasible to the construction area.

MM NOI-2: **Blasting Plan**. Prior to issuance of a grading permit, the applicant shall submit a Blasting Plan for review and approval by the City of Murrieta. The Blasting Plan shall be prepared by a qualified blast contractor, who shall be employed to ensure that charge size, shot timing, and cover material are sufficient to ensure that blasting noise at nearby sensitive receptors and the nearby open space do not exceed applicable thresholds. The blast contractor shall perform test shots in order to determine the drill hole depth, charge size, and depth of burial (stemming) for the charges prior to finalizing the blasting program because of the proximity to sensitive receptors. After construction has concluded, the blast contractor shall prepare a final letter report

that details how the Blasting Plan was implemented and compliance with noise standards were met.

The Project Applicant shall extend the offer to the occupant(s) of the residence at 27740 Linnel Lane and 35256 McElwain Road for temporary relocation during blasting along McElwain Road should blasting be predicted to exceed 65 dBA interior noise levels. The relocation assistance shall only be for temporary housing and reasonable expenses during Project blasting along McElwain Road extension.

MM NOI-3: Construction-related noise shall be prohibited within 200 feet of the MSHCP Conservation Area during the typical breeding season of February 15 to August 31 (note that this period may be extended to start January 1 if raptor surveys (required in MM BIO-3, see Section 4.3, page 4.3-46) determine that active nests are found. Construction activity within and adjacent to any occupied sensitive habitat areas must not exceed 75 dBA L_{eq}, or ambient noise levels if higher than 75 dBA L_{eq}, during the breeding season. Prior to issuance of land development permits, including clearing or grubbing and grading and/or construction permits for areas within or adjacent to the MSHCP Conservation Area, the applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee), an acoustical analysis to demonstrate that the 75 dBA L_{eq} noise level is not exceeded at the location of any occupied sensitive habitat areas as determined based on the results the required biological pre-construction surveys. The acoustical analysis shall describe the methods by which construction noise shall not exceed 75 dBA L_{eq}. Noise abatement methods may include, but are not limited to, reoperation of specific construction activities, installation of noise abatement at the source, and/or installation of noise abatement at the receiving areas.

MM NOI-4: Prior to the issuance of building permits for the single-family residences in PA 2, the Project Applicant shall require the design and construction of, to the satisfaction of the City of Murrieta Building Official, a minimum 5-foot high sound wall be constructed in PA 2. The wall height shall be measured from the graded pad elevation of the residential lot. Acceptable materials for the construction of the barriers shall have a density of 3.5 pounds per square foot of surface area and maybe composed of the following: masonry block, stucco veneer over wood framing (or foam core), glass, Plexiglass, or Lexan 9¼ inch thick). The barrier may also be constructed out of a combination of the above listed materials.

MM NOI-5: Prior to the issuance of the first Building Permit for PA 9, a noise assessment shall be prepared. The noise assessment shall ensure that commercial property loading docks are shielded from existing and proposed residences so that the City's noise standards are not exceeded. The noise assessment shall identify any noise control measures (e.g., barriers, shielding, etc.) necessary to comply with the City's noise regulations. Individual future commercial users shall implement all noise control measures identified in the assessment.

MM NOI-6: The Project Applicant or its designee shall submit a weekly report to the City that demonstrates compliance with MM NOI-1 through MM NOI-5 and MM NOI-7.

Impact 4.11-2: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

Level of Significance: Significant and Unavoidable Impact

CONSTRUCTION

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.20 inch/second [in/sec]) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. The vibration produced by construction equipment, is illustrated in Table 4.11-16, *Typical Vibration Levels for Construction Equipment.*

Table 4.11-16: Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)[2]	Approximate peak particle velocity at 50 feet (inches/second)[2]	Approximate peak particle velocity at 100 feet (inches/second)[2]	Approximate peak particle velocity at 150 feet (inches/second)[2]
Large bulldozer	0.089	0.031	0.011	0.002
Loaded trucks	0.076	0.027	0.010	0.002
Small bulldozer	0.003	0.001	0.000	0.000
Jackhammer	0.035	0.012	0.004	0.001

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 50. Table 20. (EIR Appendix 9.8).
Notes:
Calculated using the following formula:
$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$
where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance.
PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines.*
D = the distance from the equipment to the receiver.

Groundborne vibration decreases rapidly with distance. As indicated in Table 4.11-16, based on the FTA data, vibration velocities from typical heavy construction equipment operation that would be used during Project construction range from 0.003 to 0.089 in/sec peak particle velocity (PPV) at 25 feet from the

source of activity. The closest sensitive receptors (residential uses) are located approximately 50 feet to the north of the property line of the Project site. At this distance, vibration velocities from construction equipment would range from 0.001 to 0.031 in/sec PPV, which would exceed the Murrieta MC Section 16.30.130, Subsection K's 0.01 in/sec PPV vibration perception threshold.

Implementation of MM NOI-7 (see page 4.11-31) will therefore be required to minimize temporary groundborne vibration impacts from construction activities at adjacent sensitive residential uses. MM NOI-7 (see page 4.11-31) requires written notification to all property owners within 200 feet of construction activities at least three weeks prior to the start of construction activities informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification must include information warning about the potential for impacts related to vibration-sensitive equipment.

However, even with implementation of MM NOI-7 (see page 4.11-31), temporary construction groundborne vibration levels exceed the City's 0.01 in/sec PPV perception threshold. Therefore, impacts would be significant and unavoidable.

It is noted, that while the City's 0.01 in/sec PPV perception threshold would be exceeded at the nearest sensitive receptors during construction activities, the Project's construction vibration levels (0.001 to 0.031 in/sec PPV at 50 feet) would be below the FTA's 0.20 in/sec PPV architectural damage threshold. However, the City's thresholds take precedence over FTA's thresholds, and the impact remains significant and unavoidable.

Off-Site Construction Groundborne Noise and Vibration Impacts

MCELWAIN ROAD EXTENSION

The McElwain Road extension will occur in the southeast portion of the Project site. McElwain Road will travel through the Project boundary and connect to Linnel Lane in the City of Murrieta. Several residential areas are located approximately 1,200 to 1,600 feet from the McElwain Road construction area. At this distance, impacts related to groundborne vibration decreases dramatically. However, one residential dwelling is located ±85 feet east-southeast of the McElwain Road extension area and a second is located ±300 feet west-northwest of the extension. MM NOI-2 (see page 4.11-26) includes a provision to provide temporary relocation for the occupants during blasting. However, because it is not known whether the occupants would agree to temporary relocation, off-site construction groundborne vibration impacts related to the McElwain Road extension are significant and unavoidable.

ZEIDERS ROAD IMPROVEMENTS

As described earlier, several infrastructure improvements would occur off-site, outside the Specific Plan area. For sewer service, improvements are proposed beneath Keller Road and Zeiders Road. Note that the subsurface sewer system is under the jurisdiction of the EMWD while both Keller Road (north of its centerline) and Zeiders Road are within the jurisdiction of City of Menifee and Keller Road (south of its centerline) is within the jurisdiction of the City of Murrieta. Construction of underground utilities would involve heavy-duty construction equipment, including but not limited to loaded trucks and jackhammers. Single-family residences located along Zeiders Road may be exposed to high levels of groundborne vibration impacts. The closest single-family residence is located approximately 50 feet from Zeiders Road. At this distance, jackhammer and loaded truck vibration levels are 0.027 and 0.012 in/sec PPV

respectively, therefore exceeding the City 0.01 in/sec PPV perception threshold established in Murrieta Noise MC Section 16.30.130(K). Although implementation of MM NOI-7 (see page 4.11-31) would require notification of information warning about the potential for impacts related to vibration-sensitive equipment, the mitigation measure does not prevent or reduce groundborne vibration impacts. Impacts are still considered significant and unavoidable even with implementation of MM NOI-7 (see page 4.11-31).

Blasting During Construction

Controlled blasting will be required in areas where conventional excavation process using heavy earth moving equipment is not feasible. Specifically, blasting will be required in PA 3, PA 5, and PA 7 where the most resistant rock is located.[14] Additionally, construction of McElwain Roadway will require excavation of cut slopes in granodiorite deposits, which may require localized heavy ripping or local blasting.[15]

Blasting typically includes drilling a hole, filling the hole with explosive material, capping the hole, and detonating the material. Blasting is a short-term event, typically lasting no more than several seconds. According to findings by the FTA, blasting typically results in a vibration velocity of approximately 100 velocity decibels (VdB) at 50 feet from the blast. This is equivalent to approximately 0.4 in/sec PPV. The nearest existing sensitive receptor to where blasting would occur is the residence at 35256 McElwain Road, which is located approximately 85 feet from the proposed McElwain Road extension. Additional existing vibration-sensitive land uses to where blasting would occur are single-family residences north of Keller Road, the Loma Linda University Medical Center - Murrieta east of I-215, and residential communities located south of the Project site between 1,200 and 1,600 feet from the McElwain Road extension. The single-family residences north of Keller Road are located approximately 2,600 feet from the nearest blasting area within PA 5, and the Loma Linda University Medical Center - Murrieta is located approximately 2,000 feet from the nearest blasting area within PA 3. In addition, single-family residences within the Greer Ranch community are located approximately 1,400 feet south of blasting activities at PA 7. At these distances, vibration levels from blasting will be approximately 0.181 in/sec PPV at the residence closest to the McElwain Road extension, 0.001 in/sec PPV at the residences north of Keller Road, 0.002 in/sec PPV at the Loma Linda Medical Center - Murrieta, and 0.003 in/sec PPV at the Greer Ranch residential community residences. As such, vibration levels from blasting will not exceed the City's vibration perception threshold of 0.01 in/sec PPV or the FTA's 0.20 in/sec PPV threshold at the residences and/or Loma Linda University Medical Center - Murrieta.

Furthermore, implementation of MM NOI-7 (see page 4.11-31) will reduce blasting impacts at sensitive receptors during Project construction activities. MM NOI-7 (see page 4.11-31) requires written notification to all property owners within 200 feet of construction activities, including blasting, at least three weeks prior to the start of blasting activities informing them of the estimated start date and duration of daytime vibration-generating construction (blasting) activities. This notification would include information warning about the potential for impacts related to vibration-sensitive equipment.

As discussed above in Impact 4.11-1, off-site blasting-related noise for the single-family residences adjacent and in close proximity to the McElwain Road extension would experience significant temporary

[14] Leighton and Associates, Inc. (2014). *Update Geotechnical Report for Tentative Tract Map No. 35853, Murrieta Hills Specific Plan, Southwest of Keller Road and I-215, Murrieta California*. (EIR Appendix 9.5.1).

[15] Leighton and Associates, Inc. (2014). *Geotechnical/Geologic Review Portion of Tentative Tract Map No. 35853 Murrieta Hills Specific Plan, McElwain Roadway City of Murrieta, California*. (EIR Appendix 9.5.2).

blasting-related noise and groundborne vibration and noise. This impact will be temporary, limited to brief periods of blasting, and mitigated to the extent feasible through MM NOI-2 (Blasting Plan, see page 4.11-26) and MM NOI-7 (notification, see page 4.11-31). MM NOI-2 (see page 4.11-26) provides for temporary housing during blasting for the occupant(s) of these parcels and MM NOI-7 (see page 4.11-31) provides for written notification of construction activities to property owners. However, while blasting activities will not exceed the City's vibration perception threshold of 0.01 in/sec PPV for the residences north of Keller Road; the Loma Linda University Medical Center – Murrieta; or the single-family residences within the Greer Ranch community, the blasting-related impacts to the single-family residences along the McElwain Road extension outside of the Project site would exceed 0.01 in/sec PPV. While MM NOI-2 (see page 4.11-26) provides for temporary housing for the occupant(s), it is not known whether the occupant(s) would agree to temporary relocation. Even with implementation of MM NOI-2 (see page 4.11-26) and NOI-7 (see page 4.11-31), impacts would remain significant and unavoidable.

OPERATIONS

During Project operation, residential and commercial development would not generate ground-borne vibration that could be felt at surrounding uses. The proposed Project does not include any industrial activities such as railroads or substantial heavy truck operations that would generate ground-borne vibration. Therefore, Project operations would not result in vibration impacts at surrounding uses. No impact would occur in this regard.

MITIGATION MEASURES

MM NOI-7: The construction contractor shall provide written notification to all property owners within 200 feet of construction activities, including blasting, at least three weeks prior to the start of construction activities informing them of the estimated start date, duration of daytime vibration-generating construction activities, and type and patterns of audible warning and all-clear signals to be used before and after blasting. The City shall provide a phone number for the property owners to call if they have questions or concerns. The notification will also include a discussion of how the blasting will affect traffic, access, and other appropriate issues that may be relevant to the property owners.

Impact 4.11-3: For a project located within the vicinity of a private airstrip or 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?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The proposed Project is not located within an airport land use plan. There is no public airport, public-use airport, or private airstrip located within two miles of the Project site. French Valley Airport is located approximately 3.5 miles southeast of the Project off of Winchester Road (SR-79). A heliport for the Loma Linda University Medical Center – Murrieta is located east of the I-215 Freeway; however, no development would occur in this area. The closest portion of the proposed Project would be approximately 2,000 feet west of the Loma Linda University Medical Center – Murrieta. The Project would not expose people

residing or working in the area to excessive noise levels. Therefore, impacts in this regard would be less than significant.

MITIGATION MEASURES

No mitigation is required.

4.11.6 CUMULATIVE IMPACTS

For purposes of noise resource impact analysis, cumulative impacts are considered for cumulative development according to the related projects; see Table 4-1, *Cumulative Projects List*. Construction-related noise is a localized activity and would only affect land uses that are immediately adjacent to the construction areas due to the fact that noise dissipates as it travels away from its source.

Cumulative Construction Noise

The Project's construction activities would result in a substantial temporary increase in ambient noise levels and groundborne vibration impacts. There would be periodic or temporary unavoidable significant noise impacts that would cease upon completion of construction activities. The Project will result in significant unavoidable construction noise impacts if other developments/projects proximate to the Project site occur concurrent with the Project. Other developments/projects include the I-215/Keller Road Interchange, Commerce Pointe (Menifee), Bundy Canyon Development project (Menifee), and future phases of the Kaiser Permanente campus (Murrieta).

Cumulative Operational Noise

Cumulative noise impacts describe how much noise levels are projected to increase over existing conditions with the development of the proposed Project and other foreseeable projects. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to buildout of the proposed Project and other projects in the vicinity. Cumulative increases in traffic noise levels were estimated by comparing the Existing Plus Project and Opening Year scenarios to existing conditions. The traffic analysis considers cumulative traffic from future growth assumed in the traffic study, as well as cumulative projects identified by the cities of Murrieta, Menifee, and Wildomar.

A project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The combined effect compares the "cumulative with project" condition to "existing" conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by projects in the cumulative project list. The following criteria have been utilized to evaluate the combined effect of the cumulative noise increase.

Combined Effect: The cumulative impacts with project noise level ("Future with Project") would cause a significant cumulative impact if a 3.0 dBA increase over existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive receptor. Although there may be a significant noise increase due to the proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed Project. The following criteria have been utilized to evaluate the incremental effect of the cumulative noise increase.

Incremental Effects: The "Future with Project" scenario causes a 1.0 dBA increase in noise over the "Future Without Project" noise level.

A significant impact would result only if both the combined and incremental effects criterion above have been exceeded. Noise, by definition, is a localized phenomenon and reduces as distance from the source increases. As a result of this, only the Project and growth anticipated to occur in the Project site's general vicinity would contribute to cumulative noise impacts.

Traffic noise effects along roadway segments in the Project vicinity for "Existing," "Future Without Project," and "Future with Project" conditions, including incremental and net cumulative impacts, are shown in Table 4.11-17, *Cumulative Noise Impacts*.

Table 4.11-17: Cumulative Noise Impacts

Roadway Segment	Existing	Future Without Project	Future with Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact? (Combined Effect is ≥ 3 dBA AND Incremental Effects is ≥1 dBA)
	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	Difference In dBA Between Existing and Future with Project	Difference In dBA Between Future Without Project and Future with Project	
Keller Road						
Howard Way to Zeiders Rd.	44.6	57.8	58.0	13.4	0.2	*No*
Zeiders Rd./McElwain Rd. to I-215/Keller Road Interchange Southbound Ramps	50.4	61.5	63.1	12.7	1.6	*Yes*
I-215/Keller Road Interchange Northbound Ramps to Mapleton Ave.	24.9	63.8	64.3	39.4	0.5	*No*
Mapleton Ave. to Whitewood Rd./Menifee Rd.	54.6	63.2	63.5	8.9	0.3	*No*
Antelope Road/Mapleton Avenue						
Keller Rd. to Mapleton Ave.	*61.4*	Street Vacated	Street Vacated	NA	NA	*No*
Keller Rd. to Scott Rd.	63.3	65.6	65.7	2.4	0.1	*No*
Zeiders Road						
Keller Rd. to Scott Rd.	52.0	62.1	63.6	11.6	1.5	*Yes*
McElwain Road						
Keller Rd. to Project Access	Does Not Exist	51.9	62.9	NA	11	*Yes*
Project Access to Linnel Ln.	Does Not Exist	51.8	58.1	NA	6.3	*No*
Linnel Ln. to Clinton Keith Rd.	60.5	62.2	62.3	1.8	0.1	*No*

Notes: ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level

Source: MBI. (2018). *Acoustical Assessment for the Murrieta Hills Specific Plan Amendment*. Page 40. Table 17. (EIR Appendix 9.8).
Note: Noise modeling is based on traffic data within *Murrieta Hills Specific Plan Traffic Impact Analysis,* prepared by Michael Baker International (November 2018). Available in EIR Appendix 9.9.1.

As indicated in Table 4.11-17, the Incremental Effects criterion of 1.0 dBA is exceeded along Keller Road (from Zeiders Road/McElwain Road to I-215/Keller Road Interchange Southbound Ramp), Zeiders Road (from Keller Road to Scott Road), and McElwain Road (from Keller Road to Linnel Lane). In addition, the 3.0 dBA Combined Effects criterion is exceeded along Keller Road (from Howard Way to Whitewood Road/Menifee Road) and Zeiders Road (from Keller Road to Scott Road). In order for increases in cumulative traffic noise levels to be significant, the respective noise levels must also exceed the "normally acceptable" CNEL standard of 60 dBA for residential properties (refer to Table 4.11-5). Thus, the roadway segments would experience a significant cumulative noise increase on Keller Road, Zeiders Road, and McElwain Road. (See Exhibit 4.11-2, *Roadway Segment Locations* for a map of the roadway segments). Therefore, the Project, in combination with cumulative background traffic noise levels, would result in a cumulatively considerable noise impact.

Vibration

Vibration impacts during construction of the Project would be localized and would occur intermittently for varying periods of time throughout the construction period. Short-term cumulative impacts related to vibration levels could occur if construction associated with the Project as well as surrounding current and future development were to occur simultaneously. Noise and vibration associated with construction of the Project, in combination with other projects proximate to the Project site boundaries, could adversely impact sensitive receptors in the vicinity of the Project site with a cumulative noise level greater than the noise generated solely at the Project site.

The cumulative vibration analysis is conducted in a two-step process. First, the combined effects from both the Project and other projects are compared. Second, for combined effects that are determined to be cumulatively significant, the Project's incremental effects are then analyzed.

Potential cumulative projects include the I-215/Keller Road Interchange, Commerce Pointe (Menifee), Bundy Canyon Development project (Menifee), and future phases of the Kaiser Permanente campus (Murrieta). Based on the proposed schedule for Kaiser Permanente campus project (Phase 1 is completed, and the full hospital campus anticipated to be completed by 2023[16]), construction of the Project could coincide with construction of the buildout of the Kaiser Permanente campus. Phase 1 of Menifee Commerce Pointe on Zeiders Road was recently completed. Construction of Phase 2 and future expansion may overlap with Project implementation. Phases are located approximately 2,650 feet north of the Project on the east side of Zeiders Road and the future expansion is located approximately 1,350 feet north of the Project. The Bundy Canyon Development project is located approximately 1,300 feet north of the Project, near the intersection of Keller Road and Pinewood Lane.[17] This development may also coincide with construction of the MHSPA Project. Future I-215/Keller Road interchange construction may also overlap with future phases of Project construction. Short-term construction vibration impacts from the Project would exceed the City's threshold and therefore be significant and unavoidable. Although the City's 0.01 in/sec PPV perception threshold would be exceeded at the nearest sensitive receptors during construction activities, the Project's construction vibration levels (0.001 to 0.031 in/sec PPV at 50 feet) would be below the FTA's 0.20 in/sec PPV architectural damage threshold. Implementation of MM NOI-7 (see page 4.11-31) would be required to minimize temporary groundborne vibration impacts from

[16] ECONSolutions by Hdl (2019). *City of Murrieta Hotel Market Study*. Page 7. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/DocumentCenter/View/1851/City-of-Murrieta-Hotel-Market-Study-2019-PDF?bidId=. Accessed July 26, 2019.

[17] City of Menifee. (2019). *City of Menifee Land Development/CIP Projects*. Retrieved from City of Menifee Website: http://cityofmenifee.us/DocumentCenter/View/2080/Menifee-Land-Development--CIP-Map?bidId=. Accessed July 26, 2019.

construction activities at adjacent sensitive residential uses to the furthest extent feasible. Nevertheless, the combined effects from both the proposed Project and other projects are cumulatively considerable. Although construction impacts are temporary in nature, cumulative impacts related to groundborne vibration are significant and unavoidable with mitigation.

4.11.7 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the Project, significant unavoidable impacts would occur in the following areas despite the implementation of mitigation measures:

- **Construction Blasting.** Despite implementation of MM NOI-1 (see page 4.11-26) through NOI-3 (see page 4.11-27) and NOI-7 (see page 4.11-31), noise levels from blasting activities would still impact nearby residential communities and MSHCP conversation areas. Therefore, construction blasting would have a significant and unavoidable impact in the surrounding areas.
- **Off-site Operational Noise**. Project implementation would result in increased traffic and roadway noise. Specifically, noise levels would result in a maximum increase of 11.0 dBA along McElwain Road (Keller Road to Project Access) as a result of the Project. Mitigation was determined to be infeasible to reduce mobile traffic noise to "acceptable" or "conditionally acceptable" levels in accordance with the Land Use Compatibility standards.
- **Construction Groundborne Vibration Impacts**. Groundborne vibration impacts from Project construction would meet the FTA's 0.20 in/sec PPV architectural damage threshold. However, the City's more stringent vibration threshold of 0.01 in/sec PPV vibration perception threshold outlined in Murrieta MC Section 16.30.130.K would be exceeded. Even with implementation of MM NOI-7, impacts would still be significant. Furthermore, off-site construction vibration levels would impact residential land uses on Zeiders Road between Keller Road and Scott Road. Impacts associated with groundborne vibration would be significant and unavoidable throughout the construction period.
- **Cumulative Noise and Vibration Impacts.** The Project's cumulative contribution to construction noise and vibration (blasting) and off-site traffic noise would be significant and unavoidable despite implementation of MM NOI-1 through NOI-7 (see pages 4.1-26 through -27 and page -31).

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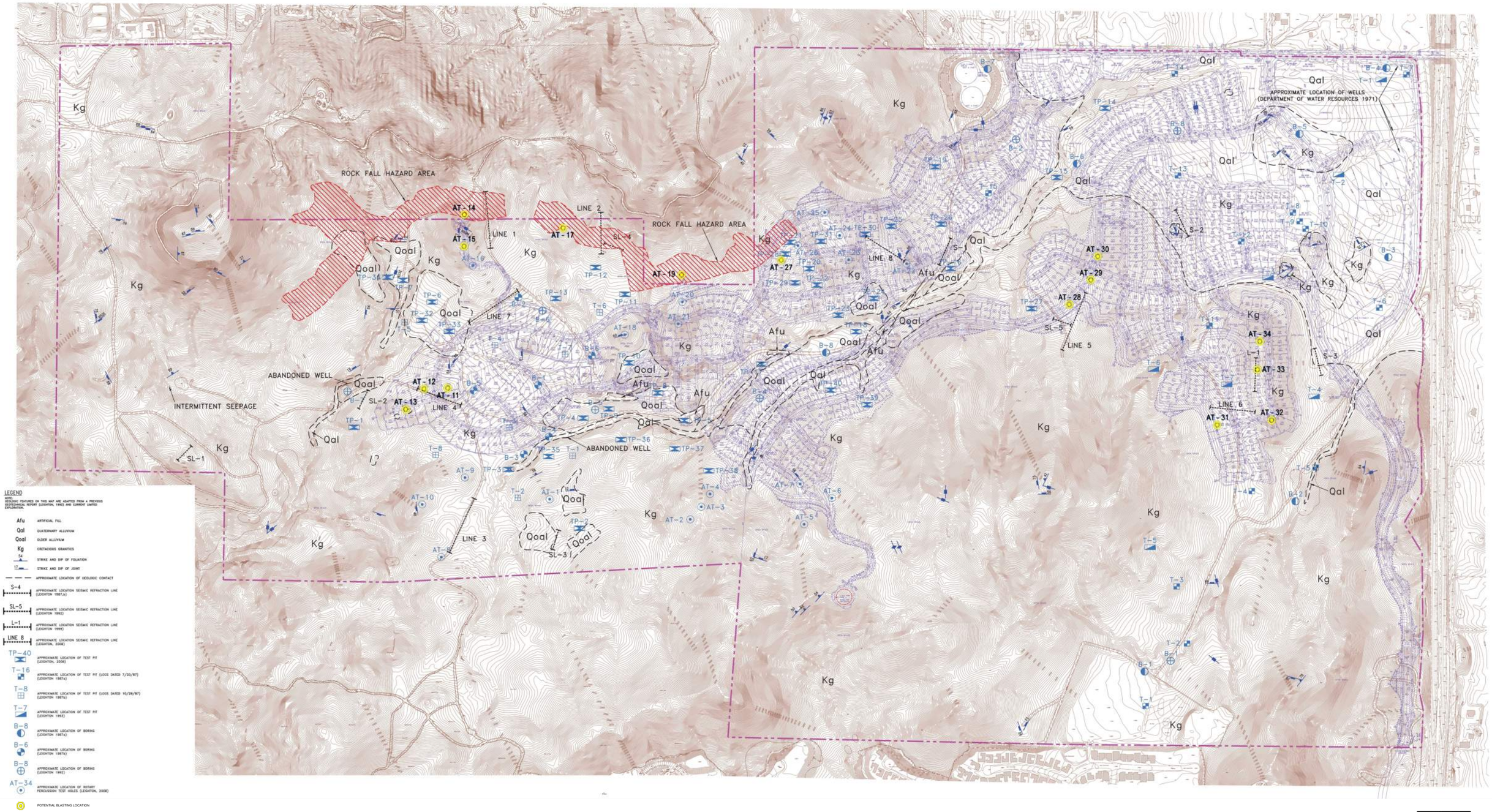
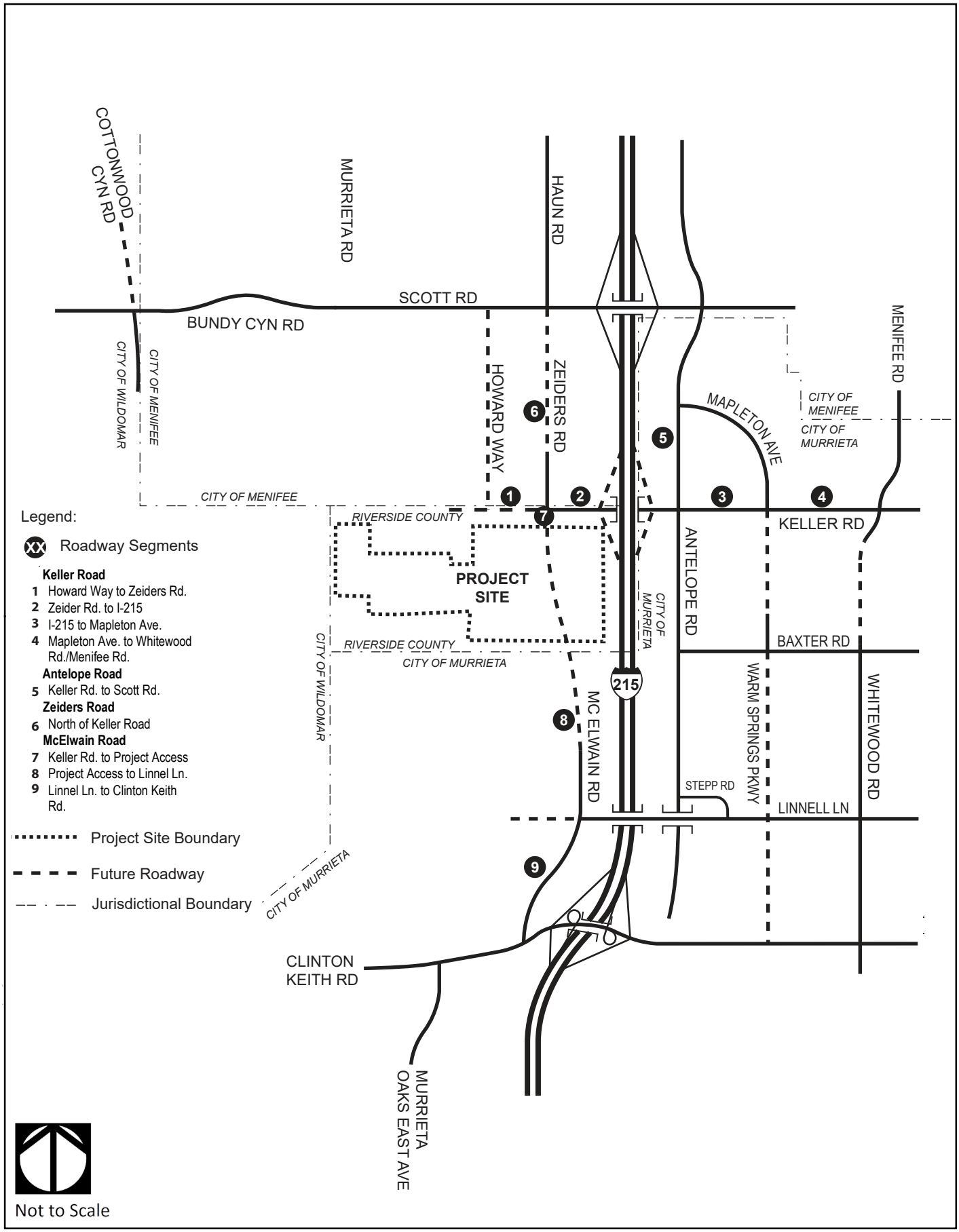


Source: Update Geotechnical Report, Plate 1

Not to Scale

EXHIBIT 4.11-1: Potential Blasting Locations
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: Acoustical Assessment, Exhibit 6

EXHIBIT 4.11-2: Roadway Segment Locations
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.12 PUBLIC SERVICES AND RECREATION

4.12.1 INTRODUCTION

This section examines potential Murrieta Hills Specific Plan Amendment (MHSPA or Project) impacts on public services and recreation amenities by identifying anticipated demands and evaluating the relationship to both existing and planned public services facilities and availability. For purposes of this environmental impact report (EIR), the general term "public services" includes police protection, schools, parks, and library services.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section:

- Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    - Fire protection? (addressed separately, sees EIR Section 4.16, *Wildfire Hazards*)
    - Police protection?
    - Schools?
    - Parks?
    - Other public facilities?
- Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Analysis of area cumulative impacts is also included in the discussion portions of this section. As will be demonstrated in Section 4.12.5, *Impacts and Mitigation Measures* below, Project impacts are considered less than significant for each of the inquiries.

The environmental setting discussion is based largely on review of relevant documents and information including the *City of Murrieta General Plan 2035* (Murrieta GP) and Municipal Code (MC); the County of Riverside GP and Zoning Ordinance No. 348; review of aerial photographs and field observations of the area conducted by Kimley-Horn staff in January 2019; and review of the Draft MHSPA along with Project renderings and maps. Other information in this section, including the regulatory framework, is derived from the various planning documents including the Project Description, the *Murrieta Hills Specific Plan Amendment*, County of Riverside GP, *County of Riverside Zoning Ordinance No. 348*, City of Menifee GP EIR, City of Murrieta GP, City of Murrieta MC, City of Menifee GP, City of Menifee MC, and pertinent State of California Building Codes.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.12.2 ENVIRONMENTAL SETTING

The Project area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle (ORV) activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

CITY OF MURRIETA PUBLIC SERVICES

Police Protection

The Riverside County Sheriff's Department currently provides services to the Project area. Upon annexation, services will be provided by the Murrieta Police Department. Existing police facilities are located at 2 Town Square in Murrieta. Staff levels consist of a total of 138 full-time personnel including one chief of police, two captains, four lieutenants, 12 sergeants, and 55 police officers.[2]

Schools

The Project site is within the Menifee Union School District (MUSD) and Perris Union High School District (PUHSD). Menifee State Preschool is located at 26350 La Piedra Road in Menifee, approximately six miles to the north; Oak Meadows Elementary School is at 28600 Poinsettia Street in Murrieta, approximately

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Page 2-6. Murrieta, CA: City of Murrieta.

one mile to the east; Menifee Valley Middle School is at 26255 Garbani Road in Menifee, approximately five miles to the north; and Paloma Valley High School is at 31375 Bradley Road in Menifee, less than five miles to the north.[3]

Parks/Trails

There are no official parks or other recreational facilities within the Project area. Unauthorized hiking, biking, and ORV activities regularly take place on the Project site. Existing City of Murrieta parks located within one mile of the Project site includes Mapleton Park and Trail, Springbrook Park, Alderwood Park. There are no City of Wildomar or Menifee parks or trails within one mile of the Project site. It should be noted that the Riverside County General Plan (Sun City/Menifee Valley Area Plan, Figure 7, Trails and Bikeway System), indicates that a Community Trail is planned on Keller Road and adjacent to the Paloma Wash. Should this trail be developed, it would be developed on the north side of Keller Road which is not within the Project site. All associated roadway improvements that may impact this future trail would be coordinated through the City of Menifee.

Public Libraries

Existing public libraries within the vicinity of the MHSPA area include the Paloma Valley Public Library at 31375 Bradley Road in Menifee; Mission Trails Public Library at 34303 Mission Trails in Wildomar; and Murrieta Public Library at 8 Town Square in Murrieta.[4]

Fire Protection

Refer to Sections 4.8, *Hazards and Hazardous Materials* and 4.16, *Wildfire Hazards*, regarding the implementation of fire protection in accordance to the MHSPA and the Murrieta GP. In addition, refer to Appendix 9.11.1 for the Project's *Fire Protection Technical Report*.

4.12.3 REGULATORY FRAMEWORK

STATE

California Penal Code

All law enforcement agencies within the State of California are organized and operated in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for peace officers. Under state law, all sworn municipal and county officers are state peace officers.

Assembly Bill 2926, California Government Code Section 65995, and Education Code

California has traditionally been responsible for the funding of local public schools. To assist in providing facilities to serve students generated by new development projects, the State passed Assembly Bill 2926 (AB 2926) in 1986. This bill allowed school districts to collect impact fees from developers of new residential and commercial/industrial building space. Development impact fees were also referenced in the 1987 Leroy Greene Lease-Purchase Act and the Leroy F. Greene School Facilities Act of 1998, which

[3] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Page 2-6. Murrieta, CA: City of Murrieta.
[4] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Page 2-6. Murrieta, CA: City of Murrieta.

required school districts to contribute a matching share of project costs for construction, modernization, or reconstruction and create a new state program requiring the board to provide funding per pupil.

Government Code §65995 authorizes school districts to collect impact fees from developers of new residential and commercial/industrial building space. Senate Bill 50 (SB 50) amended Government Code §65995 in 1998. Under the provisions of SB 50, schools can collect fees to offset costs associated with increasing school capacity resulting from development.

The provisions of SB 50 prohibit local agencies from denying either legislative or adjudicative land use approvals on the basis that school facilities are inadequate, and reinstate the school facility fee cap for legislative actions (e.g., general plan amendments, specific plan adoption, zoning plan amendments) as was allowed under the *Mira*,[5] *Hart*,[6] and *Murrieta*[7] court cases. The provisions of Chapter 4.9 are the exclusive means of considering as well as mitigating school impacts caused by new development. Accordingly, these provisions limit the scope of impact review in an EIR, the mitigation that can be imposed, and the findings a Lead Agency must make in justifying its approval of a Project (Government Code §65995-65996). According to Government Code §65996, the provisions of Chapter 4.9, including development fees authorized by SB 50, are deemed to be "full and complete school facilities mitigation…." These provisions remain in place as long as subsequent State bonds are approved and available.

Quimby Act

The Quimby Act, within the Subdivision Map Act, authorizes the legislative body of a city or county to require the dedication of land or to impose fees for park or recreational purposes as a condition of the approval of a tentative or parcel subdivision map, if specified requirements are met. Existing law requires any fees collected to be committed within five years after the payment of the fees or the issuance of building permits on 1/2 of the lots created by the subdivision, whichever occurs later. Existing law requires any fees not committed to be distributed and paid to the then record owners of the subdivision, as specified.[8]

LOCAL

City of Murrieta General Plan

SAFETY ELEMENT[9]

This Element describes hazards that exist in Murrieta and the measures that the City is taking to address them. Some naturally occurring hazards may be unavoidable, but their impacts on communities can be reduced through planning and preparation. Thus, the Safety Element addresses geologic, seismic, flood, and fire hazards. This Element also addresses hazards created by human activity: hazardous materials and waste, aircraft hazards, and incidents that call for police protection. Expecting that emergencies will occur even when precautions are taken against hazards, the Safety Element describes the City's efforts to prepare for and respond to emergencies.

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5 *Mira Development Corp. v. City of San Diego (1988) 205 Cal. App. 3d 1201 (Mira).*
6 *William S. Hart Union High School Dist. v. Regional Planning Comm. (1991) 226 Cal. App. 3d 1612 (Hart).*
7 *Murrieta Valley Unified School Dist. v. County of Riverside (1991) 228 Cal. App. 3d 1212 (Murrieta).*
8 California Legislative Information (CLI). (2015). *Assembly Bill No.1191, The Quimby Act Chapter 276.* Retrieved from CLI Website: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1191. Accessed September 13, 2019.
9 City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 12: Safety Element*. Pages 12-29 to 12-30. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 29, 2019.

Goal SAF-9: ***High-quality and timely police services are provided to all residents and businesses in Murrieta.***

Policy SAF-9.1: Seek to reach and maintain police officer and civilian support employee staffing levels to effectively and efficiently address the public safety needs, measured through established response times, crime statistics, crime clearance rates, and community quality of life issues.

Policy SAF-9.3: Consider options for locating field stations throughout the City to improve response times for Priority 1 calls and foster relationships with local residents.

Policy SAF-9.4: Maintain and implement a Police Department Strategic Plan to address staffing and facility needs, service goals, deployment strategies, and other department goals.

Policy SAF-9.5: Explore options for funding needed facilities, staff, and equipment.

Policy SAF-9.6: Ensure that new development can be served by police communication systems and provide for the construction of radio towers (repeater sites) in outlying areas.

CIRCULATION ELEMENT[10]

The Circulation Element of the Murrieta GP overviews the City's plans and policies for its transportation system. The section also outlines modes of transportation used in the City, such as cars, bicycles, and buses. The section assists in the planning of communities by incorporating land use with transportation.

Goal CIR-2: ***A comprehensive circulation system that promotes safety.***

Policy CIR-2.14: Ensure that efficient and safe access for emergency vehicles is provided to all development.

RECREATION AND OPEN SPACE ELEMENT[11]

As a policy document, the Recreation and Open Space Element requires continual efforts and actions by many segments of the community to implement. Community priorities that related to this Element include providing abundant parks and facilities for recreational activities and providing ample activities for all ages of youth, and jobs for teens.

Goal ROS-1: ***Parkland is provided within a convenient distance from all residential areas, in a range of park types that meet different needs for active and passive recreation.***

Policy ROS-1.1: Maintain a minimum standard of 5 acres of local parkland per 1,000 population.

Policy ROS-1.2: Create a strategy for providing sufficient parkland to accommodate needed recreation facilities through land acquisition, joint use, partnerships, and other means.

[10] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element*. Page 5-24. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed July 29, 2019.

[11] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 9: Recreation & Opens Space Element*. Pages 9-13 to 9-17. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/735/09---Recreation-and-Open-Space-Element-PDF. Accessed July 29, 2019.

Policy ROS-1.3: Provide City-Wide Parks, Community Parks, Neighborhood Parks, Neighborhood Play Areas, Special Use Parks, and Nature Parks in locations appropriate to their intended service areas, so that all residential areas are served by parks.

Goal ROS-2: ***Facilities that support recreation needs, programs, and community events are located throughout the City.***

Policy ROS-2.3: Ensure that recreation facilities provide access and accommodations for users with a range of physical abilities.

Goal ROS-3: ***City resources for parks and recreation facilities are leveraged through partnerships, joint use agreements, private facilities, outside funding, and community volunteers.***

Policy ROS-3.4: Encourage the development of private and commercial recreation facilities.

Goal ROS-8: ***New development is part of a coordinated system of open space, parkland, recreation facilities, and trails.***

Policy ROS-8.1: Encourage the provision of parks, recreation facilities, and/or open space in new development and redevelopment projects.

Policy ROS-8.2: Ensure that new residential developments provide for recreation needs of residents through development fees and park dedication.

Policy ROS-8.3: Encourage development that promotes outdoor activity.

Goals ROS-9: ***Public plazas or green spaces provide additional open space opportunities for existing and future residents and employees.***

Policy ROS-9.1: Continue to require that adequate, usable, and permanent private open space is provided in residential developments.

Policy ROS-9.2: Encourage new and existing commercial, office, and industrial development to provide outdoor green spaces that may be used by employees.

Policy ROS-9.3: Encourage new development and redevelopment projects to incorporate gardens and green spaces with various cultural influences throughout the community to bridge cultures and provide education opportunities.

Policy ROS-9.4: Encourage green spaces planted with a diverse plant palette in order to promote natural variety, ecosystem services, and enhance the well-being of community residents.

City of Murrieta Municipal Code[12]

MURRIETA MUNICIPAL CODE §15.24

The Murrieta MC §15.24.20 regulates site and building design in accordance with the California Residential Code.

[12] City of Murrieta. (2019). *Municipal Code*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/259/Development-Code. Accessed July 29, 2019.

MURRIETA MUNICIPAL CODE TITLE 8 AND 9

Murrieta MC Title 8 establishes requirements and regulations for the City relating to health and safety and Title 9 establishes requirements and regulations for the City relating to public peace, morals, and welfare.

MURRIETA MUNICIPAL CODE TITLE 16

Murrieta MC §16.36 establishes required residential and non-residential public facilities development impact fees. The Murrieta MC §16.36.010 outlines development impacts fees for residential and non-residential development projects. §16.36.060 states that all public facilities development impacts fees paid and collected pursuant to this chapter shall be placed in one or more funds and used solely for construction purposes, and expanding or rehabilitating the public facilities specified in the resolution establishing the fee and described in the City's capital improvement plan. Murrieta MC §16.36.070 establishes standards and provides a mechanism to evaluate the impacts of new development on public school facilities, and impose appropriate mitigation measures. This includes the creation and submittal of an annual school impact report, submittal of applications to school districts, and school impact analysis.

In addition, Murrieta MC §16.16.030 – *Planned Residential Development Design Standards and Parameters, Subsection B – Parkland Dedication* states that each project will be required to fulfill 100 percent of Quimby Act requirements and that no credits will be provided for private open space.

4.12.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

The CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if one or more of the following occurs:

- Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    - Fire protection? (addressed separately, see EIR Section 4.16, *Wildfire Hazards*)
    - Police protection? (see Impact 4.12-1)
    - Schools? (see Impact 4.12-2)
    - Parks? (see Impact 4.12-3)
    - Other public facilities? (see Impact 4.12-4)
- Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (see Impact 4.12-3)
- Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (see Impact 4.12-3)

METHODOLOGY AND ASSUMPTIONS

The Project is evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning public services and recreation. This analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on public services and recreation resources examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on field observations conducted by Kimley-Horn; review of project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on public services and recreation considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- Project parks and recreation facilities are designed to blend with and enhance the natural open space of the Project site. The MHSPA Project includes a public neighborhood park and pocket parks situated within the residential Planning Areas, a linear nature park, a private homeowner association (HOA) community center, and natural open space. Approximately 63 percent of the Project site, or approximately 648 acres, are designated as active and passive open space.

4.12.5 IMPACTS AND MITIGATION MEASURES

Impact 4.12-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Police protection?

Level of Significance: Less Than Significant Impact

CONSTRUCTION

The Project does not include or require construction of any new or physically altered police protection facilities. Individual Project construction activities within the MHSPA area would create a temporary

incrementally increased demand for police protection services during construction. Prior to commencement of construction activities, the Project plans would be reviewed by applicable local agencies to ensure compliance with the City's MC as well as all applicable regulations to ensure adequate site signage, lighting, and other crime safety preventative measures. Construction of individual developments within the MHSPA area will not result in adverse physical impacts associated with the provision of or need for new or physically altered police protection facilities, and will not adversely affect service ratios, response times, or other performance objectives. Impacts will be less than significant in this regard. Compliance with applicable local regulations will ensure that Project construction will result in a less than significant impact to police protection services.

Off-Site Construction Impacts

Construction of the McElwain Road extension would occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road are required to comply with the City's regulations relating to emergency access. The McElwain Road extension, from Linnel Lane to Keller Road, will provide an alternate route/access to areas in northern Murrieta. Please refer to the discussion under Impact 4.13-4 in Section 4.13, *Transportation*.

OPERATIONS

Upon annexation, services will be provided by the Murrieta Police Department, including receiving and dispatching emergency calls for services (police, fire, medical) via the 911 system, responding to police calls for service, providing visible patrols, enforcing all laws, investigating traffic collisions, and providing crime prevention educational programs.

Individual development projects within the MHSPA area would be designed to comply with the City's MC Chapter 15.24 and applicable MHSPA design guidelines and development standards, including the following:

- Neighborhood watch programs enacted through the HOA
- Adequate circulation for pedestrians, vehicles, and police patrols
- Adequate lighting of streets, walkways, and bikeways
- Visibility of doors and windows from the street and between buildings
- Fencing of private single-family residential property

With implementation of these design concepts and compliance with the City's goals and policies, development associated with the MHSPA would result in a less than significant impact to police protection services.

Off-Site Operations Impacts

Refer to previous discussion. The McElwain Road extension will provide emergency secondary access to the Project site, from the south, as well as provide additional emergency access for existing and future land uses located along future McElwain Road north of Linnel Street.

MITIGATION MEASURES

No mitigation is required.

Impact 4.12-2: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

ii) Schools?

Level of Significance: Less Than Significant Impact

CONSTRUCTION

Construction activities within the Specific Plan Area would be temporary and will not impact school facilities nor limit student capacity. The aforementioned schools would not be physically altered during the construction phase of the Project resulting in no impact. Nor have the MUSD or PUHSD requested that the Project incorporate a school site.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road will not create an adverse impact to schools. Adequate circulation will be maintained on Keller Road and Zeiders Road during off-site construction (see discussion in *Section 4.13, Transportation and Traffic*).

OPERATIONS

Student generation rates are used by school districts to estimate the number of students generated by new development to determine whether existing school facilitates would be adequate for future student enrollment. As identified in Table 4.12-1, *Student Generation,* using these student generation rates, the development of up to 750 residential units (557 single-family and 193 multi-family units) in the MHSPA area may introduce approximately 500 students into the attendance area of the MUSD and PUHSD.

Table 4.12-1: Student Generation

School Level	Student/Dwelling Unit (Single-family detached)	Student/Dwelling Unit (Multi-family residential)	Number of Units	Number of Students
MUSD				
Elementary / Middle School	0.4480[1]	Not provided.	750	336
PUHSD				
High School	0.2257[2]	0.1979[2]	557 single-family units 193 multi-family units	126 38
Total	-		-	**500**

1 – Per email communication with MUSD Public Information Officer, Betti Cadmus, dated 09/13/2019.
2 – Per email communication with PUHSD Director of Facilities, Hector Gonzalez, dated 9/23/2019.

School funding comes predominantly from federal, state, and local sources, such as business and personal income taxes, sales tax, and property taxes. These fees will be collected by both districts at the time of issuance of building permits. Payment of these fees will offset potential impacts from increased demand for school services associated with development of the Project by providing an adequate financial base to construct and equip new and existing schools. As a result, both districts would be able to provide adequate school facilities for the projected student residents of the Project. In addition, the Project has been substantially reduced in density compared to the previously approved Specific Plan No. SPM-4, which reduces student generation and associated demand on school facilities by roughly 50 percent. Therefore, with payment of impact fees by new development, impacts associated with the need for new or physically altered school facilities will be less than significant.

Off-Site Operations Impacts

Refer to Operations discussion above.

MITIGATION MEASURES

No mitigation is required.

Impact 4.12-3: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

iii) Parks?

Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The impacts of constructing and operating on-site park and recreational facilities are addressed throughout this EIR. The Project does not propose any off-site park or recreational facilities.

The MHSPA proposes 750 residential units along with a commercial and mixed-use planning area that would create additional demand for park and recreational facilities. The need for parks would be addressed through the Project's provision of a 4.6-acre public neighborhood park, approximately nine acres of pocket parks, a 2.7-acre HOA community center, and a 37.33-acre linear nature park extending through the residential areas. Additionally, approximately 609 acres would remain in permanent natural open space. Refer to Exhibit 3-8, *Recreation and Open Space Master Plan*, and Section 4.1 of the MHSPA. With the development of the proposed public neighborhood park, pocket parks, linear nature park and

HOA community center, it is anticipated that the Project will not significantly increase the use of other nearby off-site neighborhood parks, regional parks, or recreational facilities.

In addition to providing on-site park and recreational facilities, the Project will pay applicable park impact fees as established by the City of Murrieta, pursuant to the Quimby Act and local City Regulations (provision of on-site park and recreational facilities may be credited against required Quimby Act fees). According to *Chapter 9: Recreation and Open Space Element* of the Murrieta GP, the City's parkland standard of five acres per 1,000 people is the highest allowed under the Quimby Act.[13] Based on the proposed development plans, the Project's estimated 2,400 residents (assumes an average of 3.2 occupants per residence for this type of community and 750 households) would equate to a dedication requirement of 12 acres. The Project will comply Quimby Act and City regulations through the dedication of parkland and/or payment of in-lieu fees for parks/recreation purposes, as determined by the City. Therefore, impacts to existing neighborhood and regional parks or other recreational facilities will be less than significant.

Off-Site Construction and Operations Impacts

All off-site improvements are for utility and circulation related improvements and will not adversely impact the use of existing neighborhood and regional parks or other recreational facilities.

MITIGATION MEASURES

No mitigation is required.

Impact 4.12-4: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

iv) Other public facilities?

Level of Significance: Less Than Significant Impact

CONSTRUCTION

Construction activities within the Project area will be temporary and will not impact existing library facilities. The nearest libraries would not be physically altered during the construction phase of the Project. Therefore, there will be no impact.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road will not adversely impact libraries or other public facilities.

[13] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 9: Recreation and Open Space Element*. Page 9-9. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/735/09---Recreation-and-Open-Space-Element-PDF. Accessed July 29, 2019.

OPERATIONS

The Project does not include construction of any new or remodeled libraries. Existing libraries are available to serve the Project area including Paloma Valley Public Library at 31375 Bradley Road in Menifee; Mission Trails Public Library at 34303 Mission Trails in Wildomar; and the Murrieta Public Library at 8 Town Square in Murrieta. Therefore, impacts will be less than significant.

Off-Site Operations Impacts

Refer to previous discussion.

MITIGATION MEASURES

No mitigation is required.

4.12.6 CUMULATIVE IMPACTS

For purposes of public services and recreation, cumulative impacts are considered for cumulative projects located within Murrieta and Menifee; see Table 4-1, *Cumulative Projects List*. The Murrieta GP 2035 EIR found unavoidable significant cumulative impacts to park and recreational facilities, as discussed in the following paragraph. However, the Menifee GP EIR did not identify any unavoidable significant cumulative impacts regarding public services or parks and recreation.

The City of Murrieta GP 2035 Final EIR addresses cumulative impacts of City buildout. Per the Final EIR, buildout of the Murrieta GP would result in a significant and unavoidable impact to parks and recreational facilities. According to the analysis, development associated with the Murrieta GP would create additional demand on existing parks and recreational facilities. The City would review individual development projects to determine each project's potential impact on parks and recreational facilities in the City. Implementation of the goals and policies in the Murrieta GP would ensure the provision for new developments to mitigate impacts to parkland and recreational facilities. According to Section 2.20.5 of the GP EIR, the City has a parkland standard of five acres per 1,000 residents. As of 2009, the standard was not being met. In 2035, an approximately 44-acre deficit is anticipated. The analysis acknowledges that dedication of parkland by future developments and/or payment of in-lieu fees for parks/recreation purposes (as determined by the City), in combination with adherence to Murrieta GP parks and recreational facilities goal and policies, would reduce potential park impacts. However, due to the 44-acre parkland deficit, future growth associated with the Murrieta GP and cumulative development, the City's analysis finds that cumulative impacts to parks and recreational facilities would be considered significant and unavoidable. No mitigation beyond the goals and policies in the Murrieta GP are identified.[14] Note that the Project was not considered in the City of Murrieta's cumulative impacts analysis. The parks and recreational facilities proposed as part of the MHSPA Project would aid in reducing the City's parkland deficit through the construction of a 4.6-acre public neighborhood park, approximately nine acres of pocket parks, a 2.7-acre HOA community center, and a 37.33-acre linear nature park.

As discussed above in Section 4.12.5, *Impacts and Mitigation Measures*, all Project impacts to public services and recreation are considered less than significant as a result of the Project and payment of

[14] City of Murrieta. (2011). *City of Murrieta General Plan 2035 Environmental Impact Report, Section 5.20: Parks and Recreational Facilities*. Page 5.20-24. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/765/05-20---Parks-and-Recreation-Facilities-PDF. Accessed July 29, 2019.

applicable development impact fees. The Project's contribution toward potential future cumulative recreation impacts in the City of Murrieta is not considered to be cumulatively considerable.

4.12.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable public services and recreation resource impacts have been identified for either the construction or operation phases of the Project.

4.12.8 REFERENCES

City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Murrieta, CA: City of Murrieta.

City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed July 29, 2019.

City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 9: Recreation and Open Space Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/735/09---Recreation-and-Open-Space-Element-PDF. Accessed July 29, 2019.

City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 12: Safety Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 29, 2019.

City of Murrieta. (2011). *City of Murrieta General Plan 2035 Environmental Impact Report, Section 5.20: Parks and Recreational Facilities*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/765/05-20---Parks-and-Recreation-Facilities-PDF. Accessed July 29, 2019.

City of Murrieta. (2019). *Municipal Code*. Retrieved from City of Murrieta Website: http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca. Accessed July 29, 2019.

Mira Development Corp. v. City of San Diego (1988) 205 Cal. App. 3d 1201 (Mira).

Murrieta Valley Unified School Dist. v. County of Riverside (1991) 228 Cal. App. 3d 1212 (Murrieta).

William S. Hart Union High School Dist. v. Regional Planning Comm. (1991) 226 Cal. App. 3d 1612 (Hart).

4.13 TRANSPORTATION

4.13.1 INTRODUCTION

This section examines transportation issues related to the Murrieta Hills Specific Plan Amendment (MHSPA or Project), including the existing transportation system, significance criteria for transportation and traffic impacts, and potential Project impacts resulting from Project implementation. Information presented in this section was obtained from the *Murrieta General Plan 2035* (Murrieta GP), including the Circulation and Land Use elements; the City of Murrieta Municipal Code (Murrieta MC); the *City of Menifee General Plan Vision 2030* (Menifee GP); County of Riverside General Plan (Riverside County GP); and the *Murrieta Hills Specific Plan Traffic Impact Analysis* (2018, Appendix 9.9.1), *Vehicle Miles Traveled Analysis for the Murrieta Hills Specific Plan Project* (2019, Appendix 9.9.2), and *Murrieta Hills Specific Plan – Project Phase I Without Keller Road / I-215 Interchange* memo (2019, Appendix 9.9.3), all prepared by Michael Baker International (MBI).

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section (note that this EIR uses the new CEQA significance thresholds contained in the November 2018 CEQA Guidelines update, which became effective December 28, 2018):

a) Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

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

c) Would the Project result in inadequate emergency access?

Additionally, a cumulative impacts discussion is provided, along with appropriate and feasible mitigation measures which are included in their corresponding threshold (i.e., a, b, c, or d) discussion. As shown in Section 4.13.5, *Impacts and Mitigation Measures*, impact determinations in this section range from less than significant with mitigation incorporated to significant and unavoidable impacts.

Note that the traffic impact analysis (TIA) technical report for this Project (Appendix 9.9.1) analyzed two alternatives. Alternative 1 (Originally Proposed Project) would include 578 single-family units and 172 multi-family units, with 346,302 square feet of commercial retail. Alternative 2 (Environmentally Preferred Alternative) would have fewer single-family units (557 total), more multi-family units (193 total); and less commercial square footage (222,156 square feet) than Alternative 1. Analyses and data presented in this section are for Alternative 2.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted on Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown on Exhibit 3-3, *Vicinity*

Map. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.13.2 ENVIRONMENTAL SETTING

Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

Existing direct access to the Project site is via Keller Road and Scenic View Drive. Local access is provided via Zeiders Road, Scott Road, and Antelope Road, and regional access is provided via I-215. The existing transportation system is described below.

Traffic Impact Analysis

The TIA conducted by MBI analyzes the existing and forecast traffic conditions associated with the Project located immediately west of I-215 and south of Keller Road in the unincorporated Riverside County. The Project site is currently vacant and undeveloped. Access to the Project site would be provided via Zeiders Road, Keller Road and McElwain Road.

EXISTING TRANSPORTATION SYSTEM – ROADWAY CHARACTERISTICS

The characteristics of the roadway system in the Project study area are described below and locations are shown on Exhibit 4.13-1: *Existing Year 2017 Study Intersection Locations*:

I-215 provides regional access for the Project site as a freeway facility, traversing the Inland Empire in a north-south direction. I-215 begins at its southern terminus at the junction with I-15 in Murrieta and continues northbound through Perris. I-215 merges with State Route 60 (SR-60) from Moreno Valley to Riverside, splits at SR-91, continues northbound through San Bernardino and terminates at the junction with I-15 before the Cajon Pass. In the Project vicinity, I-215 is generally a six-lane freeway providing access to the Project site via the existing I-215 / Scott Road interchange (Scott Road to Zeiders Road to Keller Road and the Project site); I-215 / Clinton Keith Road interchange (Clinton Keith Road to Antelope Road to Keller Road and the Project site); and the future I-215 / Keller Road interchange.

[1] *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta (August 2019).

Sunset Avenue – Cottonwood Canyon Road is currently an unpaved dirt roadway trending in a north-south direction. There is no posted speed limit on Sunset Avenue or Cottonwood Canyon Road.

Murrieta Road is a two-lane undivided roadway trending in a north-south direction. The posted speed limit is 50 miles per hour (mph) on Murrieta Road within the Project study area; on-street parking is generally permitted in the northbound direction of travel.

Haun Road is a two-lane undivided roadway trending in a north-south direction. South of Scott Road, Haun Road continues as Zeiders Road. There is no posted speed limit on Haun Road within the Project study area; on-street parking is prohibited.

Zeiders Road is a continuation of Haun Road. Zeiders Road is a two-lane undivided roadway trending in a north-south direction. There is no posted speed limit on Zeiders Road within the Project study area; on-street parking is permitted.

McElwain Road is a four-lane divided roadway with a raised median from Clinton Keith Road to Sage Glen Street trending in a north-south direction. McElwain Road continues as a four-lane undivided roadway with a painted median from Orchard Center/Loganberry Avenue to Delaney Circle and continues as a three-lane undivided roadway with a painted median from Delaney Circle to Linnel Lane. Per the Murrieta GP Circulation Element, McElwain Road is planned to extend from Linnel Lane northward to the City of Murrieta boundary. The posted speed limit on McElwain Road within the Project study area is between is 35 and 40 mph; on-street parking is prohibited.

Antelope Road is generally a two-lane undivided roadway trending in a north-south direction; except for an approximately 900-foot long segment extending south from Scott Road, where it's a four-lane roadway. The posted speed limit on Antelope Road is 55 mph north of Scott Road. South of Scott Road, the speed limit on Antelope Road is 50 mph within the Project study area; on-street parking is permitted in the northbound direction of travel, south of Keller Road only.

Mapleton Avenue is a north-south trending four-lane divided roadway with an at-grade center median that provides for a left-turn lane at intersecting side streets and driveways. Right-turn lanes are provided at the terminating intersections with Antelope Road and Keller Road. The posted speed limit on Mapleton Avenue is 40 mph. On-street parking is permitted along northbound and southbound Mapleton Avenue.

Mitchell Road is a two-lane undivided roadway trending in a north-south direction. There is no posted speed limit within the Project study area; on-street parking is permitted.

Murrieta Oaks East Avenue is a two-lane undivided roadway trending in a north-south direction. The posted speed limit on Murrieta Oaks East Avenue is 35 mph (25 mph when children are present) within the Project study area; on-street parking is permitted.

Menifee Road is a two-lane undivided roadway trending in a north-south direction from the Murrieta/Menifee city limit (approximately midway between Mapleton Street and Tulita Lane) to Garbani Road. Right and left-turn lanes are provided at select cross and side streets. Menifee Road continues south of the Murrieta/Menifee city limit as Whitewood Road. The posted speed limit on Menifee Road within the Project study area is 45 mph; on-street parking is prohibited.

Whitewood Road, from Keller Road to approximately 3,000 feet south of Keller Road, is a four-lane divided roadway with a raised median trending in a north-south direction. Whitewood Road continues north of Keller Road as Menifee Road. Whitewood Road, from Keller Road south to Clearview Street, is a

divided four-lane roadway with a raised median. From Clearview Street to Triple C Ranch Road, Whitewood Road is a four-lane undivided roadway with a painted median. From Triple C Ranch Road to Baxter Road, Whitewood Road is a four-lane divided roadway with a raised median trending in a north-south direction. Whitewood Road from Baxter Road to Clinton Keith Road is a four-lane undivided roadway and continues south of Clinton Keith Road as a three-lane divided roadway with a painted median. Class II bike lanes are provided along both sides of Whitewood Road from Keller Road to Clinton Keith Road. The posted speed limit is 45 mph on Whitewood Road; on-street parking is prohibited.

Bundy Canyon Road is a two-lane undivided roadway trending in an east-west direction. Bundy Canyon Road continues as Scott Road east of Murrieta Road. On-street parking is prohibited; the posted speed limit is 45 mph.

Scott Road, from Murrieta Road to Zeiders Road/Haun Road, is a two-lane undivided roadway trending in an east-west direction. Scott Road continues east from Zeiders Road/Haun Road to I-215 as a two-lane divided roadway with a painted median. Scott Road continues east of I-215 as a four-lane divided roadway with a painted median. The posted speed limit is 50 mph; on-street parking is currently prohibited.

In addition, construction of the Scott Road/I-215 Interchange Project began in Summer 2018 and is estimated to take 18 months to complete. As of August 2019, the project is still under construction. Project information and construction updates can be found on the City of Menifee website (https://cityofmenifee.us/495/Scott-RoadI-215-Interchange-Project) and a complete project description can be found in the Project Lists appendix of the Final 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS).[2]

Keller Road, from I-215 west to Zeiders Road is a two-lane undivided roadway trending in an east-west direction. West of Zeiders Road, Keller Road is an unpaved dirt roadway, terminating at Nancy Lane. From I-215 east to Gladiolus Avenue/Meadowlark Lane, Keller Road is a three-lane undivided roadway with a painted median, two westbound lanes, and one eastbound lane trending in the east-west direction. East of Gladiolus Avenue/Meadowlark Lane, Keller Road is a two-lane undivided roadway with a painted median trending in the east-west direction. On-street parking is prohibited between I-215 and Mapleton Avenue. The posted speed limit is 40 mph.

Planning for an interchange at I-215 and Keller Road is currently underway. While separate from the MHSPA Project, the proposed interchange will greatly improve access to and from the Project site. The Project is dedicating right-of-way to the proposed interchange on the southwest corner of I-215 and Keller Road. The lead agency for the I-215/Keller Road interchange project is the City of Murrieta.

Baxter Road is a four-lane undivided roadway with a painted center left lane trending in an east-west direction. The posted speed limit on Baxter Road is 40 mph within the Project study area; on-street parking is prohibited.

Linnel Lane, from McElwain Road to I-215, is a two-lane undivided roadway with a painted median trending in an east-west direction. From I-215 to Whitewood Road, Linnel Lane is a four-lane undivided roadway with a painted median trending in an east-west direction. Linnel Lane, west of McElwain Road

[2] Southern California Associates of Governments (SCAG). (2016). *Final 2016-2040 RTP/SCS - Project List Appendix*. Table 2: Financially-Constrained RGP/SCS Projects. Page 243. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_ProjectList.pdf. Accessed August 5, 2019.

and east of Whitewood Road, is an unpaved dirt road trending in an east-west direction. There is no posted speed limit on Linnel Lane within the Project study area; on-street parking is prohibited.

Clinton Keith Road west of Greer Road/Murrieta Oaks Avenue West is a four-lane undivided roadway with a painted median trending in an east-west direction. From Greer Road/Murrieta Oaks Avenue West to Murrieta Oaks Avenue East, Clinton Keith Road is a five-lane undivided roadway with a painted median. Clinton Keith Road from Murrieta Oaks Avenue East to McElwain Road is a four-lane divided roadway with a raised median. From McElwain Road to Whitewood Road, Clinton Keith Road is a six-lane divided roadway with raised median trending in an east-west direction. Clinton Keith Road currently terminates approximately 100 feet east of Whitewood Road. A future extension east from Whitewood Road to Trois Valley Street is currently under construction. The posted speed limit on Clinton Keith Road is between 40 and 45 mph within the Project study area and 25 mph when children are present east of Creighton Avenue; on-street parking is prohibited. Class II bike lanes are provided along both sides of the roadway within the Project study area.

STUDY AREA

The study area consists of the following 24 study intersections in the vicinity of the Project site identified by City staff in the scoping agreement (see Exhibit 4.13-1: *Existing Year 2017 Study Intersection Locations*):

1. Sunset Avenue - Cottonwood Canyon Road / Bundy Canyon Road (unsignalized);
2. Murrieta Road / Scott Road (unsignalized);
3. Haun Road – Zeiders Road / Scott Road (signalized);
4. I-215 Southbound Ramps / Scott Road (signalized);
5. I-215 Northbound Ramps / Scott Road (signalized);
6. Antelope Road / Scott Road (signalized);
7. Zeiders Road / Keller Road (unsignalized);
8. Antelope Road / Keller Road (signalized);
9. Mapleton Road / Keller Road (unsignalized);
10. Menifee Road / Keller Road (signalized);
11. Antelope Road / Baxter Road (signalized);
12. Warm Springs Parkway / Baxter Road (signalized);
13. Whitewood Road / Baxter Road (signalized);
14. McElwain Road / Linnel Lane (unsignalized);
15. Whitewood Road / Linnel Lane (signalized);
16. Murrieta Oaks East Avenue / Clinton Keith Road (signalized);
17. McElwain Road / Clinton Keith Road (signalized);
18. I-215 Southbound Ramps / Clinton Keith Road (signalized);
19. I-215 Northbound Ramps / Clinton Keith Road (signalized);

20. Whitewood Road / Clinton Keith Road (signalized);
21. I-215 Southbound Ramps / Keller Road (future roundabout);
22. I-215 Northbound Ramps / Keller Road (future roundabout);
23. Warm Springs Road / Linnel Lane (future intersection); and
24. Warm Springs Road / Clinton Keith Road (future intersection).

Additionally, this analysis evaluates the following 15[3] study roadway segments (see Exhibit 4.11-2, *Roadway Segment Locations*):

1. Keller Road from Howard Way to Zeiders Road;
2. Keller Road from Zeiders Road-McElwain Road to I-215 SB Ramps;
3. Keller Road from I-215 NB Ramps to Antelope Road or Mapleton Avenue;
4. Keller Road from Mapleton Avenue to Whitewood Road / Menifee Road;
5. Zeiders Road from Keller Road to Scott Road;
6. McElwain Road from Keller Road to "J-J" Street[4];
7. McElwain Road from "J-J" Street to "D" Street;
8. McElwain Road from "D" Street to Linnel Lane;
9. McElwain Road from Linnel Lane to Clinton Keith Road;
10. Antelope Road from Scott Road to Mapleton Avenue;
11. Antelope Road from Scott Road to Keller Road;
12. Scott Road from Howard Way to Haun Road / Zeiders Road;
12. Scott Road from Haun Road / Zeiders Road to I-215 SB Ramps;
14. Scott Road from I-215 NB Ramps to Antelope Road; and
15. Clinton Keith Road from I-215 NB Ramps to Whitewood Road.

EXISTING CONDITIONS TRAFFIC VOLUMES

To determine the existing operation of the study intersections, a.m. peak hour and p.m. peak hour intersection movement counts were collected in August and October 2017; a.m. peak period intersection counts were collected from 7:00 a.m. to 9:00 a.m. and p.m. peak period intersection counts were collected from 4:00 p.m. to 6:00 p.m. The counts used in this analysis were taken from the highest hour within the peak period counted. Also, existing roadway segment ADT counts were collected in August and October 2017. Construction of Whitewood Road between Keller Road and Baxter Road was completed and open to traffic on September 26th, 2017; therefore, new counts at critical locations were collected in October 2017 to account for new travel patterns and used in this analysis. Exhibits 4.13-2 and 4.13-3 show the

[3] Note that the Traffic Impact Analysis conducted for this Project, located in Appendix 9.9.1, initially states that the analysis evaluates 14 roadway segments (see TIA pages 5 and 50). However, the data provided in the analysis (see TIA Tables 28 through 48) evaluates 15 study roadway segments. Therefore, the list in this EIR has been updated to reflect the 15 study roadway segments.

[4] "J-J" Street and "D" Street are proposed street sections internal to the MHSPA site. Also note that "J-J" Street corresponds to Street "W-W" on the Tentative Tract Map. See Exhibit 3-9: *Circulation Plan* for the location of "D" Street. "J-J" Street (Street "W-W") corresponds to the access point/cul-de-sac located on the border of PA 9 and PA 8.

existing intersection geometry and road segments. Exhibits 4.13-4 and 4.13-5 show the existing AM and PM peak hour intersection volumes at the study intersections.

EXISTING CONDITIONS PEAK HOUR STUDY INTERSECTION LEVEL OF SERVICE ANALYSIS

Table 4.13-1 summarizes existing conditions a.m. and p.m. peak hour LOS of the study intersections.

Table 4.13-1: Existing Conditions AM and PM Peak Hour Study Intersection LOS

Study Intersection	Traffic Control	AM Peak Hour	PM Peak Hour
		Delay – LOS	Delay – LOS
1. Sunset Ave - Cottonwood Canyon Rd. / Bundy Canyon Rd.	Two-Way Stop	22.3 – C	24.8 – C
2. Murrieta Rd. / Scott Rd.	All-Way Stop	**40.3 – E**	**44.0 – E**
3. Haun Rd. - Zeiders Rd. / Scott Rd.	Signal	**>80.0 – F**	**77.7 – E**
4. I-215 SB Ramps / Scott Rd.	Signal	25.7 – C	25.7 – C
5. I-215 NB Ramps / Scott Rd.	Signal	34.8 – C	41.4 – D
6. Antelope Rd. / Scott Rd.	Signal	**60.6 – E**	**59.9 – E**
7. Zeiders Rd. / Keller Rd.	One-Way Stop	9.4 – A	9.0 – A
8. Antelope Rd. / Keller Rd.	Signal	29.4 – C	24.9 – C
9. Mapleton Ave. / Keller Rd.	One-Way Stop	11.8 – B	10.9 – B
10. Menifee Rd. / Keller Rd.	Signal	14.0 – B	14.2 – B
11. Antelope Rd. / Baxter Rd.	Signal	24.1 – C	28.8 – C
12. Warm Springs Pkwy. / Baxter Rd.	Signal	34.5 – C	31.0 – C
13. Whitewood Rd. / Baxter Rd.	Signal	14.8 – B	14.0 – B
14. McElwain Rd. / Linnel Ln.	All-Way Stop	11.7 – B	9.9 – A
15. Whitewood Rd. / Linnel Ln.	Signal	16.4 – B	13.2 – B
16. Murrieta Oaks East Ave / Clinton Keith Rd.	Signal	29.8 – C	16.7 – B
17. McElwain Rd. / Clinton Keith Rd.	Signal	25.7 – C	30.4 – C
18. I-215 SB Ramps / Clinton Keith Rd.	Signal	16.9 – B	16.6 – B
19. I-215 NB Ramps / Clinton Keith Rd.	Signal	40.1 – D	17.5 – B
20. Whitewood Rd. / Clinton Keith Rd.	Signal	52.1 – D	48.9 – D
21. I-215 SB Ramps / Keller Rd.	Future Roundabout		
22. I-215 NB Ramps / Keller Rd.	Future Roundabout		
23. Warm Springs Rd. / Linnel Ln.	Future Intersection		
24. Warm Springs Rd. / Clinton Keith Rd.	Future Intersection		

Notes: Deficient operation shown in bold;
Delay shown in seconds; SB = Southbound; NB = Northbound;
* = Delay exceeds 80.0 seconds for signalized intersection or 50.0 seconds for un-signalized intersection; Level of Service F per HCM.
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 12. Table 3. EIR Appendix 9.9.1.

As shown in Table 4.13-1 above, the study intersections are currently operating at an acceptable LOS (LOS D or better) for existing conditions according to applicable performance criteria, with the exception of the following three study intersections:

- Intersection 2 - Murrieta Road / Scott Road (a.m. (LOS E) and p.m. (LOS E) peak hour);
- Intersection 3 – Haun Road-Zeiders Road / Scott Road (a.m. (LOS F) and p.m. (LOS E) peak hour); and
- Intersection 6 - Antelope Road / Scott Road (a.m. (LOS E) and p.m. (LOS E) peak hour).

The Project site, located immediately west of I-215 and south of Keller Road, is currently vacant. Access for the Project site is provided via Zeiders Road and Keller Road. As previously noted, Phase 1 of the Project

is planned to open in year 2023. Phase 2 of the Project is planned to open in year 2028, and Phase 3 of the Project is planned to open in year 2031.

EXISTING CONDITIONS STUDY ROADWAY SEGMENT ANALYSIS

Table 4.13-2 below summarizes existing conditions analysis of the study roadway segments.

Table 4.13-2: Existing Conditions Study Roadway Segment LOS

Study Roadway Segment	Roadway Segment Classification	No. of Lanes	Roadway Segment Capacity	ADT	V/C	LOS
Keller Road						
1. Howard Way to Zeiders Road	Collector	2	13,000	290	0.02	A
2. Zeiders Road-McElwain Road to I-215 SB Ramps	Collector	2	13,000	1,100	0.08	A
3. I-215 NB Ramps to Antelope Road or Mapleton Avenue	Collector	2	13,000	3,160	0.24	A
4. Mapleton Avenue to Whitewood Road / Menifee Road	Collector	2	13,000	2,910	0.22	A
Zeiders Road						
5. Keller Road to Scott Road	Collector	2	13,000	920	0.07	A
McElwain Road						
6. Keller Road to Street "J-J"	N/A	N/A	N/A	N/A	N/A	N/A
7. Street "J-J" to Street "D"	N/A	N/A	N/A	N/A	N/A	N/A
8. Street "D" to Linnel Lane	N/A	N/A	N/A	N/A	N/A	N/A
9. Linnel Lane to Clinton Keith Road	Secondary	4	25,900	15,020	0.58	A
Antelope Road						
10. Scott Road to Mapleton Avenue	Collector	2	13,000	8,110	0.62	B
11. Mapleton Avenue to Keller Road	Collector	2	13,000	12,300	**0.95**	**E**
Scott Road						
12. Howard Way to Haun Road / Zeiders Road	Collector	2	13,000	14,920	**1.15**	**F**
13. Haun Road / Zeiders Road to I-215 SB Ramps	Collector	2D	18,000	25,700	**1.43**	**F**
14. I-215 NB Ramps to Antelope Road	Arterial	4	35,900	40,030	**1.12**	**F**
Clinton Keith Road						
15. I-215 NB Ramps to Whitewood Road	Urban Arterial	6	53,900	13,850	0.26	A

Notes: V/C = Volume-to-capacity ratio. Deficient operation shown in **bold**.
N/A = Not applicable since roadway segment has not yet been constructed and does not exist for this scenario.
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 53. Table 30. EIR Appendix 9.9.1.

As shown in Table 4.13-2 above, the study roadway segments are currently operating at an acceptable LOS (LOS C or better) for existing conditions according to applicable performance criteria **except for** the following four study roadway segments that are forecast to operate at a deficient LOS (LOS D or worse):

- Segment 11 - Antelope Road from Mapleton Avenue to Keller Road (LOS E);
- Segment 12 - Scott Road from Howard Way to Haun Road / Zeiders Road (LOS F);
- Segment 13 - Scott Road from Haun Road / Zeiders Road to I-215 SB Ramps (LOS F); and
- Segment 14 - Scott Road from I-215 NB Ramps to Antelope Road (LOS F).

Bus Service

Riverside Transit Agency (RTA) provides public bus services to Riverside County. Routes with stops in the City of Murrieta are 23, 61, 202, 205, 206, and 208. Within the Project vicinity, Route 61 travels through

Scott Road, Mapleton Street, Keller Road, and Linnel Lane. The closest bus stops (northbound and southbound) within the immediate Project are located at the intersection of McElwain Road and Delaney Circle, near the Super Target store. Delaney Circle parallels Linnel Lane to the south.

All RTA fixed-route buses are accessible to persons with disabilities. However, for seniors and persons with disabilities, Dial-A-Ride is also available which is an origin-destination advance reservation transportation service. Dial-A-Ride vehicles travel to areas within three-quarters of a mile of an RTA local fixed route and is provided at times equivalent to local fixed-route bus service in that area.

Bicycle and Pedestrian Paths

Currently, there are no official pedestrian or bicycle facilities serving the Project site. Between I-215 and Zeiders Road, Keller Road is paved but does not offer any sidewalks or bicycle facilities. From Zeiders Road to Nancy Lane, Keller Road is unpaved. The Project site is crossed by several dirt roads and is further disturbed in areas by unauthorized off-highway vehicle, bicycle, and hiking activities and illegal dumping.

Note that in the *Riverside County Regional Parks and Open-Space District Comprehensive Trail Plan* (Draft January 2018), identifies 'other' trails that traverse the Project site on its *Existing Conditions – Regional Trails* map.[5] On *Figure C-6 – Riverside County Trails and Bikeway System* of the *Riverside County GP Circulation Element*, the same trails are symbolized as "Regional Trail: Open Space.[6]

4.13.3 REGULATORY FRAMEWORK

STATE

Sustainable Communities Strategies: Senate Bill 375 – Land Use Planning

Senate Bill (SB) 375 provides for a planning process to coordinate land use planning and RTPs and funding priorities in order to help California meet the greenhouse gas (GHG) reduction goals established in Assembly Bill (AB) 32. SB 375 requires that RTPs developed by metropolitan planning organizations (MPO) relevant to the Project site (e.g., Southern California Association of Governments [SCAG]) incorporate a "sustainable communities strategy" in their RTPs that will achieve GHG emission reduction targets set by the California Air Resources Board (CARB). SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as Transit-Oriented Developments (TODs).

As an MPO, SCAG is responsible for preparing and utilizing a public participation plan that is developed in consultation with all interested parties and provides reasonable opportunities for interested parties to comment on the content of SCAG's proposed RTP and the Regional Transportation Improvement Program (TIP). SB 375 requires SCAG to adopt a public participation plan for development of the sustainable communities strategy (SCS) and an alternative planning strategy (APS). Further, as required by SB 375, SCAG conducted 14 informational briefings within the region for members of the board of supervisors and city councils on the SCS and APS, if any. The purpose of the meetings was to present a draft of the SCS to

[5] Riverside County (2018). *Riverside County Regional Parks and Open-Space District Comprehensive Trail Plan*. Page 62. Retrieved from Riverside County Website: https://www.rivcoparks.org/wp-content/uploads/Riverside_County_Comprehensive_Trails_Plan_Draft_(Combined).pdf.

[6] Riverside County (2016). *Riverside County General Plan Circulation Element, Figure C-6: Riverside County Trails and Bikeway System*. Page C-41. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch04_Circulation_121316.pdf?ver=2017-10-11-093743-433.

members of the board of supervisors and city council members and to solicit and consider their input and recommendations.

SB 743 – Update to the CEQA Guidelines for Transportation Impacts

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The changes to the Guidelines were approved by the Office of Administrative Law and are now in effect. The updated guidelines shift traffic analysis from delay and operations to vehicle miles traveled (VMT) when evaluating transportation impacts under CEQA. This change in methodology is a result of SB 743, which was signed into law in September 2013. SB 743 created a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.

Measurements of transportation impacts may include VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. According to SB 743, projects should aim to reduce VMT and mitigate potential VMT impacts through the implementation of transportation demand management (TDM) strategies. By July 1, 2020, all CEQA lead agencies must analyze a project's transportation impacts using VMT. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide." In order to implement these new CEQA guidelines, each lead agency will need to identify their preferred VMT metric; VMT methodology; VMT impact significance threshold; and VMT mitigation options.

As part of the development of the new CEQA guidelines, the OPR prepared a Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory). The final version of the Technical Advisory is dated December 2018 and provides guidance for local jurisdictions in developing methodologies and thresholds for evaluating VMT. The Technical Advisory provides VMT thresholds for residential, retail and employment. At the time this report was prepared, the City of Murrieta had not yet adopted VMT thresholds or guidelines. Therefore, pursuant to SB 743, the VMT threshold is not used in this EIR as a significance threshold, but the City has included a VMT analysis for informational purposes.[7]

California Department of Transportation State Transportation Improvement Program

The California Department of Transportation (Caltrans) State Transportation Improvement Program (STIP) is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources. STIP programming generally occurs every two years. The programming cycle begins with the release of a proposed fund estimate in July of odd-numbered years, followed by California Transportation Commission (CTC) adoption of the fund estimate in August (odd years). The fund estimate serves to identify the amount of new funds available for the programming of transportation projects. Once the fund estimate is adopted, Caltrans and the regional planning agencies prepare transportation improvement plans for submittal by December 15th (odd years). Caltrans prepare the Interregional Transportation Improvement Plan (ITIP) and regional agencies prepare Regional Transportation Improvement Plans (RTIPs). Public

[7] *Vehicle Miles Traveled Analysis for the Murrieta Hills Specific Plan Project,* Page 1–2. EIR Appendix 9.9.2.

hearings are held in January (even years) in both northern and southern California. The STIP is adopted by the CTC by April (even years).[8] All federally-funded projects must be included in an FHWA-approved Federal Transportation Improvement Program (FTIP). The Keller Road/I-215 interchange, a separate project, is included in the FTIP under RTPID 3M10WT03.

REGIONAL

Western Riverside Council of Governments

The Western Riverside Council of Governments (WRCOG), in coordination with Fehr and Peers, prepared a WRCOG SB 743 Implementation Pathway Document Package (WRCOG Document Package) dated March 2019. The WRCOG Document Package provides guidance for local jurisdictions in western Riverside County to develop methodologies and thresholds for evaluating VMT. A VMT impact screening tool was also created for WRCOG to aide with SB 743 implementation. WRCOG reports VMT as total VMT per service population, residential home-based VMT per capita, and home-based VMT per capita. The tool can be found here: http://www.fehrandpeers.com/wrcog-sb743/.

County of Riverside Congestion Management Program

The passage of Proposition 111 in June 1990 established a process for each metropolitan county in California that has an urbanized area with a population over 50,000 (which would include the County of Riverside) to prepare a Congestion Management Program (CMP). The CMP that was prepared by the Riverside County Transportation Commission (RCTC) in 2011, in consultation with the county and cities in Riverside County, is an effort to more directly align land use, transportation, and air quality management efforts and to promote reasonable growth management programs that effectively use statewide transportation funds while ensuring that new development pays its fair share of needed transportation improvements.

The focus of the CMP is the development of an Enhanced Traffic Monitoring System in which real-time traffic count data can be accessed by the RCTC to evaluate the condition of the Congestion Management System (CMS), as well as meeting other monitoring requirements at the state and federal levels. Per the CMP-adopted LOS standard. of E, when a CMS segment falls to LOS F, a deficiency plan is required. Preparation of a deficiency plan would be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency would also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including TDM strategies and transit alternatives, and a schedule of mitigating the deficiency. To ensure that the CMS is appropriately monitored to reduce the occurrence of CMP deficiencies, it is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on the CMS.

The CMP requires that a TIA be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System. Per the CMP guidelines, this number is based on the desire to analyze any impacts that comprise three percent or more of the existing CMP Highway System facilities' capacity. The CMP Highway System includes specific roadways, including state highways, smart streets, and CMP arterial monitoring locations/intersections. Therefore, the CMP

[8] Caltrans. (2019). *State Transportation Improvement Program (STIP)*. Retrieved from Caltrans Website: https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/state-transportation-improvement-program. Accessed September 17, 2019.

TIA requirements relate only to the designated CMP Highway System. The CMP system near the Project site consists of the following roadways:

- I-215
- I-15
- SR-79 North (Winchester Road)

Riverside County Transportation Commission

The RCTC plans and implements transportation and transit improvements and assists local governments with money for local streets and roads. The RCTC is governed by the following elected officials: one from each city council and all five County Supervisors within Riverside County; plus, a representative of Caltrans. The RCTC is the agency charged with recommending projects proposed for funding under the SCAGs' RTP/SCS.

Riverside Transit Agency

Established as a Joint Powers Agency on August 15, 1975, the Riverside Transit Agency (RTA) began operating bus service in 1977. The RTA is the Consolidated Transportation Service Agency for western Riverside County and is responsible for coordinating transit services throughout the approximate 2,500 square mile service area. RTA provides both local and regional services throughout the region with 39 fixed routes, eight CommuterLink express routes, and Dial-A-Ride services using 334 vehicles. The RTA is governed by a board of directors comprised of 22 elected officials from 18 cities in western Riverside County, including the City of Murrieta, and four members of the County Board of Supervisors.

County of Riverside General Plan

CIRCULATION ELEMENT

The Riverside County GP's Circulation Element[9] designates future road improvements and extensions, addresses non-motorized transportation alternatives, and identifies funding options. It also identifies transportation routes, terminals, and facilities. The Circulation Element establishes policies that coordinate the circulation system with Riverside County GP and area plan land use maps and provide direction for future decision-making in the realization of the Circulation Element goals. Policies relevant to the Project area as follows:

Policy C 1.6: Cooperate with and where appropriate lead local, regional, state, and federal agencies to establish an efficient circulation system.

Policy C 2.4: The direct project-related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service targets.

Policy C 3.6: Require private developers to be primarily responsible for the improvement of streets and highways that serve as access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other

[9] Riverside County. (2017). *County of Riverside General Plan, Chapter 4: Circulation Element*. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch04_Circulation_121217.pdf. Accessed September 17, 2019.

auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.

Policy C 7.1: Work with incorporated cities to mitigate the cumulative impacts of incorporated and unincorporated development on the transportation system.

Policy C 8.3: Use annexations, development agreements, revenue-sharing agreements, tax allocation agreements and the CEQA process as tools to ensure that new development pays a fair share of costs to provide local and regional transportation improvements and to mitigate cumulative traffic impacts.

LOCAL

City of Murrieta General Plan 2035

CIRCULATION ELEMENT

The Circulation Element[10] of the Murrieta GP includes goals and policies that will be applied to the Project related to traffic. This element represents the City's overall transportation plan to accommodate the movement of people and goods within and through the City.

Goal CIR-1: ***A circulation system that serves the internal circulation needs of the City, while also addressing the inter-community or through travel needs.***

Policy CIR-1.1: Ensure the transportation system can adequately serve the concentrations of population and employment activities identified by the Land Use Element.

Policy CIR-1.2: Maintain a Level of Service "D" or better at all intersections during peak hours. Maintain a Level of Service "E" or better at freeway interchanges during peak hours.

Policy CIR-1.3: Maintain an average daily traffic (ADT) Level of Service "C" or better for all roadway segments. As an exception, LOS "D" may be allowed in the North Murrieta Business Corridor, Clinton Keith/Mitchell, Golden Triangle North (Central Murrieta), South Murrieta Business Corridor, or the Multiple Use 3 Focus Areas, or other employment centers. LOS "D" may be allowed only at intersections of any combination of Secondary roadways, Major roadways, Urban Arterial roadways, Expressways, conventional state highways, or freeway ramps.

Goal CIR-2: ***A comprehensive circulation system that promotes safety.***

Policy CIR-2.3: Provide a circulation network that accommodates the safe and efficient movement of all forms of non-motorized travel.

Policy CIR-2.4: Ensure new roadways and intersections provide adequate sight distances for safe vehicular movement.

Policy CIR-2.14: Ensure that efficient and safe access for emergency vehicles is provided to all development.

[10] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5 – Circulation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed August 5, 2019.

Goal CIR-3: ***Circulation systems that preserve the quality of residential neighborhoods.***

Policy CIR-3.2: Review the design of all proposed new residential neighborhoods to ensure that "cut through" routes are minimized, and pedestrian connections are maximized.

Goal CIR-6: ***Alternative travel modes and facilities are available to serve residents and employers/employees and reduce vehicle miles traveled.***

Policy CIR-6.1: Encourage alternatives to single-occupancy vehicle transportation such as rail, public transit, paratransit, walking, cycling, and ridesharing.

Policy CIR-6.7: Coordinate with the Riverside Transit Agency to provide fixed-route transit service along transportation corridors connecting to employment and commercial areas, schools, health care facilities, and major recreation areas.

Policy CIR-6.9: Work with the Riverside Transit Agency to evaluate bus stops locations and amenities. Encourage the incorporation of transit amenities such as bus shelters and benches into existing and new bus stop locations.

Goal CIR-7 ***Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.***

Policy CIR-7.1: Encourage future developments to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences.

Policy CIR-7.3: Encourage safe pedestrian walkways and ensure compliance with the Americans with Disabilities Act (ADA) requirements within all developments.

Policy CIR-7.5: Provide pedestrian amenities such as benches, trees, landscaping, and shade trees to encourage people to walk to destinations.

GOAL CIR-8: ***Development, expansion, and maintenance of a network of bicycle, pedestrian, and multi-use trails that allows residents to travel between parks, schools, neighborhoods, and other major destinations without driving.***

Policy CIR-8.2: Promote bicycle and pedestrian trails along major home to work and other travel routes.

Policy CIR-8.3: Consider roadway design guidelines for new development and for capital improvement plans that enhance bicycle and pedestrian connectivity and safety.

Policy CIR-8.8: When different uses are developed adjacent to each other – such as new commercial adjacent to new residential – require them to provide high-quality pedestrian amenities and connections between each other to the greatest degree possible.

Policy CIR-8.9: Create cyclist and pedestrian connections through cul-de-sacs and across other barriers, connecting neighborhoods with each other and the citywide trail system. When feasible, consider purchasing easements across private land for priority pedestrian connections.

LAND USE ELEMENT

The Land Use Element[11] of the Murrieta GP is intended to facilitate the City's growth by promoting land uses and development activity in a way that further improves the City's future.

Goal LU-9: ***Land use patterns and urban design that support healthy and sustainable lifestyles and businesses.***

Policy LU-9.2: Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial, mixed-use or transit-oriented development areas.

Policy LU-9.3: Encourage new neighborhoods to be built on a pedestrian-scale, within walking distance of parks, neighborhood-serving commercial areas, and other neighborhood amenities.

City of Menifee General Plan Vision 2030

CIRCULATION ELEMENT

The Circulation Element[12] of the Menifee GP provides guidance for the City's responsibility to satisfy the local and sub-regional circulation needs of residents, visitors, and businesses while maintaining the City's quality of life. This element also coordinates the circulation system with future land use patterns and levels of buildout and addresses access and connectivity among the various neighborhoods and economic development districts.

Goal C-1: ***A roadway network that meets the circulation needs of all residents, employees, and visitors to the City of Menifee.***

Policy C-1.1: Require roadways to:

- Comply with federal, state and local design and safety standards.
- Meet the needs of multiple transportation modes and users.
- Be compatible with the streetscape and surrounding land uses.
- Be maintained in accordance with best practices.

Policy C-1.2: Require development to mitigate its traffic impacts and achieve a peak hour Level of Service (LOS) D or better at intersections, except at constrained intersections at close proximity to the I-215 where LOS E may be permitted.

Policy C-1.4**:** Promote development of local street patterns that unify neighborhoods and work with neighboring jurisdictions to provide compatible roadway linkages at the City limits.

[11] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 3 – Land Use Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/729/03---Land-Use-Element-PDF. Accessed August 5, 2019.

[12] City of Menifee. (2012). *City of Menifee General Plan Vision 2030, Circulation Element*. Retrieved from City of Menifee Website: https://cityofmenifee.us/211/Circulation-Element. Accessed August 5, 2019.

4.13.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section (note that this EIR uses the new CEQA significance thresholds contained in the November 2018 CEQA Guidelines update, which became effective December 28, 2018). Accordingly, the Project will have a significant environmental impact if one or more of the following occurs:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (see Impact 4.13-1);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment? (see Impact 4.13-2); or
- Result in inadequate emergency access (see Impact 4.13-3).

In addition to these CEQA significance thresholds, this EIR addresses the new SB 743 VMT thresholds for informational purposes. Since the City of Murrieta has not yet adopted a VMT significance threshold and this threshold is not in effect until July 1, 2020, the EIR addresses this threshold for informational purposes only.

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning transportation. In addition to PDFs, this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts. Many mitigation measures include a fair share contribution requirement to implement transportation improvements. Fair share generally refers to a project's share of the cost of a given recommended improvement. For the Project, the fair share calculations for a given forecast scenario were estimated by taking the forecasted Project trips and dividing that by the forecasted growth in total trips for a given intersection, averaging the AM and PM peak hours. Actual fair share calculations and/or credits toward fee obligations will be determined by the City of Murrieta as part of the Project's future development review process.

Traffic Study Scenarios

The Project TIA evaluated numerous scenarios including existing conditions, Existing Plus Project Buildout, various interim scenarios for 2023, 2028 and 2031, and Year 2035 at Project Buildout. This EIR section summarizes the TIA findings, focusing on Existing Plus Project and Year 2035 Project Buildout (with ambient background growth and cumulative projects). Refer to the EIR Appendix 9.9.1 for a detailed evaluation of all interim scenarios. In addition, the TIA also evaluates a more conservative "worst-case" analysis of the previous land use plan (the TIA refers to this as the "Proposed Project" although the TIA "Proposed Project" has been superseded by a lower density revised land use plan described in DEIR Section 3, Project Description). The City and applicant made several land use plan modifications in response to stakeholder input, resulting in a slight reduction in overall land use density and corresponding slight reductions in total traffic generation (including peak hour and daily traffic). Although the TIA's

"Environmentally Preferred Project" (which is this DEIR's Proposed Project) would have a slight reduction in traffic impacts, the resultant mitigation requirements are the same (as detailed in TIA Section 22, contained in EIR Appendix 9.9.1).[13] The following traffic analyses are based on the proposed Project unless otherwise noted.

Based on discussions with City of Murrieta staff and City of Menifee staff, the analysis assumes the following modifications to the circulation system for the analysis scenarios (as assumed in the TIA and shown on Exhibit 4.13-6, *Phase 3 – Year 2031 & Forecast Year 2035 Study Area Circulation System & Study Intersection Locations*):

- Forecast Year 2023: The following modifications assumed in the circulation system include:
    - Construction of a new freeway interchange at Keller Road and I-215;
        - An analysis was conducted to evaluate the potential traffic impacts assuming the Keller Road/I-215 interchange is not constructed prior to Year 2023 Project Phase 1 of the MHSPA. Project traffic was re-assigned at a total of ten study intersections and then analyzed under two scenarios: Year 2023 Existing Plus Ambient Growth Plus Project Phase 1 conditions and Year 2023 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Phase 1 conditions.

          According to the *Murrieta Hills Specific Plan – Project Phase 1 Without Keller Road / I-215 Interchange* memo, under the Year 2023 Existing Plus Ambient Growth Plus Project Phase 1 conditions, all of the study intersections are forecast to operate at an acceptable LOS (D or better) assuming the I-215/Keller Road interchange is not constructed prior to Project Phase 1.[14] No new impacts occur as a result of the re-assigned Project Phase 1 traffic at the ten study intersections. Therefore, no mitigation is required which is consistent with the analysis results in the November 2018 TIA.

          Under the Year 2023 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Phase 1 conditions, two intersections were found to operate at deficient LOS (LOS F) assuming the I-215 / Keller Road interchange is not built by Project Phase 1. The two impacted intersections are Int. #3 - Haun Road-Zeiders Road / Scott Road and Int. #7 - Zeiders Road / Keller Road.

          The recommended mitigation measures identified in the "Without Keller Road / I-215 Interchange" analysis at the two impacted intersections are consistent with the mitigation measures recommended in the November 2018 TIA (Mitigation Measures (MM) 7 and 9 below, see pages 4.13-47 and -49). Assuming implementation of the recommended mitigation measures, the traffic impacts at the significantly impacted study intersections are reduced to a level considered less than significant for Year 2023 Existing Plus Ambient Growth Plus Cumulative

[13] The TIA (EIR Appendix 9.9.1) indicates that the Proposed Project (referred to as the "Environmentally Preferred Project" in the TIA) would result in approximately 13,209 daily trips compared to the TIA's "Proposed Project" estimated 17,109 daily trips, a reduction of approximately 3,900 daily trips. The TIA's "Proposed Project" includes an additional 124,146 square feet of commercial use in comparison to the DEIR Project (the TIA's "Environmentally Preferred Alternative.")

[14] MBI. (2019). *Murrieta Hills Specific Plan – Project Phase 1 Without Keller Road / I-215 Interchange Memo*. Carlsbad, CA: MBI. EIR Appendix 9.9.3.

Projects Plus Project Phase 1 conditions without the I-215 / Keller Road interchange constructed.[15] Therefore, no new or alternative mitigation measures are required, if the Keller Road / I-215 interchange is not constructed by Project Phase 1 in Year 2023.

Additionally, the analysis also determined the maximum number of single-family residential dwelling units in Project Phase 1 that could be built without triggering the anticipated impact at the two identified locations. Based on the analysis performed, 180 single-family residential dwelling units could be built before impact is triggered at Int. #3 - Haun Road-Zeiders Road / Scott Road. At Int. #7 - Zeiders Road / Keller Road, 240 single-family residential dwelling units could be built before a significant impact is triggered. Up to 300 single-family residences are proposed for construction during Phase 1. The Project Applicant will provide half-width improvements along the Project frontage at Int. #7, in addition to providing fair share cost toward full improvements at Int. #7 - Zeiders Road / Keller Road, which will provide enhanced access to and from the Project.[16]

  - Reconstruction of I-215 interchange at Scott Road (Phase 1 improvements only);
  - Realignment of Antelope Road and Mapleton Avenue and elimination of the existing Antelope Road / Keller Road intersection (Int. #8);
  - Construction of Clinton Keith Road from Whitewood Road to Trios Valley Road as a four-lane Major roadway; and
  - Construction of McElwain Road from Keller Road to Street "D" as a two-lane Collector.
- Forecast Year 2028: The following modifications assumed in the circulation system include:
  - Construction of Zeiders Road from Scott Road to Keller Road; and
  - Construction of McElwain Road from Keller Road to Street "C" as a four-lane Secondary.
- Forecast Year 2031: The following modifications assumed in the circulation system include:
  - Construction of McElwain Road between Street "D" and Linnel Lane as a two-lane Collector roadway as requested by the City;
  - Construction of Cottonwood Canyon Road north of Bundy Canyon Road as a two-lane Collector roadway;
  - Construction of Warm Springs Parkway from Keller Road to Clinton Keith Road as a four-lane Major roadway which causes the construction of the Warm Springs Parkway / Linnel Lane intersection (Int. #23) and Warm Springs Parkway / Clinton Keith Road (Int. #24); and
  - Elimination of Antelope Road which would cause elimination of the Antelope Road / Baxter Road (Int. #11).

[15] MBI. (2019). *Murrieta Hills Specific Plan – Project Phase 1 Without Keller Road / I-215 Interchange Memo*. Carlsbad, CA: MBI. EIR Appendix 9.9.3.

[16] MBI. (2019). *Murrieta Hills Specific Plan – Project Phase 1 Without Keller Road / I-215 Interchange Memo.* Carlsbad, CA: MBI. EIR Appendix 9.9.3.

- Forecast Year 2035: Forecast year 2035 assumes the General Plan Circulation Element roadway system and intersection geometry including the following modifications to the study area circulation system:
    - Full buildout of the I-215 interchange at Scott Road.

Table 4.13-3 below provides detailed information on roadway network improvements assumed throughout the analysis. The TIA identifies mitigation measures required to mitigate all Project and cumulative impacts to less than significant levels. The Project will either construct or pay a fair share of all improvements within the City of Murrieta to fully mitigate Project impacts. However, even with the Project Applicant's fair share contribution to implement the identified mitigation measures, timing for full funding and construction of the contemplated improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) is not certain or guaranteed. The EIR deems this a potentially unavoidable significant impact, as discussed further below under Mitigation Measures.

Table 4.13-3: Assumed Study Area Roadway Network Improvements

Location	Assumed Improvement	Funding Status
Phase 1 – Year 2023		
I-215 at Keller Road	Construction of a new freeway interchange with multi-lane roundabouts at Keller Road. Refer to Appendix B in the TIA located in EIR Appendix 9.9.1 for conceptual layouts.	**Partially funded (approx. 40%)**. Construction scheduled to begin in Year 2020 with completion in Year 2022[17,18].
I-215 at Scott Road (Phase 1 of 2)	Reconstruction of a new freeway interchange – Phase 1 improvements only including: ▪ Northbound on-ramp will be realigned and widened to three lanes with HOV metering. ▪ New northbound off-ramp loop will provide continuous movement to traffic traveling westbound on Scott Road. ▪ Widen and realignment of existing northbound off-ramp, dedicated to eastbound traffic onto Scott Road. ▪ New southbound on-ramp loop will provide freeway access for traffic traveling westbound on Scott Road. ▪ Widen existing southbound on-ramp dedicated to traffic traveling eastbound on Scott Road. ▪ Widen and realign existing southbound off-ramp. Refer to TIA Appendix B in EIR Appendix 9.9.1 for conceptual layouts.	Currently Under Construction (estimated completion in Spring of 2020)
Antelope Road / Keller Road	Realignment of Antelope Road and Mapleton Avenue and elimination of the existing Antelope Road / Keller Road intersection.	**Partially funded** since the realignment is part of the I-215 / Keller Road interchange project.
Clinton Keith Road from Whitewood Road to Trios Valley Road	Construct as a four-lane Major Roadway.	Currently Under Construction (estimated completion in 2019)
Phase 2 – Year 2028		
Zeiders Road from Scott Road to Keller Road	Construct as a two-lane Collector.	Recently completed in Fall of 2018.

[17] City of Murrieta. (ND). *Capital Improvement Plan, Fiscal Year 2018-2019 to Fiscal Year 2022-2023*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/ArchiveCenter/ViewFile/Item/75. Accessed September 17, 2019.

[18] City of Menifee. (2019). *Capital Improvement Program, Fiscal Years 2019-2024*. Retrieved from City of Menifee Website: https://cityofmenifee.us/DocumentCenter/View/8224/FY2019-20-thru-FY2023-24-. Accessed September 17, 2019.

Location	Assumed Improvement	Funding Status
Phase 3 – Year 2031		
Cottonwood Canyon Road north of Bundy Canyon Road	Construct as a two-lane Collector.	**No current funding** per discussion with City of Wildomar staff. This assumption has little to no effect on traffic operations or analysis results in the TIA.
Warm Springs Parkway from Keller Road to Clinton Keith Road	Construct as a four-lane Major which results in the construction of the Warm Springs Parkway / Linnel Lane intersection (Int. #23) and Warm Springs Parkway / Clinton Keith Road intersection (Int. #24).	CIP Project for a portion of Warm Springs Parkway (1,200 feet north of Clinton Keith Road), the remainder is **unfunded**.
Year 2035 - Buildout		
I-215 at Scott Road (Phase 2 of 2)	Full buildout of the freeway interchange to provide an 11-lane bridge (including dual eastbound left-turn lanes). Widen the Scott Road eastbound to southbound on-ramp. Widen the northbound to eastbound Scott Road off-ramp. Refer to TIA Appendix B located in EIR Appendix9.9.1 for conceptual layouts.	**No current funding.**

Traffic Study Summary

As shown below, ***the TIA identifies mitigation measures to reduce all Project impacts to less than significant levels*** for all scenarios evaluated in the TIA. However, even with the Project's fair share contribution toward required future improvements, timing for full funding and construction of the contemplated improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed. Therefore, because of the uncertainty surrounding the full funding and construction of improvements that are not under the control of the City of Murrieta, certain impacts are considered potentially significant and unavoidable. See Mitigation Measures section below for further discussion.

Intersection Analysis and Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection. The Highway Capacity Manual (HCM) analysis methodology is utilized to determine the operating LOS of the study intersections. The 2010 HCM analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding ranges of stopped delay experienced per vehicle for signalized and unsignalized intersections shown in Table 4.13-4, *Intersection LOS and Delay Ranges*. HCM analysis methodology is utilized in this study for the study intersections.

Table 4.13-4: Intersection LOS and Delay Ranges

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	< 10.0	< 10.0
B	> 10.0 to < 20.0	> 10.0 to < 15.0
C	> 20.0 to < 35.0	> 15.0 to < 25.0
D	> 35.0 to < 55.0	> 25.0 to < 35.0
E	> 55.0 to < 80.0	> 35.0 to < 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board. (2010). *Highway Capacity Manual 2010.*

LOS is based on the average stopped delay per vehicle for all movements of signalized intersections and all-way stop-controlled intersections; for one-way or two-way stop-controlled intersections, LOS is based on the worst stop-controlled approach.

INTERSECTION PEAK HOUR PERFORMANCE CRITERIA

In accordance with the Murrieta GP and the Menifee GP, the acceptable peak hour LOS for intersections is LOS E or better at freeway interchanges and intersections in close proximity to I-215, such as Haun Road / Scott Road and the Antelope Road / Scott Road. The acceptable peak hour LOS at all other intersections is LOS D or better.[19, 20]

INTERSECTION THRESHOLDS OF SIGNIFICANCE

Consistent with the County of Riverside, the City of Murrieta and City of Menifee utilize the following criteria to determine whether the addition of project-generated trips is forecast to result in a significant impact, and thus requires mitigation:

- The acceptable LOS shall be maintained with the addition of traffic from the proposed project. The analysis shall identify mitigation measures to achieve acceptable LOS.
- For General Plans and Specific Plans, the analysis shall determine whether the ultimate circulation system planned for the area will be adequate to provide an acceptable LOS. The analysis shall identify mitigation measures to achieve acceptable LOS.

Roadway Segment Analysis Methodology

Roadway segments are evaluated by comparing ADT volumes to roadway capacity. The capacity of roadway segments is affected by a number of factors, including street width, roadway segment design, number of travel lanes, number of intersections and driveways, presence of on-street parking, and traffic signal timings. Roadway segment operation is described using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions) based on comparing ADT volumes to roadway capacity and utilizing the volume-to-capacity (V/C) ratios shown in Table 4.13-5.

Table 4.13-5: Roadway Segment LOS and Delay Ranges

LOS	Roadway Segment Volume-to-Capacity Ratio
A	0.00 – 0.60
B	> 0.60 – 0.70
C	> 0.70 – 0.80
D	> 0.80 – 0.90
E	> 0.90 – 1.00
F	> 1.00

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 8. Table 2. EIR Appendix 9.9.1.

ROADWAY SEGMENT PERFORMANCE CRITERIA

In accordance with the Murrieta GP and Menifee GP, the acceptable LOS for roadway segment operation is LOS C or better.

[19] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element*. Page. 5-9. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed September 17, 2019.

[20] City of Menifee. (ND). *Circulation Element Background Document & Definitions*. Page 3. Retrieved from City of Menifee Website: https://cityofmenifee.us/DocumentCenter/View/1045/3_Circulation_Background-Document_HD0913?bidId=. Accessed September 17, 2019.

ROADWAY SEGMENT THRESHOLDS OF SIGNIFICANCE

Consistent with the County of Riverside, the City of Murrieta and City of Menifee utilize the following criteria to determine whether the addition of project-generated trips is forecast to result in a significant impact, and thus requires mitigation:

- The acceptable LOS shall be maintained with the addition of traffic from the proposed project. The analysis shall identify mitigation measures to achieve acceptable LOS.
- For General Plans and Specific Plans, the analysis shall determine whether the ultimate circulation system planned for the area will be adequate to provide an acceptable LOS. The analysis shall identify mitigation measures to achieve acceptable LOS.

PROJECT DESIGN FEATURES

- The Project has substantially reduced overall density from the previously approved Specific Plan to the current proposal by approximately 50 percent, resulting in substantial reduction in traffic and vehicle miles traveled.
- The Project Applicant modified the land use plan following the Notice of Preparation distribution, resulting in a reduction in total traffic and vehicle miles traveled, as noted in EIR Appendix 9.9.2.
- The Project site is near local and regional access routes, reducing the travel time to local City streets during construction and operations;
- Multiple Project access points exist along Keller Road, providing direct access to multiple Planning Areas (PAs).
- The McElwain Road extension allows access from the site's southern boundary to other portions of the City of Murrieta and an alternative route to I-215.
- Project improvements to local streets will reduce emergency services response times.
- The Project includes an approximately 18-acre commercial site (PA 9) and an approximately 13-acre mixed-use planning area (PA 8) that will provide convenient shopping and services for Project area residents, therefore reducing vehicle trips.

4.13.5 IMPACTS AND MITIGATION MEASURES

Impact 4.13-1: Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Level of Significance: Potentially Significant and Unavoidable Impact *(for physical improvements at locations that are either unfunded or in other jurisdictions)*

CONSTRUCTION

The Project site is currently vacant and does not offer any authorized roadway, pedestrian, bicycle, or public transit facilities. Construction of the Project would provide an improved Keller Road roadway facility; a north-south connection between Murrieta and Menifee, west of I-215, via the McElwain Road extension; and an internal Murrieta Hills roadway network. In support of the proposed I-215/Keller Road interchange, a separate project, the MHSPA Project is dedicating right-of-way from the southwest corner of the intersection for the proposed interchange.

Goals and policies from the Land Use and Circulation elements of the Murrieta GP which pertain to the circulation system are described below in Table 4.13-6, *General Plan Consistency*.

Table 4.13-6: General Plan Consistency

General Plan Policy [1]	Project Consistency
LAND USE ELEMENT	
Goal LU-9: Land use patterns and urban design that support healthy and sustainable lifestyles and businesses.	
Policy LU-9.2: Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial, mixed-use or transit-oriented development areas.	**Consistent:** Murrieta Hills will be a walkable community, with sidewalks bordering all neighborhood streets, and walking paths, connecting the residential, open space, commercial, and mixed-use PAs. Pedestrian accessibility between residential PAs and open space and mixed-use/commercial PAs is proposed, thereby allowing for a reduction in vehicle miles traveled to obtain goods and services and participate in outdoor recreational activities. Monumentation, landscaping, and creative lighting, among other features, will create an inviting pedestrian-friendly environment.
Policy LU-9.3: Encourage new neighborhoods to be built on a pedestrian-scale, within walking distance of parks, neighborhood-serving commercial areas, and other neighborhood amenities.	
CIRCULATION ELEMENT	
Goal CIR-1: A circulation system that serves the internal circulation needs of the City, while also addressing the inter-community or through travel needs.	
Policy CIR-1.1: Ensure the transportation system can adequately serve the concentrations of population and employment activities identified by the Land Use Element. **Policy CIR-1.2:** Maintain a Level of Service "D" or better at all intersections during peak hours. Maintain a Level of Service "E" or better at freeway interchanges during peak hours. **Policy CIR-1.3:** Maintain an average daily traffic (ADT) Level of Service "C" or better for all roadway segments. As an exception, LOS "D" may be allowed in the North Murrieta Business Corridor, Clinton Keith/Mitchell, Golden Triangle North (Central Murrieta), South Murrieta Business Corridor, or the Multiple Use 3 Focus Areas, or other employment centers. LOS "D" may be allowed only at intersections of any combination of Secondary roadways, Major roadways, Urban Arterial roadways, Expressways, conventional state highways, or freeway ramps.	**Consistent:** See detailed analysis below and the Project's Traffic Impact Assessment (EIR Appendix 9.9.1), which demonstrates that the Project will not significantly impact the local transportation system, with implementation of recommended mitigation measures.
Goal CIR-2: A comprehensive circulation system that promotes safety.	
Policy CIR-2.3: Provide a circulation network that accommodates the safe and efficient movement of all forms of non-motorized travel. **Policy CIR-2.4:** Ensure new roadways and intersections provide adequate sight distances for safe vehicular movement.	**Consistent:** See detailed analysis below and the Project's Traffic Impact Assessment (EIR Appendix 9.9.1), which demonstrates that the Project will provide a safe and efficient on-site circulation system and will not significantly impact safety at off-site roadways.

Table 4.13-6: General Plan Consistency

General Plan Policy [1]	Project Consistency
Policy CIR-2.14: Ensure that efficient and safe access for emergency vehicles is provided to all development.	
Goal CIR-3: Circulation systems that preserve the quality of residential neighborhoods.	
Policy CIR-3.2: Review the design of all proposed new residential neighborhoods to ensure that "cut through" routes are minimized, and pedestrian connections are maximized.	**Consistent:** The proposed street and sidewalk network will complement the Project area's topography and natural setting, connecting the nine PAs. Strategic roadway connections allow for smooth circulation. Implementation of efficient and current low-impact development strategies, including landscaped median swales and continuous tree placement, will contribute to the natural aesthetic of Murrieta Hills. In addition, improvements will be made along Keller Road to accommodate project traffic and avoid disturbance to adjacent communities. McElwain Road will be extended northerly from Linnel Lane to Keller Road at Zeiders Road to improve local connections and traffic circulation. Essentially, Keller Road and McElwain Road will provide the only opportunities or locations for potential "cut through" traffic. Neither of these streets traverse residential PAs. Keller Road comprises the northern boundary of the Project area and McElwain Road will provide a separation between the single-family residentials PAs and the mixed-use and commercial PAs. Refer to Goal LU-9 above regarding the abundance of pedestrian connections.
GOAL CIR-6: Alternative travel modes and facilities are available to serve residents and employers/employees and reduce vehicle miles traveled.	
Policy CIR-6.1: Encourage alternatives to single-occupancy vehicle transportation such as rail, public transit, paratransit, walking, cycling, and ridesharing.	**Consistent:** Murrieta Hills will be a walkable community, with sidewalks bordering all neighborhood streets, and walking paths, connecting the residential, open space, commercial, and mixed-use PAs. Pedestrian accessibility between residential PAs and open space and mixed-use/commercial PAs is proposed. Additionally, designated bike lanes will be provided along portions of McElwain Road and Keller Road. Local, or interior, streets will have wide shoulders (eight to 10-feet wide) or extra wide travel lanes (16-feet wide) which may accommodate bicyclists. Walkways/bikeways will also be provided at various locations, providing interior access between various PAs and open space/recreational areas.

Table 4.13-6: General Plan Consistency

General Plan Policy [1]	Project Consistency
Policy CIR-6.7: Coordinate with the Riverside Transit Agency to provide fixed route transit service along transportation corridors connecting to employment and commercial areas, schools, health care facilities, and major recreation areas.	**Consistent:** While not presently located adjacent to mass transit, the Project area will include the extension of the existing McElwain Road. This will create a better connection between the cities of Murrieta and Menifee. Prior to or upon Project completion, the City will coordinate with the RTA to incorporate a new bus stop in the Project area into an existing bus route. The closest available RTA route is Route 61. Residents may board RTA Route 61 at Stop ID 3345, located just south of the intersection of Linnel Lane and McElwain Road (by Super Target). Other nearby stops are at the Loma Linda University Medical Center – Murrieta and associated professional office building, Kaiser Permanente medical facility, and Oak Meadows Elementary School. The closest Metrolink station is the Perris – South station; approx. 11 miles north of the Project via I-215 and Case Road in Perris. Project area residents could board. the 91/Perris Valley Line, or Blue Line, in Perris and access the vast southern California Metrolink network. Residents may board. RTA Route 61 at Stop ID 3345 and take the bus to the Perris – South Metrolink Station.
Policy CIR-6.9: Work with the Riverside Transit Agency to evaluate bus stops locations and amenities. Encourage the incorporation of transit amenities such as bus shelters and benches into existing and new bus stop locations.	
Goal CIR-7: Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.	
Policy CIR-7.1: Encourage future developments to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences.	**Consistent:** Refer to Goal LU-9 and Goal CIR-6 above regarding the abundance of pedestrian/bicycle accommodations. All pedestrian sidewalks and ramps proposed for the Project will comply with ADA requirements. Landscaped walkways will be incorporated into the circulation design of the Project. Landscaped park areas, such as the neighborhood and pocket parks, will be created as well. Park amenities will include seating areas, shade trellises/structures or tree groves, picnic tables, and play areas, among others.
Policy CIR-7.3: Encourage safe pedestrian walkways and ensure compliance with the Americans with Disabilities Act (ADA) requirements within all developments.	
Policy CIR-7.5: Provide pedestrian amenities such as benches, trees, landscaping, and shade trees to encourage people to walk to destinations.	
GOAL CIR-8: Development, expansion, and maintenance of a network of bicycle, pedestrian, and multi-use trails that allows residents to travel between parks, schools, neighborhoods, and other major destinations without driving.	
Policy CIR-8.2: Promote bicycle and pedestrian trails along major home to work and other travel routes.	**Consistent:** Refer to Refer to Goal LU-9 and Goal CIR-6 above regarding the abundance of pedestrian/bicycle accommodations and connections.
Policy CIR-8.3: Consider roadway design guidelines for new development and for capital improvement plans that enhance bicycle and pedestrian connectivity and safety.	
Policy CIR-8.8: When different uses are developed adjacent to each other – such as new commercial	

Table 4.13-6: General Plan Consistency

General Plan Policy [1]	Project Consistency
adjacent to new residential – require them to provide high-quality pedestrian amenities and connections between each other to the greatest degree possible.	
Policy CIR-8.9: Create cyclist and pedestrian connections through cul-de-sacs and across other barriers, connecting neighborhoods with each other and the citywide trail system. When feasible, consider purchasing easements across private land for priority pedestrian connections.	
Source: City of Murrieta. (2011). *City of Murrieta General Plan 2035*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/303/General-Plan-2035. Accessed September 17, 2019.	

As demonstrated in the above table, the Project's circulation elements will be consistent with the Murrieta GP elements pertaining to the circulation system, including transit, roadway, bicycle and pedestrian facilities.

However, it should be noted that the on-site portion of the McElwain Road extension is not currently shown on Murrieta GP Circulation Element's Circulation Map[21] because the Project site is currently located in unincorporated Riverside County. Nor is the McElwain Road extension included on the *Sun City/Menifee Area Plan*, Figure 6 – Circulation[22] or Figure C-1 – Circulation Plan of the *County of Riverside General Plan's Circulation Element*.[23] Modification of the Circulation Element of the Murrieta GP to include the portion of McElwain Road through the MHSPA area to Linnel Lane will occur as part of the Project's General Plan Amendment. Therefore, the impact would be less than significant with mitigation. In addition, as discussed in Section 4.3, *Biological Resources*, the proposed McElwain Road extension required a minor amendment to the MHSCP, which was approved by the RCA (see EIR Appendix 9.3.4).

Off-Site Construction Impacts

The Project proposes the extension of McElwain Road from Linnel Lane northward to Keller Road at Zeiders Road. Off-site transportation improvements associated with the Project were compared to the following Project area transportation planning maps for consistency:

- **Murrieta GP 2035 Exhibit 5-10 – Circulation Map:** This exhibit shows McElwain Road from Clinton Keith Road to the City of Murrieta boundary (southern Project area boundary) as a Secondary Highway. Per City standards, the curb-to-curb width of a Secondary Highway is 64 feet and the ROW width is 88 feet. The typical section for a Secondary Highway shows two 11-foot wide travel lanes in each direction separated by a 10-foot wide at-grade median. Five-foot wide bike lanes

[21] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 5: Circulation Element*. *Exhibit 5-10: General Plan 2035 Circulation Map*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Accessed September 18, 2019.

[22] Riverside County Planning Department. (2016). *Sun City/Menifee Valley Area Plan, Figure 6 – Sun City/Menifee Are Plan Circulation*. Page 29. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/areaplans/SCMVAP_121316.pdf?ver=2017-10-06-094255-673. Accessed August 7, 2019.

[23] Riverside County Planning Department. (2017). *County of Riverside General Plan Circulation Element Figure C-1: Circulation Plan*. Page C-11. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch04_Circulation_121217.pdf. Accessed August 7, 2019.

are located adjacent the outside travel lanes. A seven-foot wide buffer separates the travel/bike lanes from five-foot wide sidewalks along the outside of both sides of the roadway.[24]

According to *Figure 5-2 – Roadway Cross Sections* of the MHSPA, this off-site section of McElwain Road, extending from the southern boundary of the Project area to Linnel Lane, is described as a Modified Collector with a ROW width of 88 feet. The road will feature two 12-foot-wide travel lanes and an eight-foot-wide paved shoulder on both sides of the road. An additional 24-foot wide area on both sides of the roadway for slopes and ROW, inclusive of a minimum 20-foot wide fuel modification zone along both sides of the roadway, will be provided (see Exhibit 4.3-10, *Fuel Modification Plan*).

While the proposed typical section is not consistent with the ROW described on the Murrieta GP Circulation Map, the reduction in the pavement footprint of this segment of McElwain Road is warranted to avoid or reduce impacts to the adjacent open space and sensitive resources.

- **Murrieta General Plan 2035 Exhibit 5-1 – Trails and Bikeways[25]:** This exhibit shows McElwain Road from Clinton Keith Road to the city limit (southern Project area boundary) as having a Class II Proposed On-Road Striped Bike Lane.

  According to *Figure 5-2 – Roadway Cross Sections* of the Specific Plan, this off-site section of McElwain Road, extending from the southern boundary of the Specific Plan area to Linnel Lane, will feature two 12-foot-wide travel lanes and an eight-foot-wide paved shoulder on both sides of the road.

  While the proposed typical section is not consistent with what is shown on the Murrieta GP Circulation Map, the reduction in the pavement footprint of this segment of McElwain Road is warranted to avoid or reduce impacts to the adjacent open space and sensitive resources. However, the eight-foot wide shoulders may accommodate bicycles on the roadway.

While the off-site improvements aren't currently consistent with City of Murrieta planning documents, an amendment to the Murrieta GP will be processed as part of the MHSPA. Modification of the Circulation Element of the Murrieta GP to include the portion of McElwain Road through the MHSPA area to Linnel Lane will occur as part of the General Plan Amendment. Therefore, the impact would be less than significant with mitigation.

OPERATIONS

Project consistency with Murrieta GP policies are described in Table 4.13-6, *General Plan Consistency.* A detailed analysis of the Project's impacts upon local intersection, road segment and freeway ramps is provided in the following discussion. As shown below, ***the TIA identifies mitigation measures to reduce all Project impacts to less than significant levels*** for all scenarios evaluated in the TIA. However, even with the Project's fair share contribution toward required future improvements, full funding and construction of the mitigation measure's improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed and is therefore

[24] City of Murrieta. (2010). *Section 100 Typical Street Sections, Std. No. 104 Secondary Highway*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/368/100---Typical-Street-Sections-PDF?bidId=. Page 8.

[25] City of Murrieta. (2011). *Murrieta General Plan Circulation Element Exhibit 5-1: Trails and Bikeways*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/731/05---Circulation-Element-PDF. Page 5-33.

considered a potentially significant and unavoidable impact. See Mitigation Measures section below for further discussion.

Traffic Impact Analysis

Consistent with the analyses conducted for the Circulation Element of the Murrieta GP and Menifee GP, the below analysis utilizes Level of Service (LOS) criteria to determine the significance of Project-generated trip impacts and whether mitigation is required. Phase 1 is planned to open in year 2023. Phase 2 is planned to open in year 2028, and Phase 3 is planned to open in year 2031.

PROJECT FORECAST TRIP GENERATION

Forecast trip generation for the Project is based on scoping discussions with the City of Murrieta and the approved scoping agreement. To calculate trips forecast to be generated by the Project, Institute of Transportation Engineers (ITE) trip generation rates were utilized. Table 4.13-7 summarizes the ITE trip generation rates used to calculate the number of trips forecast to be generated by the Project.

Table 4.13-7: ITE Trip Generation Rates for Project Land Uses

Land Use (*ITE* Code)	Units	AM Peak Hour Trip Generation Rate			PM Peak Hour Trip Generation Rate			Daily Trip Generation Rate
		In	Out	Total	In	Out	Total	
Single-Family Detached Residential (210)	du	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Residential Condominium/Townhouse (230)	du	0.07	0.37	0.44	0.35	0.17	0.52	5.81
Retail (820)	tsf	0.60	0.36	0.96	1.78	1.93	3.71	42.70

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 14. Table 4. EIR Appendix 9.9.1.; *2012 ITE Trip Generation Manual, 9th Edition.*
Note: tsf = thousand square feet; du = dwelling unit.

PASS-BY TRIP ADJUSTMENT

As documented in ITE's *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012), a pass-by trip reduction is applicable to retail land uses located along busy arterial highways attracting vehicle trips already on the roadway; this is particularly the case when the roadway is experiencing peak operating conditions. For example, a motorist already traveling along Keller Road or Zeiders Road between work and home or other destinations may stop at the Project site. A pass-by discount under this example would reduce/eliminate both the inbound trip and outbound trip from the surrounding roadway circulation system since the vehicle was already traveling on the roadway. Without the pass-by trip discount, two trips would be generated: an inbound trip to the Project site, and an outbound trip from the Project site.

Table 4.13-8 summarizes the pass-by trip reductions applicable to the Project land uses based on discussions with City of Murrieta staff.

Table 4.13-8: Project Pass-by Trip Reduction Percentage

Proposed Project Land Use	AM Peak Hour	PM Peak Hour	Daily
Retail	25%	25%	25%
Single-Family Detached Residential	0%	0%	0%
Residential Condominium/Townhouse	0%	0%	0%
Source: MBI. (2018). *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 14. Table 5. EIR Appendix 9.9.1.			

ITE INTERNAL TRIP CAPTURE ADJUSTMENTS

As documented in ITE's *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012), an internal trip capture reduction is applicable when a Project site has more than one destination (such as the Project), in which a person visits more than one destination on-site during the same visit.

Consistent with industry standards, internal trip capture for each of the Project phases have been calculated as directed in *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012). This analysis conservatively only assumes internal trip capture discounts between the retail land use and the condominium/townhouse land use for the Project and does not include the single-family detached residential land use component in calculating the internal trip capture discounts for the Project. Table 4.13-9 shows the internal capture rates utilized in the analysis for each Phase of the Project.

Table 4.13-9: ITE Internal Trip Capture Percentages for Project

ITE Internal Trip Capture Percentage			
Project Phase	**AM Peak Hour**	**PM Peak Hour**	**Daily**
Project Phase 1	0%	0%	0%
Project Phases 1 and 2	0%	5%	4%
Project Buildout	0%	5%	4%
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 15. Table 6. EIR Appendix 9.9.1.			

The Project is planned to be constructed in three phases. Table 4.13-10 below summarizes the trip generation of Project Phase 1 utilizing the ITE trips rates contained in Table 4.13-7, the applicable pass-by trip adjustments contained in Table 4.13-8, and the applicable ITE internal trip capture adjustments contained in Table 4.13-9. Up to 300 single-family residential units are planned for development in Phase 1.

Table 4.13-10: Forecast Trip Generation of Project Phase 1

Land Use	AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips
	In	Out	Total	In	Out	Total	
300-du Single-Family Detached Residential	57	168	225	189	111	300	2,856
Project Phase 1 Total	**57**	**168**	**225**	**189**	**111**	**300**	**2,856**
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 15. Table 7. EIR Appendix 9.9.1.							

As shown in Table 4.13-10 above, the Project Phase 1 is forecast to generate approximately 2,856 daily trips, which include approximately 225 a.m. peak hour trips and approximately 300 p.m. peak hour trips.

Table 4.13-11 below summarizes the trip generation of Project Phases 1 and 2 utilizing the ITE trips rates contained in Table 4.13-7, the applicable pass-by trip adjustments contained in Table 4.13-8, and the applicable ITE internal trip capture adjustments contained in Table 4.13-9. Phase 1 would introduce up to 300-single family detached dwelling units; Phase 2 would introduce 257 single-family detached dwelling units and 193 multi-family dwelling units. The total proposed number of combined Phase 1 and Phase 2 dwelling units is 750.

Table 4.13-11: Forecast Trip Generation of Project Phases 1 and 2

Land Use	AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips
	In	Out	Total	In	Out	Total	
111,078 tsf Retail	66	41	107	198	214	412	4,743
ITE Internal Trip Capture (5% PM, 4% ADT)	0	0	0	-10	-11	-21	-190
Retail after Internal Trip Capture Adjustment	66	41	107	188	203	391	4,553
Pass-by Trip Reduction (25% AM and PM, 25% ADT)	-17	-10	-27	-47	-51	-98	-1,138
Subtotal Retail	*50*	*30*	*80*	*141*	*152*	*293*	*3,415*
193 du Residential Condominium/Townhouse (Phase 2)	14	70	84	67	33	100	1,121
ITE Internal Trip Capture (5% PM, 4% ADT)	0	0	0	-3	-2	-5	-45
Subtotal Residential Condominium/Townhouse	*14*	*70*	*84*	*64*	*31*	*95*	*1,076*
557 du Single-Family Detached Residential (Phase 1 – 300 du and Phase 2 – 257 du)	*105*	*313*	*418*	*351*	*206*	*557*	*5,303*
Project Phases 1 and 2 Total	**169**	**414**	**583**	**556**	**389**	**945**	**9,794**

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 93. Table 63. EIR Appendix 9.9.1.

As shown, the Project Phases 1 and 2 are forecasted to generate approximately 9,794 daily trips, which includes approximately 583 a.m. peak hour trips and approximately 945 p.m. peak hour trips.

Table 4.13-12 below summarizes the trip generation of the Project Phases 1, 2, and 3 (Project buildout) utilizing the ITE trips rates contained in Table 4.13-7, the applicable pass- by trip adjustments contained in Table 4.13-8, and the applicable ITE internal trip capture adjustments contained in Table 4.13-9. As shown, the Project at full buildout is forecasted to generate approximately 13,209 daily trips, which include approximately 663 a.m. peak hour trips and approximately 1,239 p.m. peak hour trips.

Table 4.13-12: Forecast Trip Generation of Phases 1,2,3 (Project Buildout)

Land Use	AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips
	In	Out	Total	In	Out	Total	
222.156 tsf Retail	132	81	213	396	428	824	9,486
ITE Internal Trip Capture (5% PM, 4% ADT)	0	0	0	-20	-21	-41	-379
Retail after Internal Trip Capture Adjustment	132	81	213	376	407	783	9,107
Pass-by Trip Reduction (25% AM and PM, 25% ADT)	-33	-20	-53	-94	-102	-196	-2,277
Subtotal Retail	*99*	*61*	*160*	*282*	*305*	*587*	*6,830*
193 du Residential Condominium/Townhouse	14	71	85	67	33	100	1,121
ITE Internal Trip Capture (5% PM, 4% ADT)	0	0	0	-3	-2	-5	-45
Subtotal Residential Condominium/Townhouse	*14*	*71*	*85*	*64*	*31*	*95*	*1,076*
557 du Single Family Detached Residential	*105*	*313*	*418*	*351*	*206*	*557*	*5,303*
Project Phases 1, 2, and 3 Trip Generation	**218**	**445**	**663**	**697**	**542**	**1,239**	**13,209**

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 93. Table 64. EIR Appendix 9.9.1.

Note that the TIA (EIR Appendix 9.9.1) also evaluates a previous land use plan that included an additional 124,146 square feet of commercial use, and that even with the substantial increase in commercial square footage, the TIA identifies improvements to mitigate all significant impacts.

EXISTING PLUS PROJECT BUILDOUT TRAFFIC IMPACTS

Forecast Trip Distribution and Assignment

This section analyzes the potential traffic impact of the addition of trips forecast to be generated by Project buildout to existing conditions traffic volumes at the study intersections. Trip distribution for the Project is based on the Riverside Traffic Analysis Model (RivTAM) select zone runs for the Project.[26] It is important to note that the "Existing Plus Project Buildout" analysis assumes the **existing roadway network configuration** which limits the routing options of Project-related traffic as well as area background traffic. Trip distribution is shown on Exhibit 4.13-7, *Forecast Existing Plus Project Trip Percent Distribution of Proposed Project (Residential Component)* and Exhibit 4.13-8, *Forecast Existing Plus Project Trip Percent Distribution of Proposed Project (Retail Component)*.

This is a worst-case scenario that identifies improvements necessary to mitigate Project impacts back to pre-Project conditions and does not include known future roadway improvements such as the Keller Road/I-215 interchange.

In reality, the study area roadway network will be changing substantially over time including:

- The planned extension of McElwain Road between Keller Road and Linnel Lane (by 2023);
- The programmed construction of the Keller Road / I-215 interchange (by 2023); and
- The planned re-alignment of Antelope Road in conjunction with the new interchange construction at Scott Road (by 2023).

These roadway network changes would have a substantial effect on the re-distribution of Project trips during the phased construction periods of the Project. The actual definition of Project impacts and the identification and timing of required mitigation measures are presented in the Project Phasing Analysis that has been performed for years 2023, 2028, 2031 and 2035 (refer to analysis below and EIR Appendix 9.9.1 for detailed discussion). Besides the Existing Plus Project Buildout scenario below, this EIR section includes the Year 2035 Project Buildout (Plus Ambient Growth and Cumulative Projects) as future scenario.

Forecast Existing Plus Project Buildout Conditions Traffic Volumes

Based on the trip generation and trip distribution noted above, the Project's AM and PM peak hour trips for the Existing Plus Project Buildout condition are shown on Exhibits 4.13-9 and 4.13-10, with resultant buildout AM and PM peak hour volumes shown on Exhibits 4.13-11 and 4.13-12. As shown in Table 4.13-13 below, the following five study intersections are forecast to operate at a deficient LOS (LOS E or F) according to agency performance criteria for forecast existing plus Project buildout conditions:

[26] RIVTAM was developed by the County of Riverside Transportation Department (RCTD), with the cooperation of WRCOG, CVAG, RCTC, SCAG and Caltrans, which completed the development of RIVTAM in May 2009. RIVTAM is a TransCAD model, based on SCAG's Regional Transportation Model that it used in developing the 2035 Regional Transportation Plan (2008 RTP). TransCAD is the name of a commercially available software package used for transportation system modeling by many agencies in the United States and abroad. Riverside County. (2015). *County of Riverside Environmental Impact Report No. 521, Section 4.18: Transportation and Circulation*. Page 4.18-45. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/04-18_TransportationAndCirculation.pdf. Accessed September 17, 2019.

- Intersection 1 – Sunset Avenue-Cottonwood Canyon Road / Bundy Canyon Road located in the cities of Wildomar and Menifee (p.m. (LOS E) peak hour only);
- Intersection 2 - Murrieta Road / Scott Road located in the City of Menifee (both a.m. (LOS F) peak hour and p.m. (LOS F) peak hour);
- Intersection 3 – Haun Road-Zeiders Road / Scott Road located in the City of Menifee (both a.m. (LOS F) peak hour and p.m. (LOS E) peak hour);
- Intersection 6 - Antelope Road / Scott Road located in the cities of Menifee and Murrieta (a.m. (LOS E) peak hour only); and
- Intersection 7 - Zeiders Road / Keller Road located in the cities of Menifee and Murrieta (p.m. (LOS F) peak hour only).

Table 4.13-13: Forecast Existing Plus Project Buildout Conditions AM and PM Peak Hour Study Intersection LOS

Study Intersection	Traffic Control	AM Peak Hour Delay – LOS	PM Peak Hour Delay – LOS	Significant Impact?
1. Sunset Ave - Cottonwood Canyon Rd. / Bundy Canyon Rd.[1]	Two-Way Stop	26.3– D	**39.8 – E**	**Yes**
2. Murrieta Rd. / Scott Rd.[1]	All-Way Stop	**>50.0 – F**	**>50.0 – F**	**Yes**
3. Haun Rd. - Zeiders Rd. / Scott Rd.[1]	Signal	**>80.0 – F**	**62.0 – E**	**Yes**
4. I-215 SB Ramps / Scott Rd.[2]	Signal	30.3 – C	38.8 – D	No
5. I-215 NB Ramps / Scott Rd.[2]	Signal	40.2 – D	48.9 – D	No
6. Antelope Rd. / Scott Rd.[1]	Signal	**60.5 – E**	50.4 – D	**Yes**
7. Zeiders Rd. / Keller Rd.[1]	Two-Way Stop	24.4 – C	**>50.0 – F**	**Yes**
8. Antelope Rd. / Keller Rd.[2]	Signal	30.6 – C	29.9 – C	No
9. Mapleton Ave / Keller Rd.[2]	One-Way Stop	12.9 – B	13.9 – B	No
10. Menifee Rd. / Keller Rd.[2]	Signal	15.5 – B	16.6 – B	No
11. Antelope Rd. / Baxter Rd.[2]	Signal	24.1 – C	28.8 – C	No
12. Warm Springs Pkwy / Baxter Rd.[2]	Signal	34.4 – C	30.9– C	No
13. Whitewood Rd. / Baxter Rd.[2]	Signal	14.8 – B	14.0 – B	No
14. McElwain Rd. / Linnel Ln[2]	All-Way Stop	13.6 – B	13.8 – B	No
15. Whitewood Rd. / Linnel Ln[2]	Signal	16.4 – B	13.4 – B	No
16. Murrieta Oaks East Ave / Clinton Keith Rd.[2]	Signal	30.5 – C	17.4 – B	No
17. McElwain Rd. / Clinton Keith Rd.[2]	Signal	29.4 – C	44.6 – D	No
18. I-215 SB Ramps / Clinton Keith Rd.[2]	Signal	16.8 – B	18.0 – B	No
19. I-215 NB Ramps / Clinton Keith Rd.[2]	Signal	39.0 – D	18.0 – B	No
20. Whitewood Rd. / Clinton Keith Rd.[2]	Signal	41.0 – D	49.7 – D	No
21. I-215 SB Ramps / Keller Rd.	Future Interchange			
22. I-215 NB Ramps / Keller Rd.	Future Interchange			
23. Warm Springs Rd. / Linnel Ln.	Future Intersection			
24. Warm Springs Rd. / Clinton Keith Rd.	Future Intersection			

Sources:
1. *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 95. Table 65. EIR Appendix 9.9.1.
2. *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 19. Table 10. EIR Appendix 9.9.1.

As shown in Table 4.13-13, based on the thresholds of significance, the addition of Project buildout generated trips is forecast to result in a significant traffic impact at the five study intersections highlighted

in the table for forecast existing plus Project buildout conditions. Therefore, implementation of the mitigations measures is identified to reduce the traffic impacts at the pertinent study intersections to a level considered less than significant for forecast existing plus Project buildout conditions.

Mitigated Forecast Existing Plus Project Buildout Conditions Study Intersection Peak Hour LOS

Table 4.13-14 below summarizes forecast existing plus Project buildout conditions LOS of the study intersections for which a significant impact is identified, assuming implementation of the identified mitigation measures for forecast existing plus Project buildout conditions. Assuming implementation of the mitigation measures identified in the TIA and summarized below, the traffic impacts at these study intersections are forecast to be reduced to a level considered less than significant for forecast existing plus Project buildout conditions.

The TIA provides scenarios identifying improvements required to mitigate traffic impacts as each Project phase develops, and also considers reasonably foreseeable future road network changes (as noted in Table 4.13-3 above), plus ambient (background) growth, plus reasonably foreseeable cumulative projects. The TIA identifies improvements to mitigate traffic impacts for all scenarios. Note that the identified improvements are required to primarily to mitigate the impact of existing conditions, plus ambient growth, plus cumulative projects. Therefore, other than the Project's direct construction of all internal roadways, the McElwain Road Extension to Linnel Lane, and half-width improvements along the Project's Keller Road frontage, Project impacts are mitigated through payment of fair share fees to offset the Project's contribution toward anticipated future cumulative impacts.

However, even with the Project Applicant's fair share contribution to implement the identified mitigation measures, full funding and construction of the mitigation measure's improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed and is therefore considered a potentially significant and unavoidable impact. Although implementation of the identified improvements would reduce the significant impacts by requiring the Project's fair share contribution in the form of fee payments towards the future intersection improvements, the City cannot control the timing of when the intersection improvements will be implemented because the locations are not entirely within the boundaries of the City. The timing of improvements in the other jurisdictions (City of Menifee, City of Wildomar and Caltrans) is controlled by the local agency. For locations on jurisdictional boundaries, the construction of improvements is implemented in a cooperative manner. However, the schedule for implementing joint improvements is limited because all parties may not have the funding or other resources to implement the improvement. Consequently, even with implementation of identified Mitigation Measures, impacts would remain significant and unavoidable at the locations outside of the City's jurisdiction and control.

Table 4.13-14: Mitigated Forecast Existing Plus Project Buildout Conditions AM and PM Peak Hour Study Intersection LOS

Study Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Significant Impact?
		Delay – LOS	Delay – LOS	
1. Sunset Ave-Cottonwood Canyon Rd. / Bundy Canyon Rd.	Two-Way Stop	20.0 – C	24.6 – D	No
2. Murrieta Rd. / Scott Rd.	Signal	20.5 – C	29.7 – C	No
3. Haun Rd.-Zeiders Rd. / Scott Rd.	Signal	45.8 – D	39.0 – D	No
6. Antelope Rd. / Scott Rd.	Signal	45.7 – D	44.7 – D	No
7. Zeiders Rd. / Keller Rd.	Signal	17.7 – B	20.2 – B	No

Notes: Delay shown in seconds.
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 95. Table 66. EIR Appendix 9.9.1.

Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions

This section analyzes the potential traffic impacts for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions at the study intersections. According to the City of Murrieta's *Traffic Impact Analysis Preparation Guide* (October 2013), this section evaluates whether the ultimate circulation system planned for the study area will provide an acceptable LOS with the addition of Project-generated trips.

Forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions assumes the following modification to the roadway circulation system:

- Construction of I-215 interchange at Scott Road to its ultimate buildout configuration (currently unfunded).[27]

Forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions assumes the buildout of the roadway circulation system and study intersections per the Murrieta GP and the Menifee GP and also assumes the mitigation measures previously identified for forecast year 2035 existing plus ambient growth plus Project buildout conditions.

Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions Peak Hour Traffic Volumes

Forecast year 2035 existing plus ambient growth plus Project buildout conditions traffic volumes are based on the RivTAM which include trips forecast to be generated by the previously identified 24 cumulative projects within the City of Murrieta and adjacent jurisdictions to forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. Refer to Exhibits 4.13-13 and 4.13-14 for estimated future cumulative traffic volumes.

It should be noted forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions assumes full construction and buildout of the Kaiser Permanente Murrieta Medical Campus cumulative project.

[27] Construction of the I-215 / Scott Road interchange is a three-stage project. Stage 1 of the project is currently underway, as of the date of this report. Pending the availability of funding, anticipated completion of Stage 3 is in Spring 2020. Visit the following website for detailed information: https://cityofmenifee.us/495/Scott-RoadI-215-Interchange-Project.

Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions Peak Hour Study Intersection Level of Service

Table 4.13-15 below summarizes forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions a.m. and p.m. peak hour LOS of the study intersections.

Table 4.13-15: Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions AM and PM Peak Hour Study Intersection LOS

Study Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Significant Impact?
		Delay – LOS	Delay – LOS	
1. Sunset Ave - Cottonwood Canyon Rd. / Bundy Canyon Rd.	Signal	12.1 – B	12.5 – B	No
2. Murrieta Rd. / Scott Rd.	Signal	24.3 – C	19.4 – B	No
3. Haun Rd. - Zeiders Rd. / Scott Rd.	Signal	39.6 – D	50.5 – D	No
4. I-215 SB Ramps / Scott Rd.	Signal	13.9 – B	21.1 – C	No
5. I-215 NB Ramps / Scott Rd.	Signal	6.1 – A	12.3 – B	No
6. Antelope Rd. / Scott Rd.	Signal	43.4 – D	37.4 – D	No
7. Zeiders Rd. / Keller Rd.	Signal	21.9 – C	38.5 – D	No
8. Antelope Rd. / Keller Rd. **(DOES NOT EXIST)**	--	--	--	--
9. Mapleton Ave. / Keller Rd.	Signal	25.1 – C	28.9 – C	No
10. Menifee Rd. / Keller Rd.	Signal	28.3 – C	26.3 – C	No
11. Antelope Rd. / Baxter Rd. **(DOES NOT EXIST)**	--	--	--	--
12. Warm Springs Rd. / Baxter Rd.	Signal	32.3 – C	38.9 – D	No
13. Whitewood Rd. / Baxter Rd.	Signal	39.9 – D	33.3 – C	No
14. McElwain Rd. / Linnel Ln.	Signal	15.9 – B	14.8 – B	No
15. Whitewood Rd. / Linnel Ln.	Signal	20.4 – C	44.1 – D	No
16. Murrieta Oaks East Ave. / Clinton Keith Rd.	Signal	46.0 – D	32.7 – C	No
17. McElwain Rd. / Clinton Keith Rd.	Signal	34.7 – C	48.3 – D	No
18. I-215 SB Ramps / Clinton Keith Rd.	Signal	15.0 – B	19.4 – B	No
19. I-215 NB Ramps / Clinton Keith Rd.	Signal	49.7 – D	24.9 – C	No
20. Whitewood Rd. / Clinton Keith Rd.	Signal	43.0 – D	51.2 – D	No
21. I-215 SB Ramps / Keller Rd.	Roundabout	2.9 – A	3.8 – A	No
22. I-215 NB Ramps / Keller Rd.	Roundabout	4.4 – A	5.5 – A	No
23. Warm Springs Rd. / Linnel Ln.	Signal	30.5 – C	26.1 – C	No
24. Warm Springs Rd. / Clinton Keith Rd.	Signal	22.6 – C	30.6 – C	No

Notes: Delay shown in seconds; SB = Southbound; NB = Northbound.
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Pages 46-47. Table 25. EIR Appendix 9.9.1.
(based on worst-case traffic of the "Original Project" (NOP Land Use Plan) as evaluated in the TIA.

Refer to Exhibits 4.13-15 and 4.13-16 which show the mitigated forecast Year 2035 intersection geometry (for existing plus ambient growth plus cumulative projects plus Project buildout). As shown in Table 4.13-15 above, no study intersections are forecast to operate at a deficient LOS (LOS E or F) according to agency performance criteria for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. As also shown in Table 4.13-15 above, based on the thresholds of significance, the addition of Project buildout-generated trips is forecast to result in no significant traffic impacts at any of the above-listed study intersections for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. The TIA and mitigation measures below indicate the

improvements required to mitigate combined impacts of existing conditions, the Proposed Project, ambient growth plus cumulative projects.

However, full funding for the previously listed assumed modification to the roadway circulation system has not been identified, so construction of the improvements is not guaranteed. In addition, as discussed above for the Existing Plus Project scenario, although the Project will make a fair share payment toward impacts in other jurisdictions, even with the Project Applicant's fair share contribution to implement the identified mitigation measures, full funding and construction of the contemplated improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed. Mitigation measures below indicate which improvements are in which jurisdiction. Also, as noted above in the Existing Plus Project Buildout scenario, these improvements are required primarily to mitigate existing plus ambient plus cumulative development impacts. Therefore, because timing for funding and construction of certain improvements cannot be estimated, the impact is potentially significant and unavoidable. For a list of assumed roadway network improvements in the study area, see Table 4.13-3.

Traffic Signal Warrant Analysis

For each analysis scenario, existing unsignalized study intersections have been evaluated for signalization based on the peak hour volume warrant "Warrant #3" in the *2014 California Manual on Uniform Traffic Control Devices* (CA MUTCD, Revision 4).[28] Table 4.13-16 below summarizes the results of the MUTCD signal warrant analysis at the unsignalized study intersections for all analysis scenarios evaluated as part of this report.

Table 4.13-16: Signal Warrant Analysis Summary

Unsignalized Intersection	Scenario When Signal Warrant Met
1. Sunset Ave-Cottonwood Canyon Rd. / Bundy Canyon Rd	Forecast Year 2028 Plus Ambient Growth Plus Project Phases 1 and 2 Conditions
2. Murrieta Rd. / Scott Rd	Existing Conditions
7. Zeiders Rd. / Keller Rd.	Forecast Year 2028 Plus Ambient Growth Plus Project Phases 1 and 2 Conditions
14. McElwain Rd. / Linnel Ln.	Forecast Year 2023 Plus Ambient Growth Plus Cumulative Projects Plus Project Phase 1 Conditions
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Pages 48-49. EIR Appendix 9.9.1.	

Road Segment Analysis

This section evaluates the potential forecast traffic impact of Project-generated trips at the following study roadway segments:

1. Keller Road from Howard Way to Zeiders Road;
2. Keller Road from Zeiders Road-McElwain Road to I-215 SB Ramps;
3. Keller Road from I-215 NB Ramps to Antelope Road or Mapleton Avenue;
4. Keller Road from Mapleton Avenue to Whitewood Road / Menifee Road;

[28] Caltrans. (2019). *2014 California Manual on Uniform Traffic Control Devices*. Retrieved from Caltrans Website: https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/camutcd2014-rev4-a11y.pdf. Accessed November 2018.

5. Zeiders Road from Keller Road to Scott Road;
6. McElwain Road from Keller Road to "J-J" Street;
7. McElwain Road from "J-J" Street to "D" Street;
8. McElwain Road from "D" Street to Linnel Lane;
9. McElwain Road from Linnel Lane to Clinton Keith Road;
10. Antelope Road from Scott Road to Mapleton Avenue;
11. Antelope Road from Scott Road to Keller Road;
12. Scott Road from Howard Way to Haun Road / Zeiders Road;
12. Scott Road from Haun Road / Zeiders Road to I-215 SB Ramps;
14. Scott Road from I-215 NB Ramps to Antelope Road; and
15. Clinton Keith Road from I-215 NB Ramps to Whitewood Road.

Per the Murrieta GP Circulation Element, McElwain Road north of Linnel Lane to the existing City limits is classified as a four-lane Secondary roadway with LOS E capacity of 25,900 ADT. As part of this analysis, reduction in classification of McElwain Road to a two-lane Collector (LOS E capacity of 13,000 ADT) is evaluated to determine if sufficient capacity will be provided to serve the forecast year 2035 General Plan traffic volumes on McElwain Road from the Project access to Linnel Lane.

The roadway segment analysis presented in this report is based on the City of Murrieta roadway segment classifications and capacities shown in Table 4.13-17 below.

Table 4.13-17: City of Murrieta Daily Roadway Capacity Values

Facility	No. of Lanes	Maximum Two-Way Volume ADT (LOS E)
Freeway	4	76,500
Freeway	6	117,500
Freeway	8	160,500
Freeway	10	200,600
Expressway	4	40,900
Expressway	6	61,300
Multi-Modal Corridor	4	35,900
Multi-Modal Corridor	6	53,900
Augmented Urban Arterial	8	71,800
Urban Arterial	6	53,900
Arterial	4	35,900
Arterial	6	53,900
Major	4	34,100
Secondary	4	25,900
Collector	2	13,000
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Pages 50-51. Table 27. EIR Appendix 9.9.1.		

ROADWAY SEGMENT STUDY AREA FORECAST ADT TRIP ASSIGNMENT OF PROJECT

Table 4.13-18 below summarizes the roadway segment study area forecast ADT trip assignment of the Project for the analysis scenarios evaluated in this report.

Table 4.13-18: Roadway Segment Study Area Forecast ADT Trip Assignment of Project

Study Roadway Segment	Forecast Existing Plus Project Buildout Conditions	Forecast Year 2023 Conditions	Forecast Year 2028 Conditions	Forecast Year 2031 Conditions	Forecast Year 2035 Conditions
Keller Road					
1. Howard Way to Zeiders Road	0	0	0	0	0
2. Zeiders Road-McElwain Road to I-215 SB Ramps	6,669	2,856	9,976	8,128	8,128
3. I-215 NB Ramps to Antelope Road or Mapleton Avenue	6,669	428	2,034	3,186	3,186
4. Mapleton Avenue to Whitewood Road / Menifee Road	3,334	286	1,338	2,266	2,266
Zeiders Road					
5. Keller Road to Scott Road	4,555	0	1,810	4,874	4,874
McElwain Road					
6. Keller Road to Street "J-J"	11,223	2,856	5,324	13,345	13,345
7. Street "J-J" to Street "D"	11,223	2,142	10,170	13,345	13,345
8. Street "D" to Linnel Lane	5,885	Not Constructed	5,324	3,764	3,764
9. Linnel Lane to Clinton Keith Road	5,608	29	171	620	620
Antelope Road					
10. Keller Road to Mapleton Ave.	3,334	Street Vacated			
11. Mapleton Avenue to Scott Road	2,544	143	696	749	749
Scott Road					
12. Howard Way to Haun Road / Zeiders Road	1,604	286	1,125	2,566	2,566
13. Haun Road / Zeiders Road to I-215 SB Ramps	1,947	400	53	278	278
14. I-215 NB Ramps to Antelope Road	1,775	29	278	278	278
Clinton Keith Road					
15. I-215 NB Ramps to Whitewood Road	0	200	878	106	106

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 51. Table 28. EIR Appendix 9.9.1.

ROADWAY SEGMENT STUDY AREA FORECAST ADT TRIP ASSIGNMENT OF CUMULATIVE PROJECTS

Table 4.13-19 below summarizes the roadway segment study area forecast ADT trip assignment of the cumulative projects for the analysis scenarios evaluated in this report.

Table 4.13-19: Roadway Segment Study Area Forecast ADT Trip Assignment of Cumulative Projects

Study Roadway Segment	Forecast Year 2023 Conditions	Forecast Year 2028 Conditions	Forecast Year 2031 Conditions	Forecast Year 2035 Conditions
Keller Road				
1. Howard Way to Zeiders Road	451	538	613	722
2. Zeiders Road-McElwain Road to I-215 SB Ramps	1,931	2,498	2,986	3,691
3. I-215 NB Ramps to Antelope Road or Mapleton Avenue	4,433	6,877	8,791	11,558
4. Mapleton Avenue to Whitewood Road / Menifee Road	3,091	4,008	4,421	5,018
Zeiders Road				
5. Keller Road to Scott Road	3,413	3,893	4,306	4,903
McElwain Road				
6. Keller Road to Street "J-J"	875	875	875	875
7. Street "J-J" to Street "D"	875	875	875	875
8. Street "D" to Linnel Lane	Not Constructed		875	875
9. Linnel Lane to Clinton Keith Road	2,271	2,271	2,271	2,271
Antelope Road				
10. Keller Road to Mapleton Ave.	1,054	Street Vacated		
11. Mapleton Avenue to Scott Road	2,716	3,240	3,615	4,158
Scott Road				
12. Howard Way to Haun Road / Zeiders Road	10,770	11,207	11,582	12,125
13. Haun Road / Zeiders Road to I-215 SB Ramps	25,244	25,681	25,756	25,865
14. I-215 NB Ramps to Antelope Road	12,669	13,106	13,181	13,290
Clinton Keith Road				
15. I-215 NB Ramps to Whitewood Road	14,763	15,200	15,575	16,118
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 52. Table 29. EIR Appendix 9.9.1.				

As shown in Table 4.13-20, the study roadway segments are forecast to operate at an acceptable LOS (LOS C or better) according to agency performance criteria for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions except for:

- Segment 9 - McElwain Road from Linnel Lane to Clinton Keith Road (LOS D).

Table 4.13-20: Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions Study Roadway Segment LOS: Daily Traffic Analysis

Study Roadway Segment	Roadway Segment Classification	No. of Lanes	Roadway Segment Capacity	ADT	V/C	LOS
Keller Road						
1. Howard Way to Zeiders Road	Collector	2	13,000	6,250	0.48	A
2. Zeiders Road-McElwain Road to I-215 SB Ramps	Major	4	34,100	20,330	0.60	A
3. I-215 NB Ramps to Antelope Road or Mapleton Avenue	Urban Arterial	6	53,900	25,300	0.47	A
4. Mapleton Avenue to Whitewood Road / Menifee Road	Major	4	34,100	22,620	0.66	B
Zeiders Road						
5. North of Keller Road	Major	4	34,100	14,170	0.42	A
McElwain Road						
6. Keller Road to Street "J-J"	Secondary	4	25,900	14,230	0.55	A
7. Street "J-J" to Street "D"	Mod Collector	3*	19,500	14,230	0.73	C
8. Street "D" to Linnel Lane	Collector	2	13,000	4,640	0.36	A
9. Linnel Lane to Clinton Keith Road	Secondary	4	25,900	22,790	0.88	**D**
Antelope Road						
10. Scott Road to Mapleton Avenue	Street Vacated					
11. Scott Road to Keller Road	Multi-Modal Corridor	4	35,900	21,410	0.60	A
Scott Road						
12. Howard Way to Haun Road / Zeiders Road	Urban Arterial	6	53,900	33,000	0.61	B
13. Haun Road / Zeiders Road to I-215 SB Ramps	Urban Arterial	6	53,900	34,000	0.63	B
14. I-215 NB Ramps to Antelope Road	Augment Urban Arterial	8	71,800	42,300	0.59	A
Clinton Keith Road						
15. I-215 NB Ramps to Whitewood Road	Urban Arterial	6	53,900	32,680	0.61	B

Notes:
V/C = Volume-to-capacity ratio; Deficient operation shown in bold.
*McElwain Road, from Street "D" to Linnel Lane will be constructed with one northbound lane and two southbound lanes, or two northbound lanes and one southbound lane, depending on the grade of the road, to meet the Highway Design Manual climbing lane requirements.
Source: Murrieta Hills Specific Plan Traffic Impact Analysis. Page 70. Table 47. EIR Appendix 9.9.1.

To evaluate if the forecast 2035 existing plus ambient plus cumulative projects plus Project buildout conditions result in a significant Project impact, this roadway segment was further analyzed under the peak hour conditions to determine if there is a capacity deficiency during the critical peak hours.

As shown in Table 4.13-21 below, based on the thresholds of significance, the addition of the Project does not significantly impact the roadway segment and no mitigation is required. However, full funding for the previously listed assumed modifications to the roadway circulation system has not been identified, so construction of the improvements is not guaranteed. Therefore, because timing for funding and construction of certain improvements cannot be estimated, the impact is potentially significant and unavoidable. For a list of assumed roadway network improvements in the study area, see Table 4.13-3.

Table 4.13-21: Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Study Roadway Segment LOS: Peak Hour Analysis

Study Roadway Segment	Roadway Segment Classification	No. of Lanes by Direction	Roadway Segment Capacity Per Direct (VPH)	Peak Hour Volume		V/C		LOS		Significant Impact?
				AM	PM	AM	PM	AM	PM	
McElwain Road										
9. Linnel Lane to Clinton Keith Road	Secondary	EB: 2	3,200	372	659	0.12	0.21	A	A	No
		WB: 2	3,200	258	351	0.08	0.11	A	A	

Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 71. Table 48. EIR Appendix 9.9.1.

Keller Road Queuing Analysis

Utilizing the Synchro analysis software, a queue analysis has been prepared to evaluate the forecast queues along Keller Road between Zeiders Road and Mapleton Avenue after construction of the I-215 / Keller Road interchange assumed to be constructed by year 2023. The Synchro software accounts for traffic signal coordination and the distance between intersections. The purpose of the queuing analysis is to determine whether any turn lane storage improvements will be required beyond what was previously identified in the preceding sections as intersection mitigation measures to achieve acceptable LOS along Keller Road between Zeiders Road and Mapleton Avenue.

Hence, for the scenario evaluated for vehicular queues, the queue analysis assumes any mitigated geometry and improvements previously identified to achieve acceptable LOS at the study intersection for that specific analysis scenario. Additionally, the queue analysis assumes the following:

- Signal coordination and optimized signal timing between the range of 60 and 120 seconds for the corridor; and
- A typical baseline turn-lane storage length of 200 feet provided for turn lanes at all future intersections.

As shown in the TIA (EIR Appendix 9.9.1, Table 49), adequate queue storage is forecast to be provided at all evaluated movements of the study intersections for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. However, full funding for the buildout of the roadway circulation system and study intersections per the Murrieta GP and the Menifee GP has not been identified, so construction of the improvements is not guaranteed. And even with the Project Applicant's fair share contribution to implement identified mitigation measures, full funding and construction of the mitigation measure's improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed. Therefore, the impact is potentially significant and unavoidable. For a list of assumed roadway network improvements in the study area, see Table 4.13-3.

Freeway Ramp Merge and Diverge Analysis

Currently, without the future-planned I-215 / Keller Road interchange, regional access for the Project is provided via I-215 and its existing interchanges with Scott Road and Clinton Keith Road. With construction of the I-215 / Keller Road interchange by 2023, regional access for the Project will be provided via I-215 and its interchange with Keller Road. Hence, with construction of the I-215 / Keller Road interchange, a

minimal number of Project trips are expected to access I-215 via the Scott Road and Clinton Keith Road interchanges.

This section evaluates the potential forecast traffic impact of Project-generated trips at the following State Highway study freeway ramps for forecast existing and forecast existing plus Project buildout conditions prior to construction of the Keller Road interchange with I-215:

1. I-215 Northbound Off-Ramp to Scott Road;
2. I-215 Northbound On-Ramp from Scott Road;
3. I-215 Southbound Off-Ramp to Scott Road;
4. I-215 SB On-Ramp from Scott Road;
5. I-215 NB Off-Ramp to Clinton Keith Road;
6. I-215 NB On-Ramp from Eastbound Clinton Keith Road;
7. I-215 NB On-Ramp from Westbound Clinton Keith Road;
8. I-215 SB Off-Ramp to Clinton Keith Road;
9. I-215 SB On-Ramp from Westbound Clinton Keith Road; and
10. I-215 SB On-Ramp from Eastbound Clinton Keith Road.

For forecast year 2023, 2028, 2031 and 2035 conditions, the analysis assumes construction of the I-215 / Keller Road interchange and Phase 1 improvements to the I-215 / Scott Road interchange. The potential forecast traffic impact of Project-generated trips at the following State Highway study freeway ramps for forecast year 2023 through year 2035 also include**:**

11. I-215 NB Off-Ramp to Keller Road;
12. I-215 NB On-Ramp from Keller Road;
13. I-215 SB Off-Ramp to Keller Road; and
14. I-215 SB On-Ramp from Keller Road.

Future additional widening of I-215 is planned which would provide four lanes of travel in each direction. However, this analysis does not assume construction of the fourth lane for any of the scenarios evaluated in this report.

STATE HIGHWAY FREEWAY RAMP MERGE AND DIVERGE ANALYSIS METHODOLOGY

Caltrans advocates the use of HCM analysis methodology to analyze the operation of freeway facilities. HCM analysis methodology describes the operation of freeway merge and diverge facilities using a range of LOS from LOS A to LOS F based on corresponding density (passenger cars/mile/lane) shown in Table 4.13-22 below.

Table 4.13-22: Freeway Ramp Merge and Diverge Facilities LOS and Density Ranges

LOS	Density (pc/mi/ln)
A	≤ 10
B	10.01 ≤ 20.00
C	20.01 ≤ 28.00
D	28.01 ≤ 35.00
E	> 35.00
F	Demand Exceeds Capacity

Notes: pc/mi/ln = passenger cars per mile per lane.
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 74. Table 50. EIR Appendix 9.9.1.

The *Caltrans Traffic Impact Study Guidelines* (December 2002) do not establish specific significant traffic impact criteria. This analysis assumes LOS D as the acceptable LOS for merge and diverge operation.

STATE HIGHWAY FREEWAY RAMP MERGE AND DIVERGE FACILITY THRESHOLDS OF SIGNIFICANCE

Based on the City of Murrieta performance standards and significant impact criteria, the following thresholds of significance at State Highway merge and diverge facilities is utilized for this analysis:

- The acceptable LOS shall be maintained with the addition of traffic from the Project. The analysis shall identify mitigation measures to achieve acceptable LOS.
- For General Plans and Specific Plans, the analysis shall determine whether the ultimate circulation system planned for the area will be adequate to provide an acceptable LOS. The analysis shall identify mitigation measures to achieve acceptable LOS

It should be noted that Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on state highway facilities but acknowledges this is not always feasible.

Existing and Forecast Traffic Volumes

Existing freeway volumes were obtained from the Caltrans Traffic and Vehicle Data Systems Unit. Traffic volumes on the Caltrans website provide the annual average daily traffic (AADT) volumes for freeways. The a.m. peak hour and p.m. directional peak hour freeway volumes for I-215 were derived utilizing the Caltrans peak hour "K" and "D" factors for the nearest available data point in the Project vicinity.

For each analysis scenario, forecast freeway mainline traffic volumes used in this analysis were derived using the same methodologies utilized in deriving the study intersection future peak hour traffic volumes previously noted in this report.

Peak hour freeway ramp volumes utilized in this analysis for all analysis scenarios are based on the intersection peak hour volumes previously shown and utilized in the study intersection LOS analysis.

EXISTING CONDITIONS PEAK HOUR STUDY FREEWAY RAMP MERGE AND DIVERGE LEVEL OF SERVICE

Table 4.13-23 below summarizes existing conditions a.m. peak hour and p.m. peak hour merge and diverge operation and LOS of the study freeway ramps. As shown in Table 4.13-52 below, the study freeway ramps are currently operating at an acceptable LOS (LOS D or better) for existing conditions.

Table 4.13-23: Existing Conditions AM and PM Peak Hour Study Freeway Ramp Merge and Diverge LOS

Study Freeway Ramp	Analysis Type	Freeway Lanes	Ramp Lanes	AM Peak Hour	PM Peak Hour
				Density – LOS	Density – LOS
1. I-215 NB Off-Ramp to Scott Rd.	Diverge	3	1	18.2 - B	28.0 - D
2. I-215 NB On-Ramp from Scott Rd.	Merge	3	1	17.1 - B	23.7 - C
3. I-215 SB Off-Ramp to Scott Rd.	Diverge	3	1	30.2 - D	21.4 - C
4. I-215 SB On-Ramp from Scott Rd.	Merge	3	1	32.3 - D	20.7 - C
5. I-215 NB Off-Ramp to Clinton Keith Rd.	Diverge	3	1	16.5 - B	27.7 - C
6. I-215 NB On-Ramp from EB Clinton Keith Rd.	Merge	3	1	17.1 - B	26.4 - C
7. I-215 NB On-Ramp from WB Clinton Keith Rd.	Merge	3	1	16.3 - B	24.9 - C
8. I-215 SB Off-Ramp to Clinton Keith Rd.	Diverge	3	1	32.1 - D	22.2 - C
9. I-215 SB On-Ramp from WB Clinton Keith Rd.	Merge	3	1	28.3 - D	15.5 - B
10. I-215 SB On-Ramp from EB Clinton Keith Rd.	Merge	3	1	32.1 - D	18.3 - B

Notes: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound. Density is shown in passenger cars per mile per lane (pc/mi/ln).
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 75. Table 51. EIR Appendix 9.9.1.

Table 4.13-24 below summarizes forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions a.m. peak hour and p.m. peak hour merge and diverge operation and LOS of the study freeway ramps.

Table 4.13-24: Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions AM and PM Peak Hour Study Freeway Ramp Merge and Diverge LOS

Study Freeway Ramp	Analysis Type	Freeway Lanes	Ramp Lanes	AM Peak Hour	PM Peak Hour	Significant Impact?
				Density – LOS	Density – LOS	
13. I-215 NB Off-Ramp to Keller Rd.	Diverge	3	1	24.3 - C	34.4 - D	No
14. I-215 NB On-Ramp from Keller Rd.	Merge	3	1	19.7 - B	34.6 - D	No
15. I-215 SB Off-Ramp to Keller Rd.	Diverge	3	1	34.4 - D	27.0 - C	No
16. I-215 SB On-Ramp from Keller Rd.	Merge	3	1	34.2 - D	26.3 - C	No

Notes: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound. Density is shown in passenger cars per mile per lane (pc/mi/ln).
Source: *Murrieta Hills Specific Plan Traffic Impact Analysis*. Page 83. Table 60. EIR Appendix 9.9.1.

As shown in Table 4.13-24 above, the study freeway ramps are forecast to continue to operate at an acceptable LOS (LOS D or better) for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. Based on the thresholds of significance, the addition of Project buildout-generated trips is forecast to not result in any significant traffic impacts at the study freeway ramps for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions. However, full funding for all the previously listed assumed modifications to the roadway circulation system has not been identified, and any ramp or interchange improvement is within the jurisdiction of Caltrans and outside the control of the City of Murrieta. Therefore, timely construction of the improvements is not guaranteed. Therefore, the impact is potentially significant and unavoidable. For a list of assumed roadway network improvements in the study area, see Table 4.13-3.

Summary

In summary, mitigation measures have been identified to achieve acceptable LOS and mitigate Project forecast significant traffic impacts at the study intersections for all study scenarios. The analysis assumes the planned construction of the Keller Road interchange at I-215 and Phase 1 improvements planned at the Scott Road / I-215 interchange is completed by Year 2023. The construction of the Keller Road / I-215 interchange by Year 2023 provides direct access to the Project and therefore, a minimal number of Project trips are expected to access I-215 via the Scott Road and Clinton Keith Road interchanges. Furthermore, construction of the Keller Road interchange at I-215 would provide additional access to the freeway and the study intersection of Antelope Road / Keller Road intersection would be eliminated and realigned per the City's future circulation improvement plans.

Based on a request from the City and to satisfy the LOS policy on Keller Road from Zeiders Road to I-215 SB ramps, the eastbound direction of Keller Road from Zeiders Road to I-215 SB ramps would be improved from one lane to two lanes. The improvement from one to two lanes in the eastbound direction is included as Project mitigation and should be built to the City's Major roadway classification standard. Assuming the lane improvement in the eastbound direction, the resulting LOS improves from a deficient LOS D to an acceptable LOS A.

Per the Murrieta GP Circulation Element, McElwain Road north of Linnel Lane is classified as a four-lane Secondary roadway with LOS E capacity of 25,900 ADT. Reduction in classification of McElwain Road to a two-lane Collector (LOS E capacity of 13,000 ADT) is evaluated to determine if adequate capacity will be provided to serve the forecast year 2035 GP traffic volumes on McElwain Road from the Project access to Linnel Lane. McElwain Road from the Project access to Linnel Lane is forecasted to operate at an acceptable LOS as a two-lane Collector roadway for forecast year 2035 existing plus ambient growth plus cumulative projects plus Project buildout conditions and all other scenarios evaluated in this report. However, the Project does not propose to change the City's classification of McElwain Road from a four-lane Secondary roadway to a two-lane Collector. At the request of the City of Murrieta, McElwain Road from Street "D" to the Project's southern boundary would include three travel lanes (two southbound and one northbound) to accommodate a truck climbing lane which is referred to as a three-lane interim Modified Collector in the roadway segment analysis in this report.

The study freeway ramps are forecast to operate at an acceptable LOS (LOS D or better) for all analysis scenarios. Therefore, the Project does not result in significant impacts at any of the study freeway ramps under all study conditions and mitigation is not required. At buildout of Phase 1 of the Project in year 2023, reconstruction of the I-215 / Scott Road interchange (Phase 1) improvements and construction of the I-215 / Keller Road interchange is anticipated to be completed and assumed in the forecast year 2023 plus ambient growth plus Project Phase 1 conditions through forecast year 2035 with ambient growth plus cumulative projects plus Project buildout conditions. With construction of the I-215 / Keller Road interchange, a minimal number of Project trips are expected to access I-215 via the Scott Road and Clinton Keith Road interchanges.

It should also be noted that no additional improvements are necessary to provide adequate progression and turn lane vehicular queue capacity along Keller Road between Zeiders Road and Mapleton Avenue after construction of the future Keller Road interchange with I-215.

An on-site analysis was completed for the Project to determine the lane configurations and traffic controls that would be needed for the primary intersections and street sections internal and adjacent to the Project

site. A queuing analysis was conducted along McElwain Road between Keller Road and Street "D" to determine if there is adequate turn lane vehicular capacity during the forecast year 2035 plus ambient growth plus cumulative projects plus Project buildout conditions. The queuing analysis results shows intersection spacing and capacities at turn lanes at intersections along McElwain Road within the Project site are adequate.

Overall, while certain assumptions were made regarding future construction improvements, full funding for all the previously listed assumed modifications to the roadway circulation system, such as the Keller Road/I-215 interchange, has not been identified, so construction of the improvements is not guaranteed. And even with the Project Applicant's fair share contribution to implement identified mitigation measures, full funding and construction of the mitigation measure's improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed. Therefore, the impact is potentially significant and unavoidable. For a list of assumed roadway network improvements in the study area, see Table 4.13-3.

Off-Site Operations Impacts

As discussed above, the Project includes a GP Amendment to the Murrieta GP's Circulation Element to include the McElwain Road extension. Therefore, the Project will be consistent with applicable City planning documents and impacts will be less than significant level.

MITIGATION MEASURES

The following mitigation measures are identified to reduce the traffic impacts at the impacted study intersections to a level considered less than significant for forecast existing plus Project buildout conditions:

MM TRAN-1: The Project Applicant shall construct all Project-related transportation improvements identified on the Tentative Tract Map, consistent with phasing recommendations by the City Engineer, including all internal roadways, McElwain Road extension and half-width improvements to Keller Road along the Project frontage. Any off-site improvements may be considered for in lieu credit toward traffic impact fees as determined appropriate by the City of Murrieta. Each site plan shall include a TIA Verification Memo to confirm site-specific development proposals are consistent with overall TIA assumptions and mitigation recommendations such that no new or substantially more severe impacts would occur (Specific Plan Section 8.8 allows for substantial conformance determinations and density transfers provided that the overall Specific Plan densities are not exceeded).

MM TRAN-2: For any off-site improvements noted below, if not constructed or fully funded by others, the Project Applicant shall pay a fair share fee. For City of Murrieta improvements, this fair share payment shall be at time of building permit issuance. For improvements in other jurisdictions, the Project Applicant or City of Murrieta shall enter into an MOU with the affected jurisdiction(s) regarding fair share payment timing. The Project Applicant's fair share payment to a jurisdiction other than City of Murrieta shall only be made if there is an established mechanism for receiving the funds and ensuring the funds are directly allocated toward the identified improvement in a timely manner.

MM TRAN-3: **Intersection 6 – Antelope Road / Scott Road (Murrieta)** – The Project Applicant shall make a fair share contribution to implement the following:

a) Widen the eastbound approach from one left-turn lane, one through lane, and one shared through / right-turn lane to consist of two left-turn lanes, two through lanes and one right-turn lane.

MM TRAN-4: **Intersection 20 – Whitewood Road / Clinton Keith Road (Murrieta) –** The Project Applicant shall make a fair share contribution to implement the following:

a) Widen the southbound approach from one left-turn lane, one through lane, and one shared through / right-turn lane to consist of one left-turn lane, two through lanes, and one right-turn lane with overlap phasing (Year 2023 With Cumulative).

b) Widen the northbound approach from one left-turn lane, one through lane and one shared through / right-turn lane to consist of two left-turn lanes, one through lane and one shared through / right-turn lane (Year 2031 Project Buildout Plus Cumulative).

c) Widen the southbound approach from two left-turn lanes, one through lane and one shared through / right-turn lane to consist of two left-turn lanes, two through lanes and one right-turn lane with overlap phasing (Year 2035 Project Buildout Plus Growth).

MM TRAN-5: **Intersection 14 – McElwain Road / Linnel Lane (Murrieta) –** The Project Applicant shall make a fair share contribution to implement the following:

a) Signalize the intersection (Year 2031 Project Buildout Plus Growth).

MM TRAN-6: **Intersection 16 – Murrieta Oaks East Avenue / Clinton Keith Road (Murrieta) –** The Project Applicant shall make a fair share contribution to implement the following:

a) Widen the eastbound approach from one left-turn lane, two through lanes and one right-turn lane to consist of one left-turn lane, two through lanes and one shared through / right-turn lane (Year 2031 Project Buildout Plus Cumulative).

MM TRAN-7: **Intersection 7 – Zeiders Road / Keller Road (Murrieta/Menifee)** – The Project Applicant shall make a fair share contribution to implement the following:

a) Signalize the intersection.

b) Widen the northbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn / through lane and one right-turn lane with right-turn overlap phasing.

c) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane.

d) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane.

e) Convert from a two-way stop control to an all-way stop controlled intersection (Year 2023 With Cumulative).

f) Widen the northbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn, one through lane and one right-turn lane (Year 2023 With Cumulative).

g) Widen westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2023 With Cumulative).

h) Widen westbound approach from one left-turn lane and one share through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2028 With Cumulative).

i) Widen eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2028 With Cumulative).

j) Widen southbound approach from one shared left-turn / through / right-turn lane to consist of a left-turn lane and one shared through / right-turn lane (Year 2028 With Cumulative).

k) Widen the northbound approach from one shared left-turn / through / right-turn to consist of one left-turn lane, one through lane and one right-turn lane with right-turn overlap phasing (Year 2035 Project Buildout Plus Growth).

l) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

m) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

n) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

MM TRAN-8: **Intersection 2 – Murrieta Road / Scott Road (Menifee)** – The Project Applicant shall make a fair share contribution to implement the following:

a) Signalize the intersection.

b) Widen the eastbound approach from one shared left-turn / through lane to consist of one left-turn lane and one through lane (Year 2023 Plus Growth).

c) Widen the southbound approach from one shared left-turn / right-turn lane to consist of one left-turn lane and one right-turn lane (Year 2023 With Cumulative).

d) Widen the westbound approach from one shared through / right-turn lane to consist of one through lane and one right-turn lane (Year 2023 With Cumulative).

e) Widen the westbound approach from one through lane and one right-turn lane to consist of one through lane and one shared through / right-turn lane (Year 2031 Project Buildout Plus Growth).

f) Widen the eastbound approach from one left-turn lane and one through lane to consist of two left-turn lanes and one through lane (Year 2031 Project Buildout Plus Growth).

g) Implement right-turn overlap phasing in the southbound approach (Year 2031 Project Buildout Plus Growth).

MM TRAN-9: **Intersection 3 – Haun Road-Zeiders Road / Scott Road (Menifee)** – The Project Applicant shall make a fair share contribution to implement the following:

a) Widen the southbound approach from one left-turn lane and one shared left-turn / through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane.

b) Widen the eastbound approach from one left-turn lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane and one shared through / right-turn lane.

c) Implement right-turn overlap phase at the westbound approach.

d) Widen the southbound approach from one left- turn lane and one shared through / right-turn lane to consist of two left-turn lanes and one shared through / right-turn lane (Year 2023 With Cumulative).

e) Widen the eastbound approach from one left-turn lane, one through lane and one shared through / right-turn lane to consist of one left-turn lane, two through lanes and one shared through / right-turn lane (Year 2023 With Cumulative).

f) Widen the westbound approach from one left-turn lane, two through lanes, and one right-turn lane to consist of two left-turn lanes, two through lanes, and two right-turn lanes (Year 2023 With Cumulative).

g) Widen the northbound approach from one left-turn lane, one through lane, and one right-turn lane to consist of two left-turn lanes, one through lane and one right-turn lane with overlap phasing (Year 2031 Project Buildout Plus Cumulative).

h) Widen the southbound approach from two left-turn lanes and one shared through / right-turn lane to consist of two left-turn lanes, one through lane and one right-turn lane (Year 2031 Project Buildout Plus Cumulative).

i) Widen the westbound approach from two left-turn lanes, two through lanes and two right-turn lanes to consist of two left-turn lanes, three through lanes and two right-turn lanes (Year 2031 Project Buildout Plus Cumulative).

j) Widen the eastbound approach from one left-turn lane, two through lanes and one shared through / right-turn lane to consist of two left-turn lanes, three through lanes, and one right-turn lane (Year 2031 Project Buildout Plus Cumulative).

k) Add a right-turn overlap phasing in the northbound direction (Year 2035 Project Buildout Plus Growth).

l) Widen the westbound approach from two left-turn lanes, three through lanes and one right-turn lane to consist of two left-turn lanes, three through lanes and two right-turn lanes direction (Year 2035 Project Buildout Plus Growth).

MM TRAN-10: Intersection 1 – Sunset Avenue - Cottonwood Canyon Road / Bundy Canyon Road (Wildomar/Menifee) – The Project Applicant shall make a fair share contribution to implement the following:

a) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn / through lane and one shared through / right-turn lane.

b) Widen the eastbound approach from one shared left-turn / through / right-turn lane to consist of one shared left-turn/through lane and one shared through / right-turn lane (Year 2023 With Cumulative).

c) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2023 With Cumulative).

d) Signalize the intersection (Year 2028 With Cumulative).

e) Widen the eastbound approach from one shared left-turn / through lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2028 With Cumulative).

f) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2028 With Cumulative).

g) Widen the southbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

h) Widen the eastbound approach from one shared left-turn / through lane and one shared through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

i) Widen the westbound approach from one shared left-turn / through / right-turn lane to consist of one left-turn lane, one through lane, and one shared through / right-turn lane (Year 2035 Project Buildout Plus Growth).

IMPACTS OF MITIGATION MEASURES

Additional right-of-way necessary to improve the intersections addressed in the above mitigation measures could result in impacts to land use or biological resources. Land use and biological resources impacts at these intersections were not studied in this EIR because these intersections are not part of this Project. Nor does the City have control as to when the intersections could be improved. The Project Applicant shall make a fair share contribution to implement the above mitigation measures. Impacts of all internal roads, half-width improvements to Keller Road, and the McElwain Road Extension are addressed

throughout this EIR as part of the "Project." As noted above, off-site road improvements are primarily due to existing plus ambient growth plus cumulative development impacts, and the construction of these improvements would be the responsibility of the local jurisdiction(s) noted above. In addition, several of these improvements, including the Keller Road / I-215 interchange and Scott Road / Bundy Canyon Road corridor, are currently under their own environmental review process. The Sunset Avenue / Cottonwood Canyon Road / Bundy Canyon Road intersection was evaluated in a prior EIR and is anticipated to be improved as part of a future development.[29] The applicable jurisdiction(s) will conduct preliminary design studies, prepare final design plans, and determine whether additional CEQA review is required for each individual improvement.

Impact 4.13-2: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

Construction impacts associated with the Project may temporarily restrict vehicular traffic or cause temporary hazards. Construction operations will be required to implement appropriate and feasible measures to facilitate the passage of people and vehicles through/around any required road or lane closures. Site-specific activities, such as temporary construction activities, are finalized on a project-by-project basis by the City and are required to ensure adequate traffic flow. At the time of approval of any site-specific development plans required for the construction of infrastructure as a part of the Specific Plan's infrastructure implementation element or other typical conditions of approval, the Project would be required to implement measures that would maintain traffic flow and access through standard conditions of approval that would be placed on each Project development phase. Such measures include implementation of a Construction Traffic Control Plan (MM TRAN-11, see page 4.13-53).

The McElwain Road extension, from Linnel Lane to Keller Road, will be constructed during Phase 1, prior to the delivery of lumber for construction, and open for public access. McElwain Road will be constructed in accordance with City design and safety standards. Temporary internal access roads would be constructed to provide access to areas of the Project site for construction staff/inspectors, construction equipment and materials delivery/removal, and emergency response vehicles. Hazards associated with the internal access roads may exist in the form of unsignalized intersections and pavement drop offs, making the construction site potentially unsafe and unsuitable for public or passenger vehicles/traffic. Therefore, adequate signage would be placed around the periphery of the Project site advertising caution/danger for the construction area and that access is for authorized personnel only.

Upon implementation of the Project and initiation of site preparation and development, existing unauthorized and authorized activities and agricultural operations will cease, therefore avoiding potential conflict with agricultural operations or unauthorized recreational activities.

[29] Bundy Canyon Road / Scott Road Improvement Project Final EIR, September 2014, City of Wildomar. In addition, the City of Menifee is commencing conceptual design and CEQA review for the portion of Bundy Canyon / Scott Road within the City of Menifee's jurisdiction.

Overall, construction activities would not substantially increase hazards due to a geometric design feature or incompatible uses. In consideration of PDFs and MM TRAN-11 (see page 4.13-53), potential construction-related transportation hazards will be reduced to a less than significant level.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Construction analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road. McElwain Road will be constructed from Keller Road to Linnell Lane before lumber for construction is delivered to the Project site. Therefore, McElwain Road will not be initially constructed as an access road but will be constructed to meet appropriate city, county, and state roadway design standards for a secondary highway/modified collector. McElwain Road will be constructed during Phase 1 and open to the public following its completion.

OPERATIONS

All Project roadways would be designed and built in compliance with City of Murrieta, City of Menifee, and other relevant regulatory agency development standards, requirements, and regulations. The design of roadways must provide adequate sight distance and traffic control measures. This provision is normally realized through roadway design to facilitate roadway traffic flows. Roadway improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, and intersection control as well as incorporate design standards tailored specifically to Project access requirements that would result in the safe and efficient flow of traffic within and through the Project site. In addition, the Project is a Specific Plan that includes a circulation plan to guide future construction of internal roadways. The circulation plan addresses vehicular circulation and circulation development standards. The Specific Plan contains the general alignment and street cross-sections for all key roadways as well as an infrastructure implementation component. Adherence to the Specific Plan general street alignments and street cross-sections and other applicable City requirements for the construction of streets would ensure the Project would not include any sharp curves, dangerous intersections, or other design hazards.

To further address potential hazards due to a geometric design feature (e.g., dangerous intersections), a traffic signal warrant analysis was conducted as part of the TIA.[30] For each analysis scenario, existing unsignalized study intersections were evaluated for signalization based on criteria listed in the peak hour volume warrant "Warrant #3" in the 2014 edition of the *California Manual on Uniform Traffic Control Devices* (CA MUTCD). Of the 10 scenarios evaluated, traffic signals at the intersections of Zeiders

Road/Keller Road and McElwain Road/Linnel Lane are warranted according to seven and six of the 10 analyses, respectively. For detailed information on the scenarios evaluated and the traffic signal warrant worksheets, see the TIA in Appendix 9.9.1. The mitigation measures outlined above would address potential traffic impacts at the aforementioned intersections to a level considered less than significant.

The Project site would not be subject to active agricultural operations involving frequent or intense use of agricultural equipment. Unauthorized activities such as off-highway recreational activity and illegal dumping would continue to be prohibited, as would hiking/biking in unauthorized areas.

[30] *Murrieta Hills Specific Plan Traffic Impact Analysis*. EIR Appendix 9.9.1.

Overall, in consideration of PDFs and implementation of mitigation measures identified above, operations activities would not substantially increase hazards due to a geometric design feature or incompatible uses; therefore, construction impacts would be less than significant.

Off-Site Operations Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Operations analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road.

MITIGATION MEASURES

Also refer to MM TRAN-1 through MM TRAN-10 on pages 4.13-46 through -50.

MM TRAN-11: The Project Applicant will file a Local Jurisdiction Encroachment Permit with the City of Menifee and prior to construction grading, the Project Applicant shall submit for review and approval a Construction Traffic Control Plan to the City of Menifee and City of Murrieta as part of the encroachment permit or related approval process. The Plan shall address, at a minimum, the following issues:

- Controlling construction traffic flow by use of a flag person at construction site entrances on public roads, including Keller Road, Zeiders Road, and Linnel Lane;
- Signage, lighting, and traffic control device placement if required;
- Need, if any, for construction work hours and arrival/departure times outside of peak traffic periods;
- Maintaining access for emergency vehicles;
- Advanced notice to local agencies, transit providers, school districts, and emergency service providers regarding the anticipated schedule, location, and duration of any temporarily reduced through lanes, including clear plans for temporary detours and alternate routes, if applicable;
- Maintain through access in each direction on any public road;
- Maintain access to adjacent properties during construction;
- Specify construction-related haul routes for any material import/export;
- Timing of heavy equipment and building materials deliveries; and/or
- Identify specific contractor training and related safety procedures for construction vehicles exiting and entering work areas from public roads.

Impact 4.13-3: Would the Project result in inadequate emergency access?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The Project is not anticipated to result in any significant emergency access impacts during construction. In case of an emergency, the construction manager will have assigned staff to flag emergency response

vehicles and direct them to the emergency location. Unimpeded access throughout the Project site would be maintained as construction equipment and materials would not be parked or placed in a manner that would impede access for emergency response vehicles. Site conditions, during and after the work day, would be maintained or left in a condition that adheres to Division of Occupational Safety and Health (better known as Cal/OSHA) safety standards to prevent hazardous conditions for construction staff and emergency responders.

Temporary access roads would be constructed to provide access to the Project site for construction staff/inspectors, construction equipment and materials delivery/removal, and emergency response vehicles. While construction access roads are not held to the same design standards as public roadways, they would be kept or maintained in such a condition to allow for the safe passage of emergency response vehicles. During Phase 1, several PAs would be constructed, refer to Table 3.1 in Section 3.0, *Project Description*. The McElwain Road construction, which would begin at Keller Road and extend through the Project site to Linnel Lane, would be completed in Phase 1. The McElwain Road extension would be constructed in two segments during Phase 1:

- From Keller Road to Street "D"
- From Street "D" to Linnel Lane

Construction of Streets "A," "C," and "D," connecting McElwain Road to Keller Road, would also be completed during Phase 1. As part of Phase 1, a traffic signal (light) would be installed at the Keller Road/McElwain Road intersection to further control traffic for emergency access to the Project site. Traffic (stop) signs would also be installed at the McElwain Road / Street "C" intersection during Phase 2. Meanwhile, the Caltrans I-215/Keller Road improvements would occur, further improving access to the Project area. Construction may result in temporary lane closures and detours for affected roadway segments.

To minimize emergency access impacts, MM TRAN-11 (see page 4.13-53) would be implemented to further reduce potential impacts to less than significant levels, by requiring such appropriate and feasible measures as signage, emergency service provider notification, and traffic control during construction, in addition to maintaining at least one lane open to through traffic on all public streets. In consideration of PDFs and MM TRAN-11 (see page 4.13-53), potential construction-related emergency access impacts would be reduced to a less than significant level.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Construction analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road. McElwain Road will be constructed from Keller Road to Linnell Lane before lumber for construction is delivered to the Project site. Thereby creating a southern access point to the Project site for emergency responders.

OPERATIONS

The Project does include new and modified roadways, as well as other roadway circulation improvements. Three access points will be provided along Keller Road. The primary access is located at the intersection of Keller Road and Zeiders Road/McElwain Road, providing direct access to the easternmost PAs, including the commercial and multi-family components. A second access will be located at the intersection of Keller

Road and Gloria Road/Street "A" and provides direct access into the central and western residential PA, including single-family components. A third access will be located at the intersection of Keller Road and Howard Road/Street "E," providing direct access to residential PA 4. A looped roadway system throughout the Specific Plan area connects most of the PAs and provides connections to Keller Road and McElwain Road, which extend outside of the Project area. Access to the south will be facilitated by the extension of McElwain Road from the Project site's southern boundary, south to Linnel Lane. Therefore, the Project and PDFs do not represent a potentially significant emergency access impact during operations. Site access, including road widths and connectivity, would comply with the requirements of the Murrieta Fire Code (California Fire Code, Title 24, Part 9, Appendix D – Fire Apparatus Access Roads), with the possible exception of dead-end road length (see Section 4.16, *Wildfire Hazards* for detailed information). Further measures will be taken to improve access to and through the site by not gating the community nor allowing speed bumps and limiting on-street parking (MM WH-2, see Section 4.16, page 4.16-25). No significant impacts are anticipated regarding emergency access impacts during Project operations.

Off-Site Operations Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Operations analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road.

MITIGATION MEASURES

Refer to above mitigation measures as well as mitigation measures in Section 4.16, *Wildfire Hazards*.

ADDITIONAL TRANSPORTATION CONSIDERATIONS – SB 743 VMT ANALYSIS

The OPR proposed comprehensive updates to the CEQA guidelines to the California Natural Resources Agency (CNRA) in January 2018. In late 2018, the CNRA finalized the updates to the CEQA Guidelines. In January 2019, the changes were approved by the Office of Administrative Law (OAL) and were filed with the Secretary of State. The updated Guidelines became effective on December 28, 2018. The revisions to the Guidelines are prospective and new requirements will apply to steps in the CEQA process not yet undertaken by the effective date of the revisions (CEQA Guidelines, §15007, subd. (b)). The revised Guidelines apply to a CEQA document only if the revised Guidelines are in effect when the document is sent out for public review (CEQA Guidelines, §15007, subd. (c)).[31]

Regulatory changes to the CEQA Guidelines that implement SB 743 were approved as part of the updated guidelines. The new changes are reflected below:

14 California Code of Regulations (CCR) §15064.3. Determining the Significance of Transportation Impacts.

Criteria for Analyzing Transportation Impacts.

1) **Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles

[31] Office of Planning and Research. (2019). *Current CEQA Guidelines Update*. Retrieved from OPR Website: http://opr.ca.gov/ceqa/updates/guidelines/. Accessed January 30, 2019.

traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

2) **Transportation Projects.** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

3) **Qualitative Analysis.** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

4) **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The TIA prepared for the Project was completed in November 2018, prior to the adoption of the new CEQA guidelines. However, the revised Guidelines, which became effective on December 28, 2018, apply to this document because they were in effect prior to the document being sent out for public review, which has not yet occurred. In follow-up, MBI prepared the *Vehicle Miles Traveled Analysis for the Murrieta Hills Specific Plan Project* (2019, see EIR Appendix 9.9.2). The cities of Murrieta and Menifee have not yet adopted policies or methodologies for evaluating traffic impacts using VMT. Measurements of transportation impacts may include VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. According to SB 743, projects should aim to reduce VMT and mitigate potential VMT impacts through the implementation of TDM strategies. Jurisdictions and agencies have until July 1, 2020 to implement VMT methodologies and policies, though agencies may opt-in use of new metrics prior to that date. The analysis below utilizes VMT to determine the significance of Project-generated transportation impacts and whether mitigation is required.

CONSTRUCTION

The Project site is currently vacant and does not offer any authorized roadway, pedestrian, bicycle, or public transit facilities. Because the Project site is vacant and does not provide official transportation corridors, a VMT analysis of existing conditions is not warranted. Current access to the Project site exists via Keller Road (partially paved) and Scenic View Drive (partially paved. Primary access for truck traffic into the Project site would be via Keller Road.

Construction of the Project would result in large construction equipment being transported in and out of the Project site, and construction-related traffic in the Project area. An increase in VMT upon

commencement of construction of the Project site is inevitable because the site is currently undeveloped. It is anticipated that large construction equipment would remain on-site for extended periods of time and not be transported in/out of the site daily. However, materials for Project construction would be delivered to the site by truck for the life of the Project. Additionally, during excavation and concrete stages of work, large equipment such as dump trucks and concrete mixers would be moving in and out of the Project site several times per day during their associated phases of construction. It is anticipated that construction workers would arrive at the construction site prior to the AM peak period and depart either prior to the PM peak period or after the PM peak period, depending upon specific work schedules. The number of construction workers would vary by construction stage, but in general, the number of workers would be highest during the finishing stages of each phase. Phase 1 is planned to open in year 2023. Phase 2 is planned to open in year 2028, and Phase 3 is planned to open in year 2031.

Because Project construction activities will introduce traffic, and therefore VMT, to the presently undeveloped Project area, it may be presumed to have a significant VMT impact. However, because the cities of Murrieta and Menifee have not adopted VMT thresholds or guidelines, the determination of the level of significance is for informational purposes only. Despite this being an informational exercise, MM GHG-1 (see Section 4.7, page 4.7-32) would decrease construction-related VMT, and therefore, reduce the temporary construction-related VMT impact. Note also that VMT impacts are factored into the air quality and greenhouse gas analyses, with applicable mitigation noted in Sections 4.2, *Air Quality* and 4.7*, Greenhouse Gas Emissions*.

Off-Site Construction Impacts

The McElwain Road extension construction will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Construction analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road.

OPERATIONS[32]

The VMT impact screening tool made available by the WRCOG was used to calculate VMT for this informational analysis. WRCOG reports VMT as total VMT per service population, residential home-based VMT per capita, and home-based VMT per capita. The City of Murrieta does not have their own guidelines and has not yet adopted VMT thresholds.

Determination of Project VMT

Figures 1 through 3 in EIR Appendix 9.9.2 display data from the WRCOG VMT Impact Screening Web-based maps for the Project site. To capture the entire Project site, data was selected in three sections as shown in Figures 1 through 3. VMT data gathered from the maps for the two Traffic Analysis Zones (TAZ) that include the Project site are summarized in Table 4.13-25, *VMT Summary Table for Murrieta Hills Specific Plan (TAZ 3843 & 3865)* below.

[32] *Vehicle Miles Traveled Analysis for the Murrieta Hills Specific Plan Project*. EIR Appendix 9.9.2.

Table 4.13-25: VMT Summary Table for Murrieta Hills Specific Plan (TAZ 3843 & 3865)

TAZ	Riverside County Traffic Analysis Model (RIVTAM)					
	Daily Total VMT per Service Population		Daily Residential Home-Based VMT per Capita		Daily Home-Based Work VMT per Worker	
	Jurisdictional Average	Project TAZ Average	Jurisdictional Average	Project TAZ Average	Jurisdictional Average	Project TAZ Average
3843	30.99	39.44	19.11	21.22	9.46	9.14
3865	37.87	68.59	19.04	31.5	14.83	0

Source: WRCOG Web-based Screening Tool (http://www.fehrandpeers.com/wrcog-sb743/)
RIVTAM: Riverside County Traffic Analysis Model (2012)

As shown in Table 4.13-25, the Project is included in TAZ 3843 and TAZ 3865. The Daily Total VMT per Service Population (population and employment), Daily Residential Home-Based VMT per Capita, and Daily Home-Based Work VMT per Worker are presented for each TAZ in Table 4.13-25. The Jurisdictional Average VMT represents the Riverside County VMT and the Project TAZ represents the VMT for the TAZs where the Project is proposed. Currently, the Project site is within unincorporated Riverside County and will be annexed into the City of Murrieta as part of this Project. However, the VMT is reported for the underlying jurisdiction which is currently Riverside County. According to the web-based maps, the average Project VMT is higher than the average Jurisdictional VMT for both the Daily Total VMT per Service Population and Daily Residential Home-Based VMT per Capita. For the Daily Home-Based Work VMT per Worker, the average Project VMT is lower than the average Jurisdictional VMT. This information indicates the Project may be presumed to have a VMT impact since the average Project VMTs are higher than the average Jurisdictional VMTs.

Evaluation of Project VMT

In this analysis, because the City of Murrieta has not yet adopted specific standards, the WRCOG SB 743 VMT Impact Screening Tool was utilized for the Project. WRCOG's evaluation of VMT is based on the following screening criteria:

1) Evaluate for Transit Priority Area (TPA),
2) Low VMT Area Screening,
3) Project Type Screening, and
4) VMT Analysis using RIVTAM.

The VMT screening process outlined in the SB 743 VMT Impact Screening Tool developed for WRCOG (http://www.fehrandpeers.com/wrcog-sb743/).

Identification of TDM Measures

The TIA dated November 2018 prepared for the Project identifies feasible mitigation measures that reduce Project traffic impacts in accordance with the City's currently adopted TIA guidelines. TDM measures were not specifically identified in the TIA. However, MM GHG-1 (see Section 4.7, page 4.7-32) identifies a variety of emissions reduction and TDM measures that both reduce Project vehicle trips (TDM measures) and reduce Project-related GHG emissions (the end goal of VMT reduction strategies). TDM strategies focus on identifying alternatives to SOV use and can be used to offset VMT impacts.

WRCOG has identified the following potential VMT reduction strategies:

- Increase diversity of land uses.
- Provide pedestrian network improvements.
- Provide traffic calming measures and low-stress bicycle network improvements.
- Implement car-sharing program.
- Increase transit service frequency and speed.
- Encourage telecommuting and alternative work schedules.
- Provide ride-sharing programs.

A review of the TDM measures identified by WRCOG determined that the Project has incorporated features that may be considered TDM measures including an increase in diversity of urban and suburban developments, providing pedestrian network improvements, providing traffic calming measures, and providing low-stress bicycle network improvements.

To determine the potential VMT benefits associated with each of these TDM measures, the California Air Pollution Control Officers Association (CAPCOA) report *Quantifying Greenhouse Gas Mitigation Measures*[33] (August 2010) was used. Based on review of the Specific Plan and Tentative Tract Map, and in consideration of TDM measures identified in MM GHG-1 (see Section 4.7, page 4.7-32), a total VMT reduction of 11.125 percent would be appropriate for the Project (refer to EIR Appendix 9.9.2 for a detailed discussion).

Conclusion

The SB 743 VMT Impact Screening Tool indicated the Project is not located within a TPA or a Low VMT Area. The Project also exceeds the 50,000 square foot limit for local serving retail projects. The VMT data indicates the Project may be presumed to have a VMT impact since the average Project VMTs are higher than the average Jurisdictional VMTs according to the WRCOG screening tool. Based on the identified TDM measures, a VMT reduction of 11.125 percent could be applied to the Project. The majority of the VMT reduction (nine percent) is attributed to the diversity of land uses proposed on the Project site.

At this time, the City does not have a threshold of significance approved for VMT analysis. Therefore, this SB743 VMT analysis is being provided for informational purposes. Based on the WRCOG recommended guidance, the Project VMT exceeds the VMT for the local jurisdiction using the WRCOG Screening Tool. As stated above, the Project features would reduce project VMT by as much as 11 percent when the CAPCOA Guidelines are used. This 11 percent reduction would not bring the Project VMT below the average VMT for the local jurisdiction. The maximum VMT reduction that is considered reasonable is 15 percent according to CAPCOA, although even a 15 percent VMT reduction will not bring the Project VMT below the average VMT for the local jurisdiction.

[33] CAPCOA. (2010). *Quantifying Greenhouse Gas Mitigation Measures*. Accessible at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

Off-Site Operations Impacts

The McElwain Road extension operations will occur in the southeast corner of the Project area, within proximity to the Greer Ranch residential community. The above Operations analysis will also apply to the road extension and the utility improvements along Keller Road and Zeiders Road.

MITIGATION MEASURES

Refer to MM GHG-1 (see Section 4.7, page 4.7-32).

4.13.6 CUMULATIVE IMPACTS

The analysis for existing conditions and various "build" scenarios addressed under Impact 4.13-1 includes traffic conditions in local jurisdictions for cumulative conditions with and without the MHSPA. The list of related projects incorporated in the analysis, as well as the assumptions incorporated as background, account for ambient traffic growth for long-term future conditions. Implementation of the MHSPA would result in a Project-specific significant impact at several intersections and roadway segments within the traffic study area. Summaries of the previously discussed scenarios that consider cumulative projects are as follows:

- *Scenario D - Forecast Year 2023 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Phase 1 Conditions*: This scenario considered 24 cumulative projects in the analysis. See Appendix I of the TIA in EIR Appendix 9.9.1 for cumulative project locations. This analysis found that five study intersections and four study roadway segments are forecast to operate at a deficient LOS. Measures were identified to mitigate impacts at study intersections and analysis of peak hour conditions for the roadway segments did not identify a capacity deficiency during the critical hours. However, full funding and construction of the mitigation measures and assumed modification to the roadway circulation system is not guaranteed. Therefore, the impact is potentially significant and unavoidable.

- *Scenario F - Forecast Year 2028 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Phases 1 and 2 Conditions*: This scenario assumes construction of Phases 1 and 2 of the Kaiser Permanente Medical Center cumulative project and buildout of all the remaining 23 cumulative projects. This analysis found that two study intersections and four study roadway segments are forecast to operate at a deficient LOS. Measures were identified to mitigate impacts at study intersections and analysis of peak hour conditions for the roadway segments did not identify a capacity deficiency during the critical hours. However, full funding and construction of the mitigation measures is not guaranteed. Therefore, the impact is potentially significant and unavoidable.

- *Scenario H - Forecast Year 2031 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions*: This scenario assumes construction of Phases 1, 2 and 3 of the Kaiser Permanente Medical Center cumulative project and buildout of all the remaining 23 cumulative projects. This analysis found that three study intersections and five study roadway segments are forecast to operate at a deficient LOS. Measures were identified to mitigate impacts at study intersections and analysis of peak hour conditions for the roadway segments did not identify a capacity deficiency during the critical hours. However, full funding and construction of the

mitigation measures and assumed modification to the roadway circulation system is not guaranteed. Therefore, the impact is potentially significant and unavoidable.

- *Scenario J - Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions*: This scenario assumes full construction and buildout of the Kaiser Permanente Medical Center cumulative project and buildout of all the remaining 23 cumulative projects. This analysis found that no study intersections and one study roadway segment are forecast to operate at a deficient LOS. Analysis of peak hour conditions for the roadway segment did not identify a capacity deficiency during the critical hours. However, full funding and construction of the assumed modification to the roadway circulation system is not guaranteed. Therefore, the impact is potentially significant and unavoidable.

According to *Section 5.0: Additional Required CEQA Topics* of the County of Riverside EIR No. 521 (a companion document to the County GP which analyzes impacts of the GP and mitigation), buildout of the Riverside County GP would result in cumulatively considerable increases in traffic levels resulting in decreases in roadway segments operating at acceptable standards at various locations throughout Riverside County. As a result, some roadways within Riverside County would also conflict with applicable CMP standards or policies, such as LOS standards and TDMs. Implementation of the various regulatory programs and mitigation measures would help reduce the cumulative impacts but would not be fully sufficient to ensure that all cumulative impacts are reduced to less than significant levels. [34]

According to the City of *Murrieta GP 2035 EIR, Section 5.4: Traffic and Circulation*, buildout of the Murrieta GP would result in cumulatively considerable traffic and circulation impacts. Development associated with buildout of the Murrieta GP would involve an increase in residential development and non-residential development. Increased development would result in study intersections and roadway segments operating at a deficient LOS. Even with application of enhanced geometrics to study intersections, some study intersections and roadway segments are still forecasted to operate at a deficient LOS.[35]

As demonstrated in the Riverside County GP and Murrieta GP transportation analyses, buildout of each jurisdiction would result in cumulatively considerable impacts to traffic and circulation. In addition, the Project's cumulative transportation impacts to intersections and roadway segments under most scenarios are significant and unavoidable. Although the TIA, and this DEIR section, identify improvements that can fully mitigate all Project impacts for all evaluated scenarios, and the identified off-site improvements are primarily needed for cumulative conditions (not just Project impacts), these improvements are within other jurisdictions outside the control of the City of Murrieta and/or are not fully funded. Therefore, the cumulative impact at these off-site locations is considered a potentially unavoidable significant impact and the Project's contribution toward cumulative impacts is considered "cumulatively considerable."

4.13.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Despite PDFs, assumed transportation network improvements, and mitigation measures identified above (and in the TIA for several Project scenarios through Year 2035), full funding and construction of the

[34] Riverside County Planning Department. (2015). *County of Riverside Environmental Impact Report No. 521, Section 5.0: Additional Required CEQA Topics*. Page 5-179. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/05-00_AdditionalTopics.pdf. Accessed August 8, 2019.

[35] City of Murrieta. (2015). *Final Environmental Impact Report, Murrieta General Plan 2035. Section 5.4: Traffic and Circulation*. Page 5.4-97. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/786/05-04---Traffic-and-Circulation-PDF. Accessed August 8, 2019.

mitigation measure's improvements in other jurisdictions (the cities of Wildomar and Menifee, and Caltrans for the I-215 interchange improvements) are not guaranteed, resulting in a potentially significant and unavoidable impact for improvements in other jurisdictions or not fully funded.

4.13.8 REFERENCES

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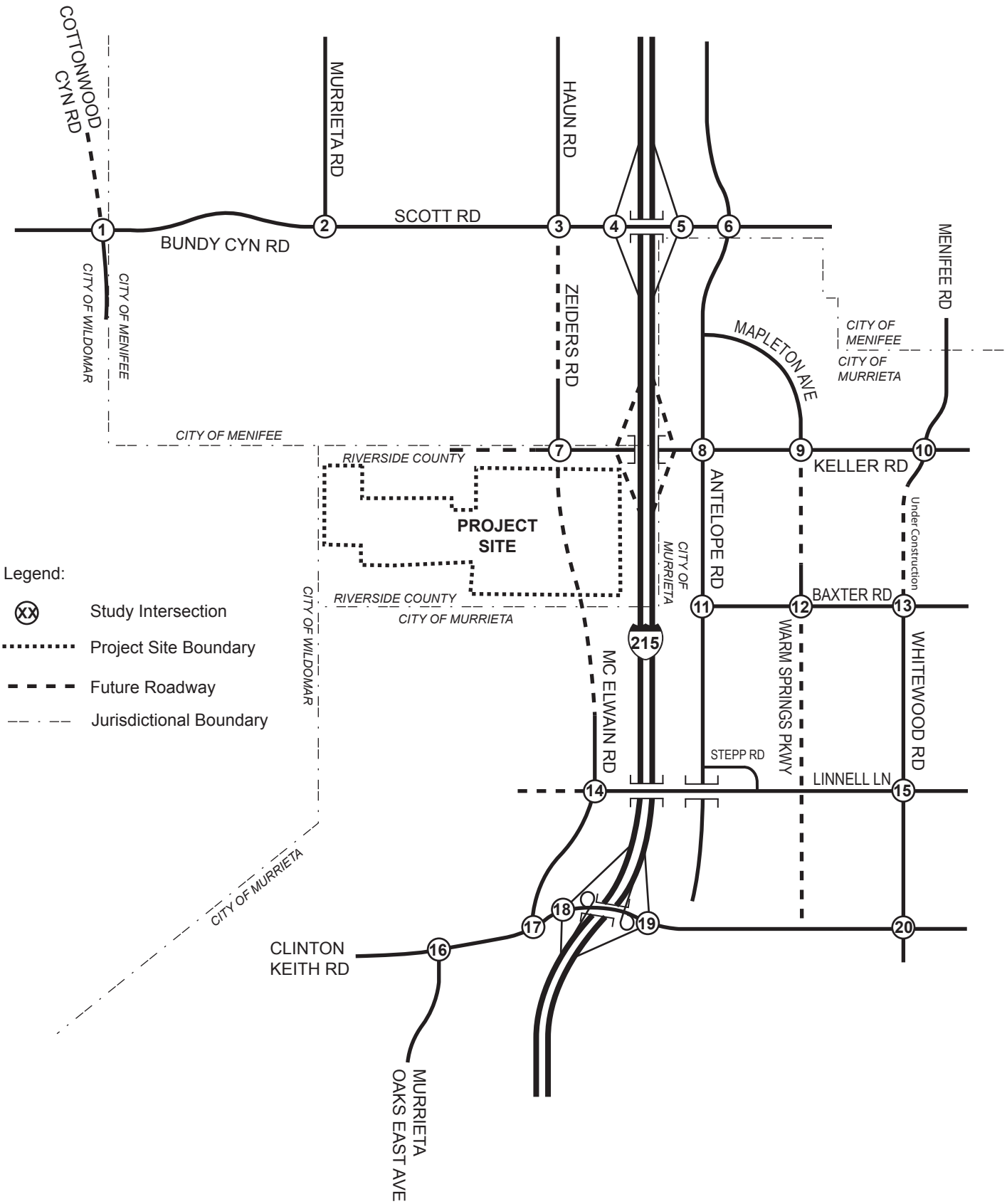
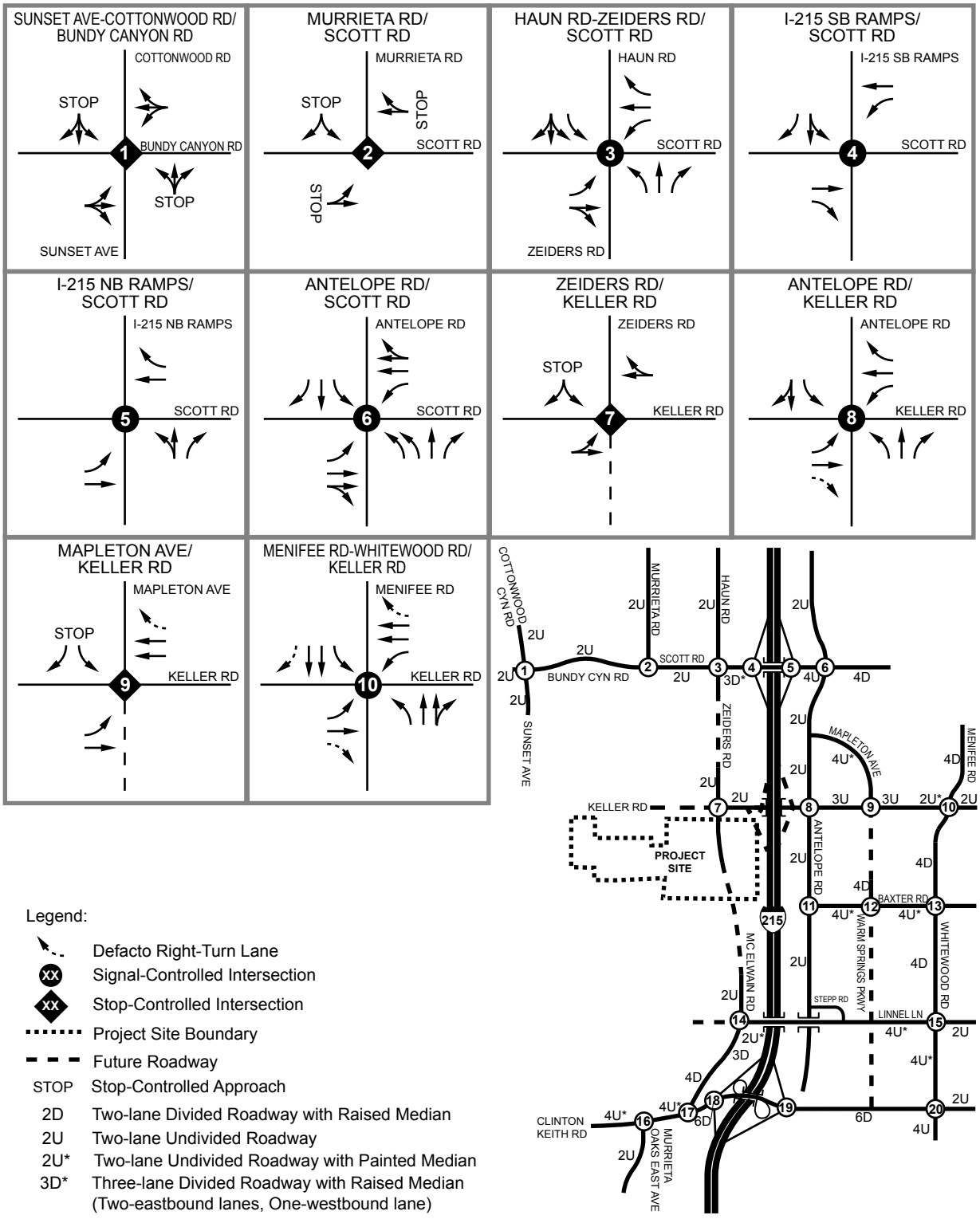


Source: Traffic Impact Analysis, Exhibit 3

Not to Scale

EXHIBIT 4.13-1: Existing Year 2017 Study Intersection Locations
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Legend:

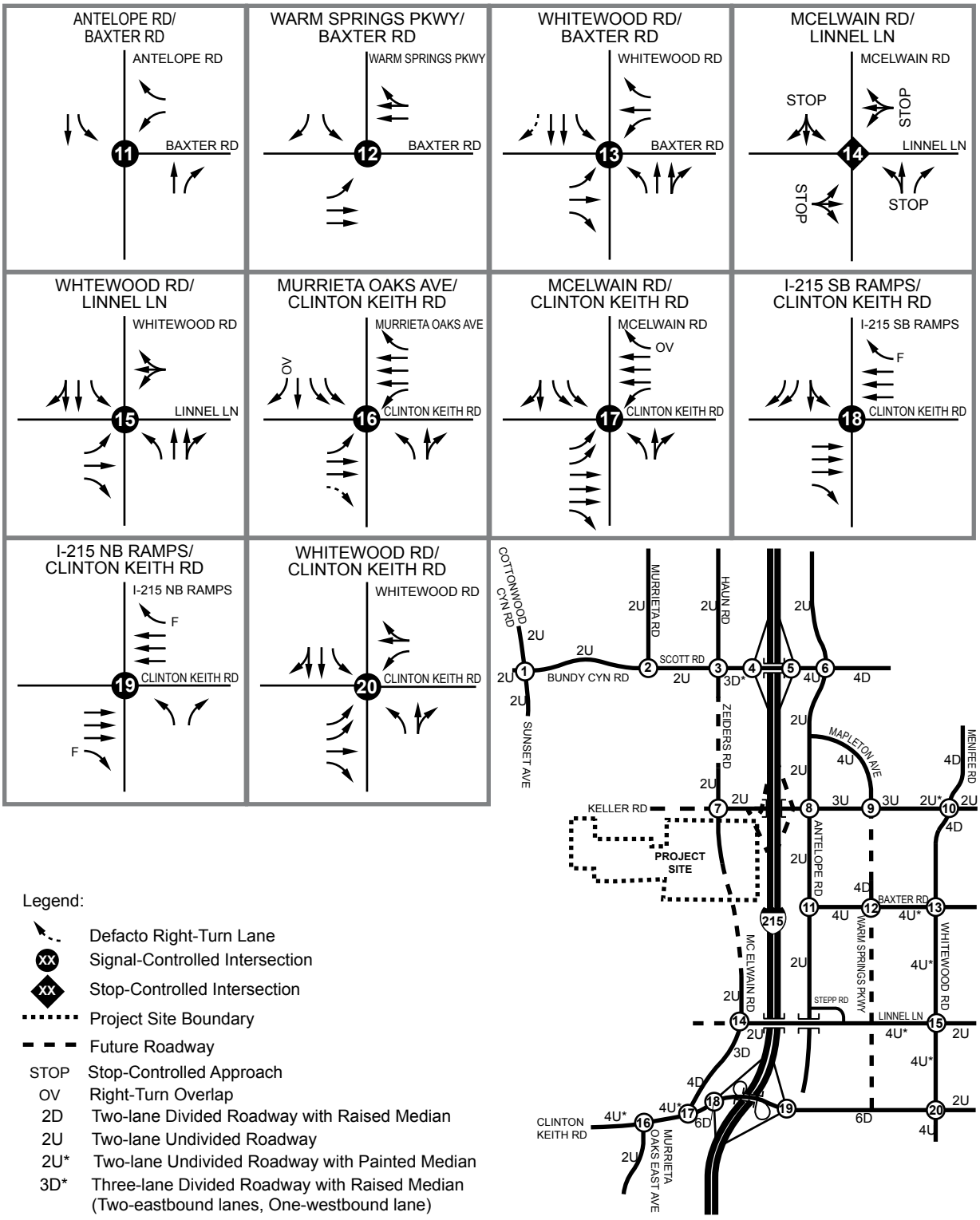
- Defacto Right-Turn Lane
- XX Signal-Controlled Intersection
- XX Stop-Controlled Intersection
- Project Site Boundary
- Future Roadway
- STOP Stop-Controlled Approach
- 2D Two-lane Divided Roadway with Raised Median
- 2U Two-lane Undivided Roadway
- 2U* Two-lane Undivided Roadway with Painted Median
- 3D* Three-lane Divided Roadway with Raised Median (Two-eastbound lanes, One-westbound lane)
- 3D Three-lane Divided Roadway with Raised Median (Two-northtbound lanes, One-southbound lane)
- 3U Three-lane Undivided Roadway (Two-westbound lanes, One-eastbound lane)
- 4D Four-lane Divided Roadway with Raised Median
- 4U Four-lane Undivided Roadway
- 4U* Four-lane Undivided Roadway with Painted Median
- 6D Six-lane Divided Roadway with Raised Median

Not to Scale

Source: Traffic Impact Analysis, Exhibit 9

EXHIBIT 4.13-2: Area 1 Existing Study Intersection Geometry
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Legend:

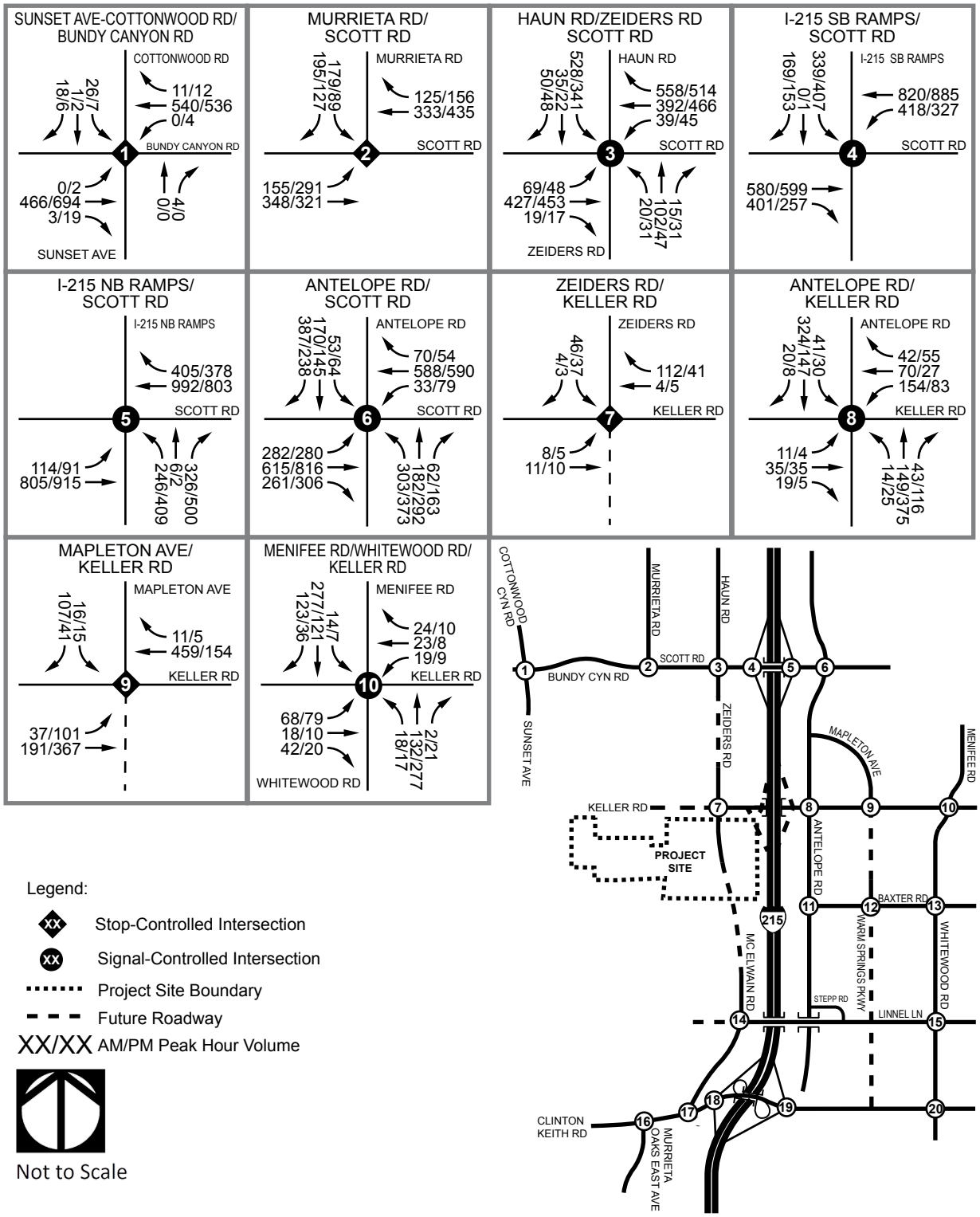
- Defacto Right-Turn Lane
- XX Signal-Controlled Intersection
- XX Stop-Controlled Intersection
- Project Site Boundary
- Future Roadway
- STOP Stop-Controlled Approach
- OV Right-Turn Overlap
- 2D Two-lane Divided Roadway with Raised Median
- 2U Two-lane Undivided Roadway
- 2U* Two-lane Undivided Roadway with Painted Median
- 3D* Three-lane Divided Roadway with Raised Median (Two-eastbound lanes, One-westbound lane)
- 3D Three-lane Divided Roadway with Raised Median (Two-northtbound lanes, One-southbound lane)
- 3U Three-lane Undivided Roadway (Two-westbound lanes, One-eastbound lane)
- 4D Four-lane Divided Roadway with Raised Median
- 4U Four-lane Undivided Roadway
- 4U* Four-lane Undivided Roadway with Painted Median
- 6D Six-lane Divided Roadway with Raised Median

Not to Scale

Source: Traffic Impact Analysis, Exhibit 10

EXHIBIT 4.13-3: Area 2 Existing Study Intersection Geometry
Murrieta Hills Specific Plan Amendment

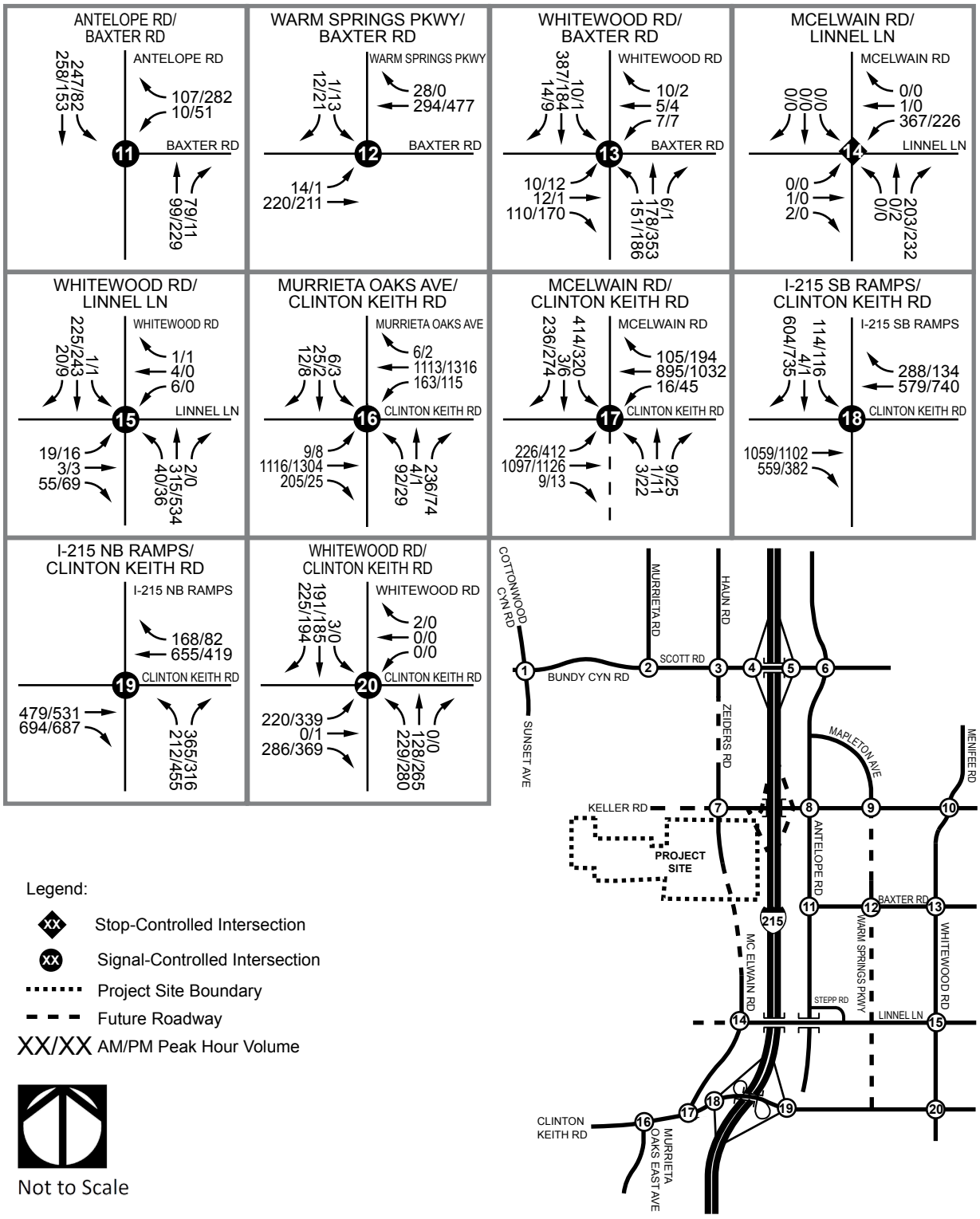
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 7

EXHIBIT 4.13-4: Area 1 Existing AM & PM Peak Hour Study Intersection Volumes
Murrieta Hills Specific Plan Amendment

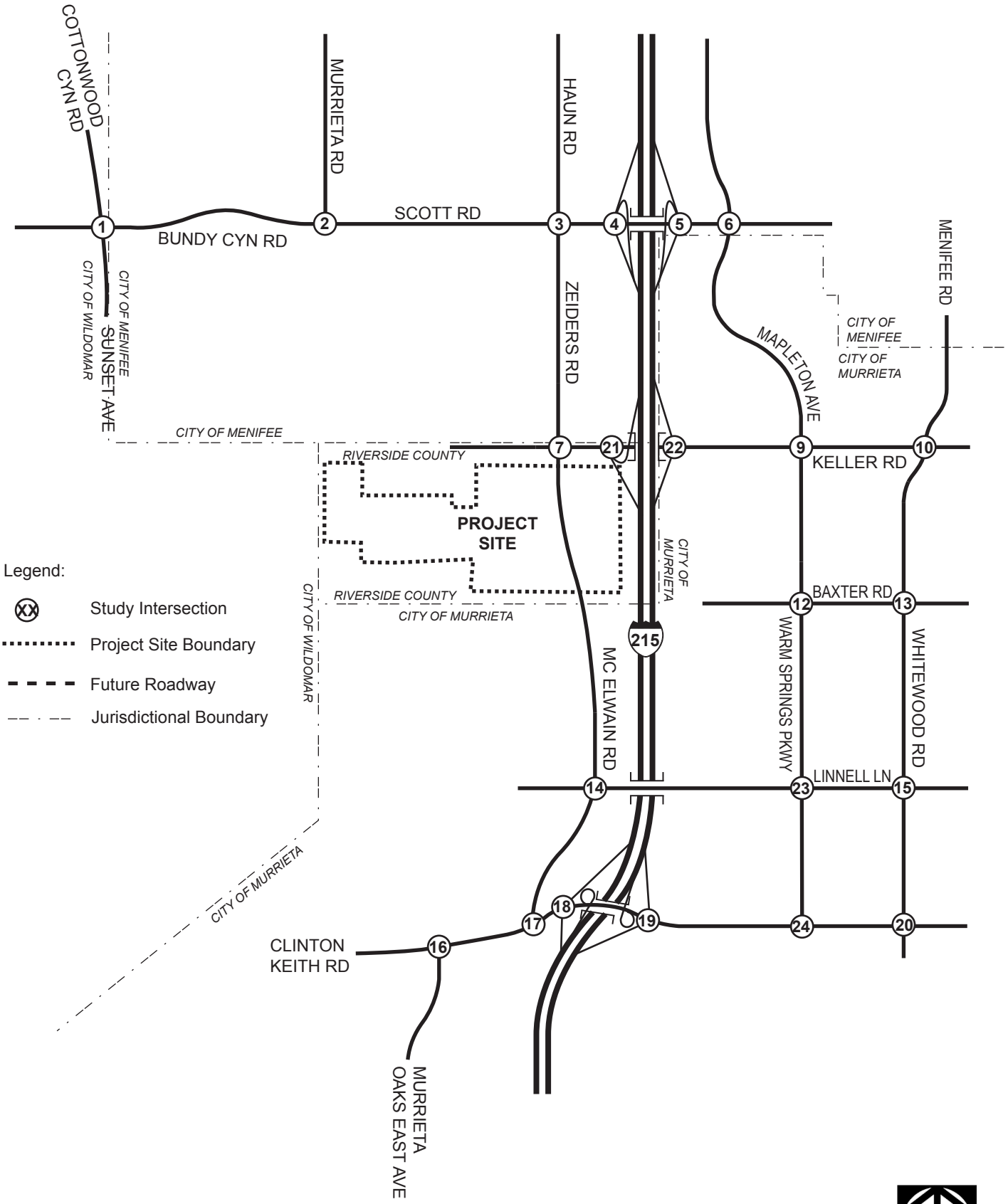
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 8

EXHIBIT 4.13-5: Area 2 Existing AM & PM Hour Study Intersection Volumes
Murrieta Hills Specific Plan Amendment

Kimley»Horn

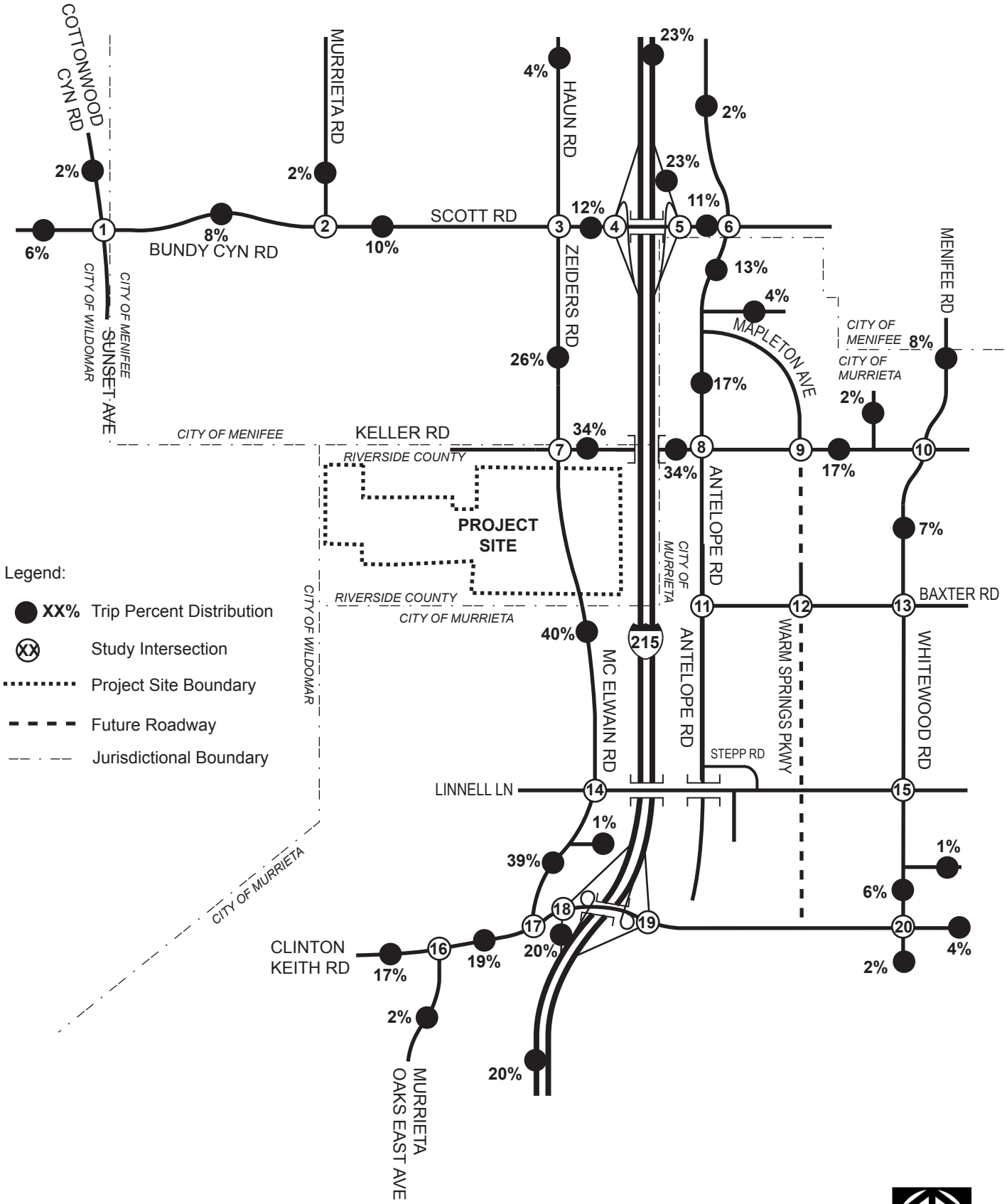


Not to Scale

Source: Traffic Impact Analysis, Exhibit 6

EXHIBIT 4.13-6: Phase 3-Year 2031 & Forecast Year 2035 Study Area Circulation System & Study Intersection Locations
Murrieta Hills Specific Plan Amendment

Kimley»Horn

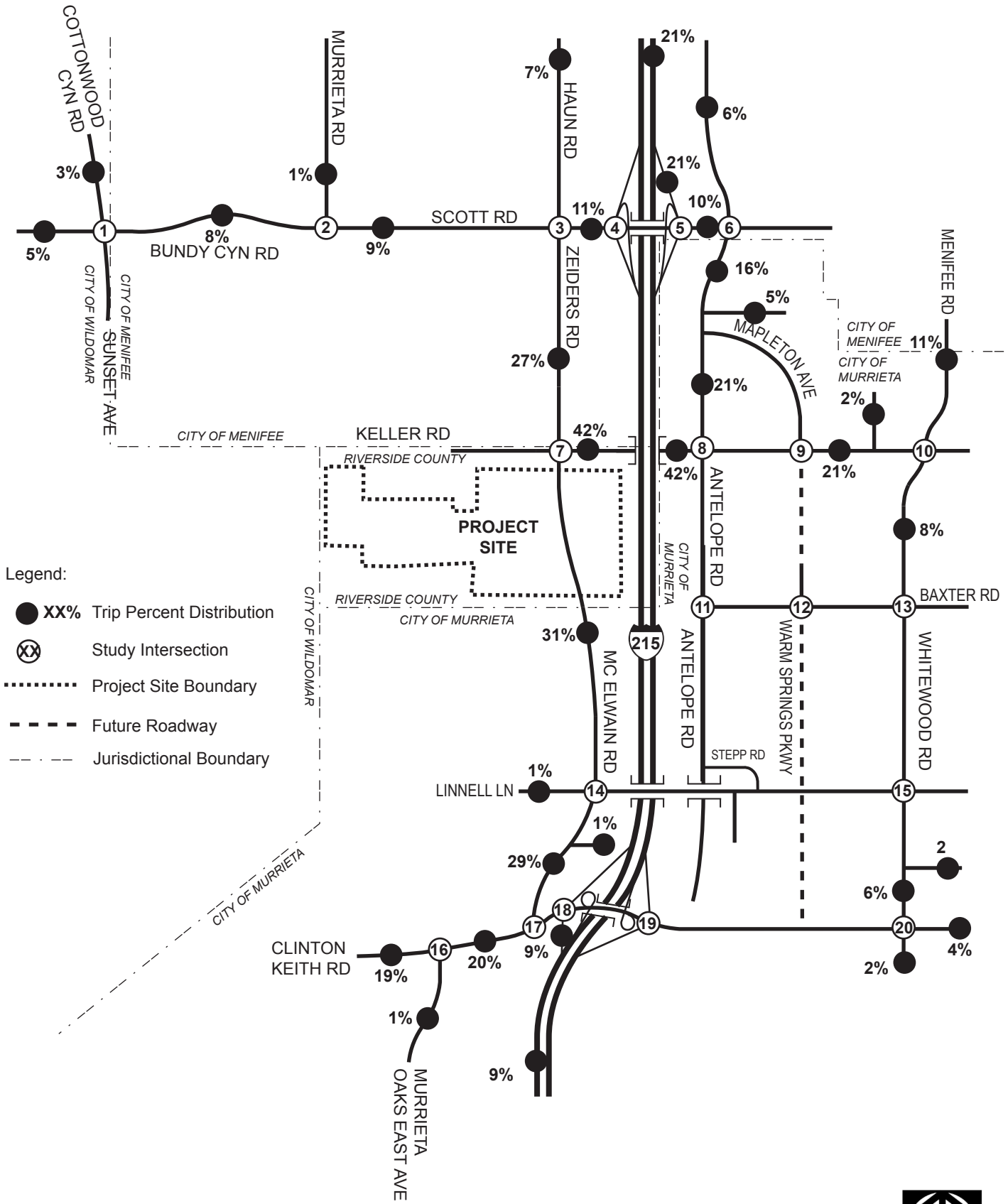


Not to Scale

Source: Traffic Impact Analysis, Exhibit 12

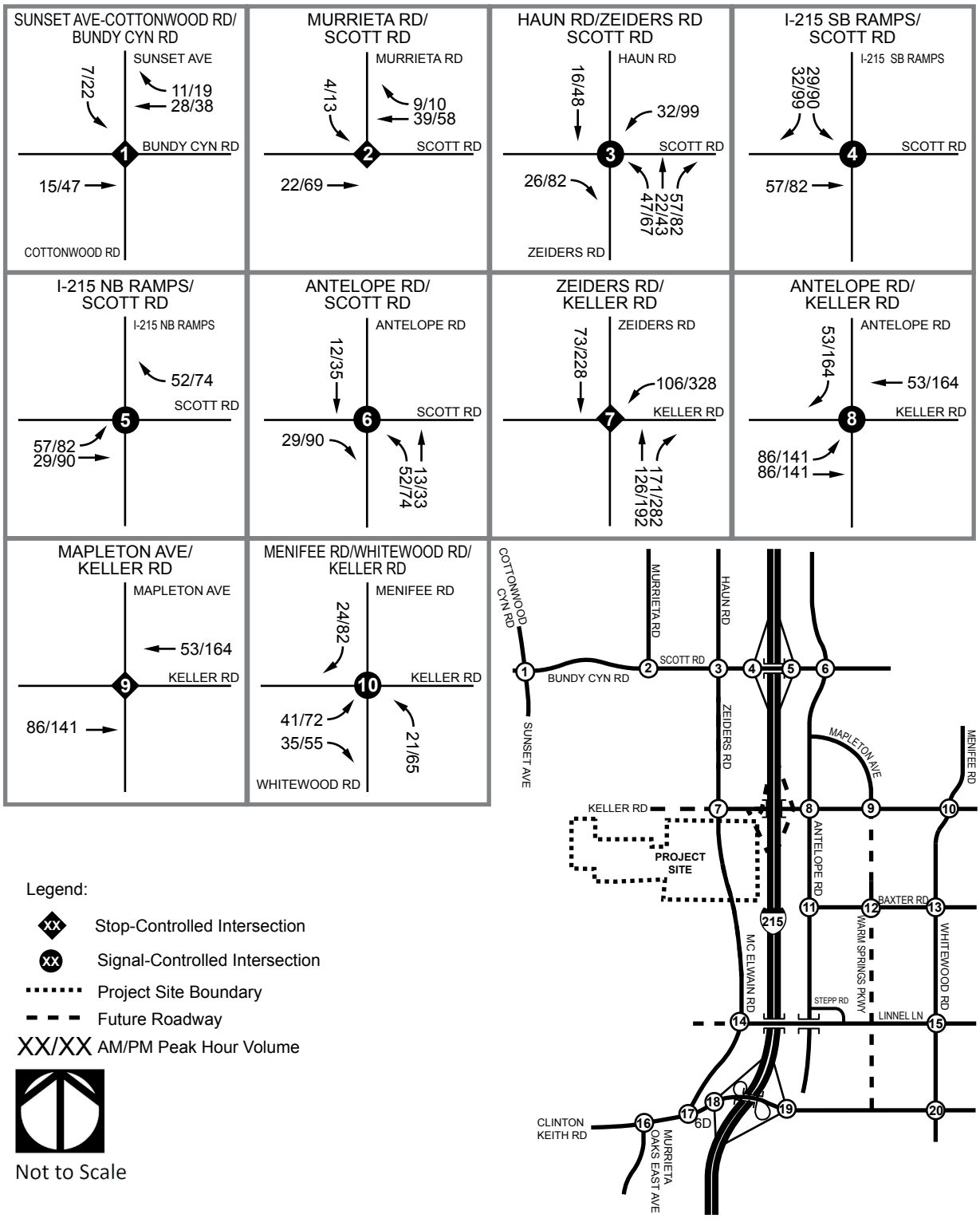
EXHIBIT 4.13-7: Forecast Existing Plus Project Trip Percent Distribution of Proposed Project (Residential Component)
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 13

EXHIBIT 4.13-8: Forecast Existing Plus Project Trip Percent Distribution of Proposed Project (Retail Component)
Murrieta Hills Specific Plan Amendment

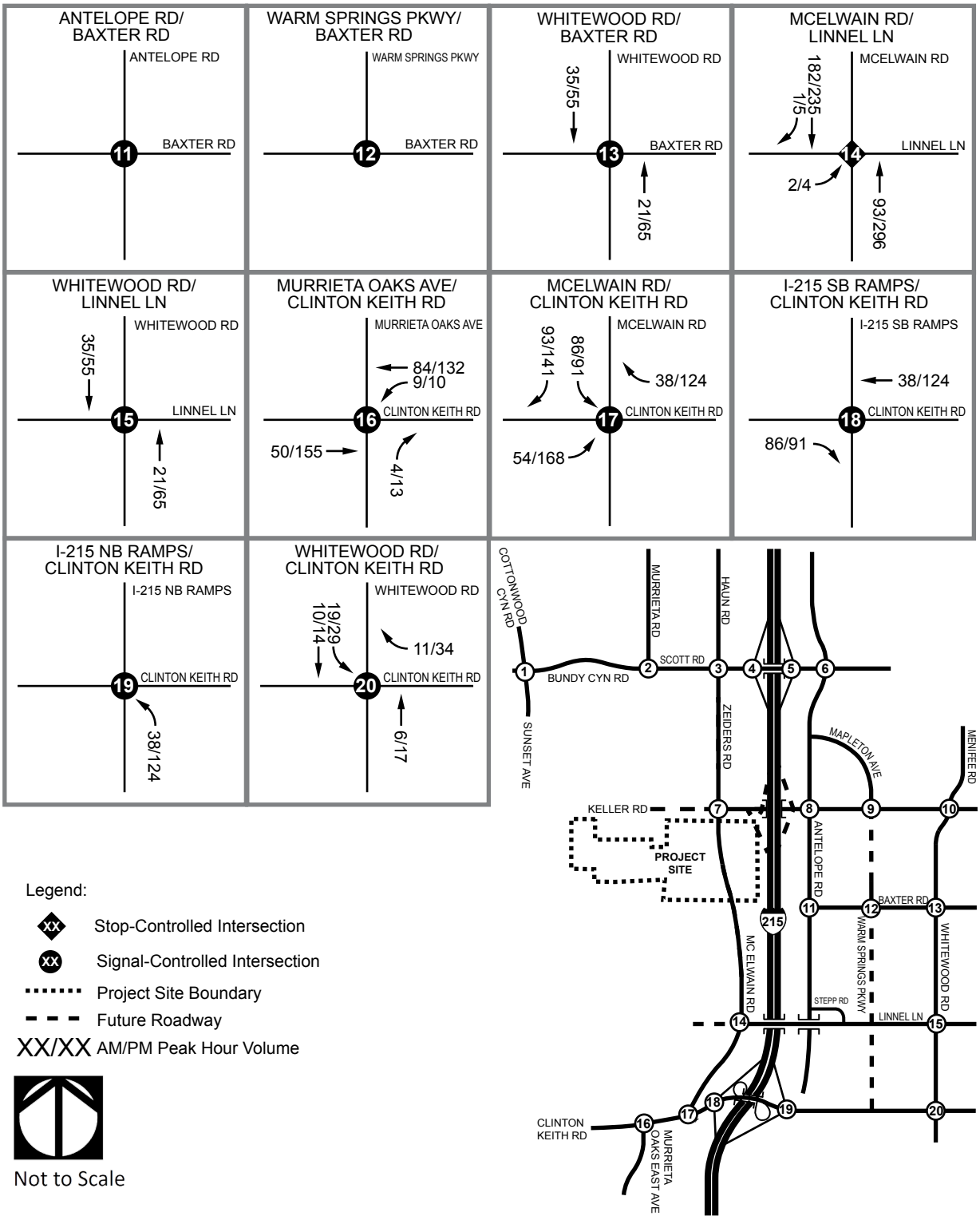


Source: Traffic Impact Analysis, Exhibit 20

EXHIBIT 4.13-9: Area 1 Forecast Existing Plus Project Buildout Conditions AM & PM Trip Assignment of Proposed Project

Murrieta Hills Specific Plan Amendment

Kimley»Horn

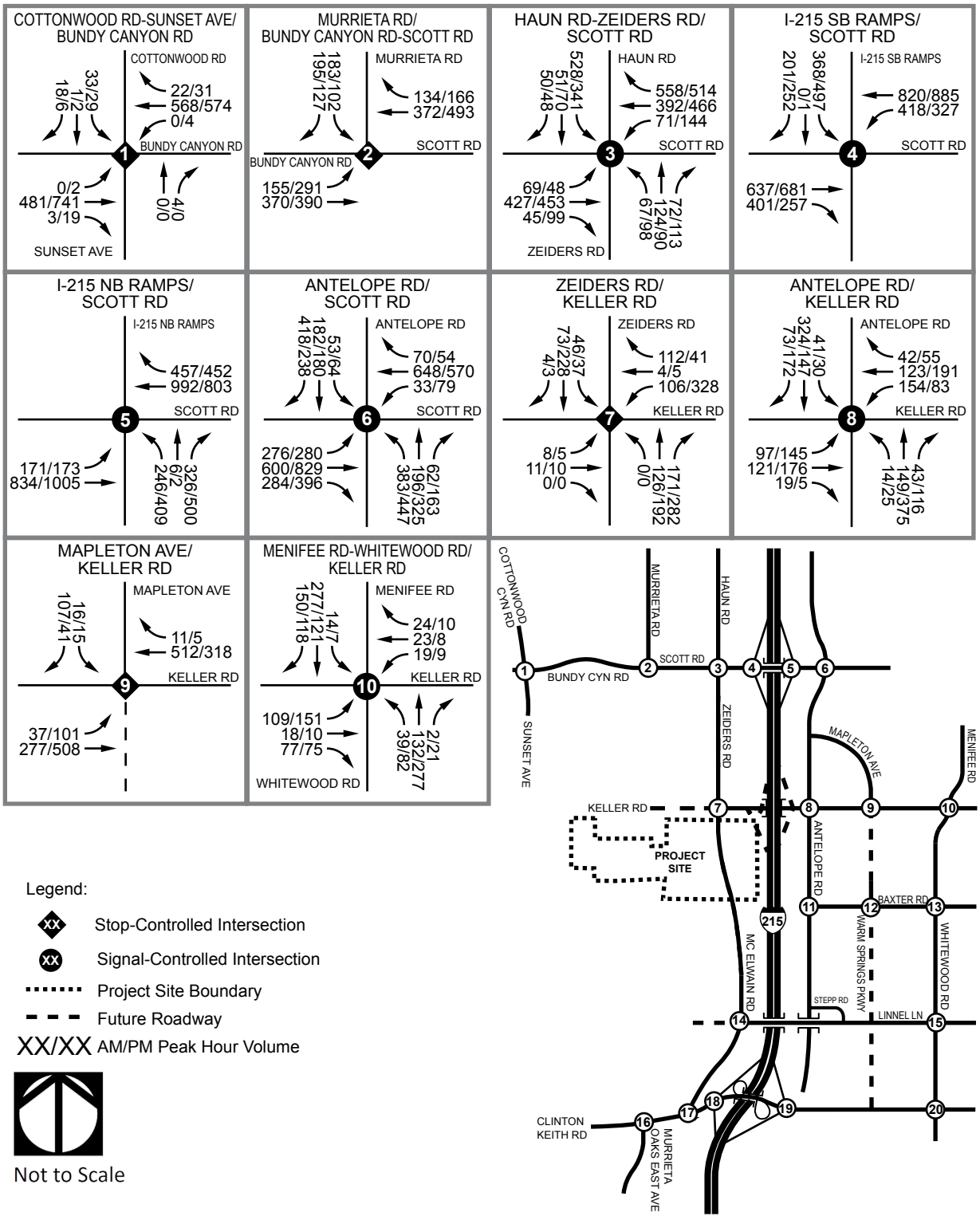


Source: Traffic Impact Analysis, Exhibit 21

EXHIBIT 4.13-10: Area 2 Forecast Existing Plus Project Buildout Conditions AM & PM Trip Assignment of Proposed Project

Murrieta Hills Specific Plan Amendment

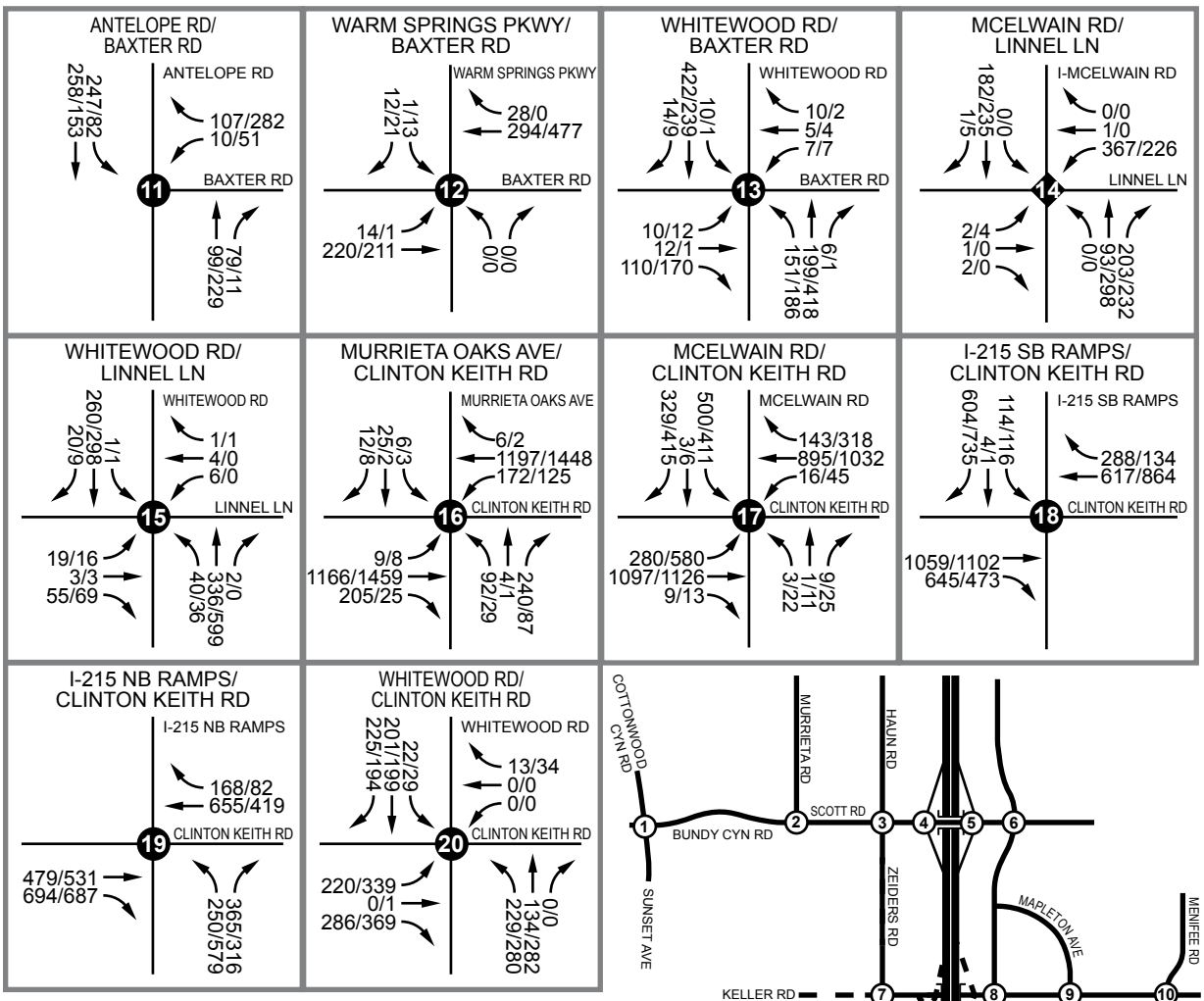
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 30

EXHIBIT 4.13-11: Area 1 Forecast Existing Plus Project Buildout Conditions AM & PM Peak Hour Study Intersection Volumes
Murrieta Hills Specific Plan Amendment

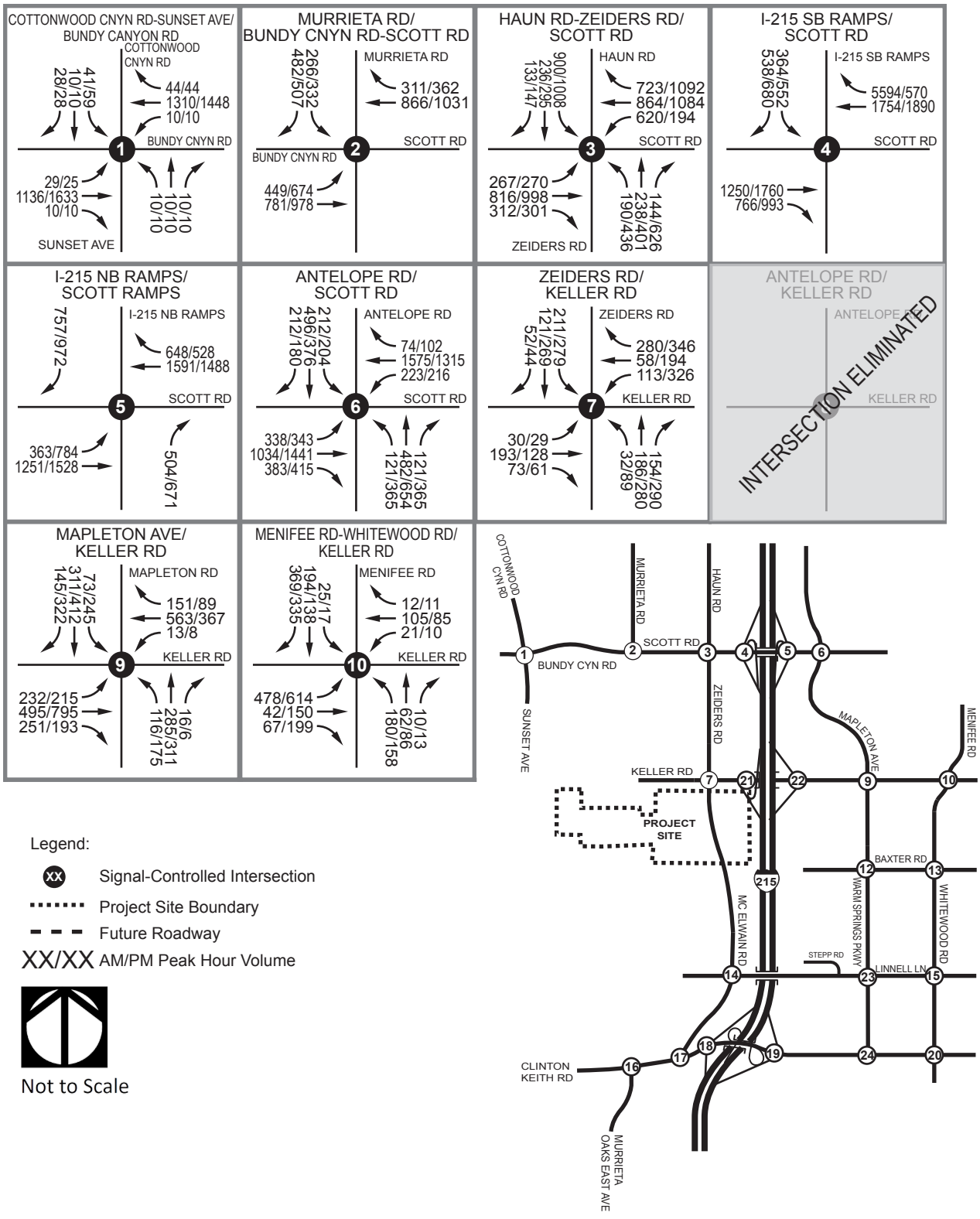
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 31

EXHIBIT 4.13-12: Area 2 Forecast Existing Plus Project Buildout Conditions AM & PM Peak Hour Study Intersection Volumes
Murrieta Hills Specific Plan Amendment

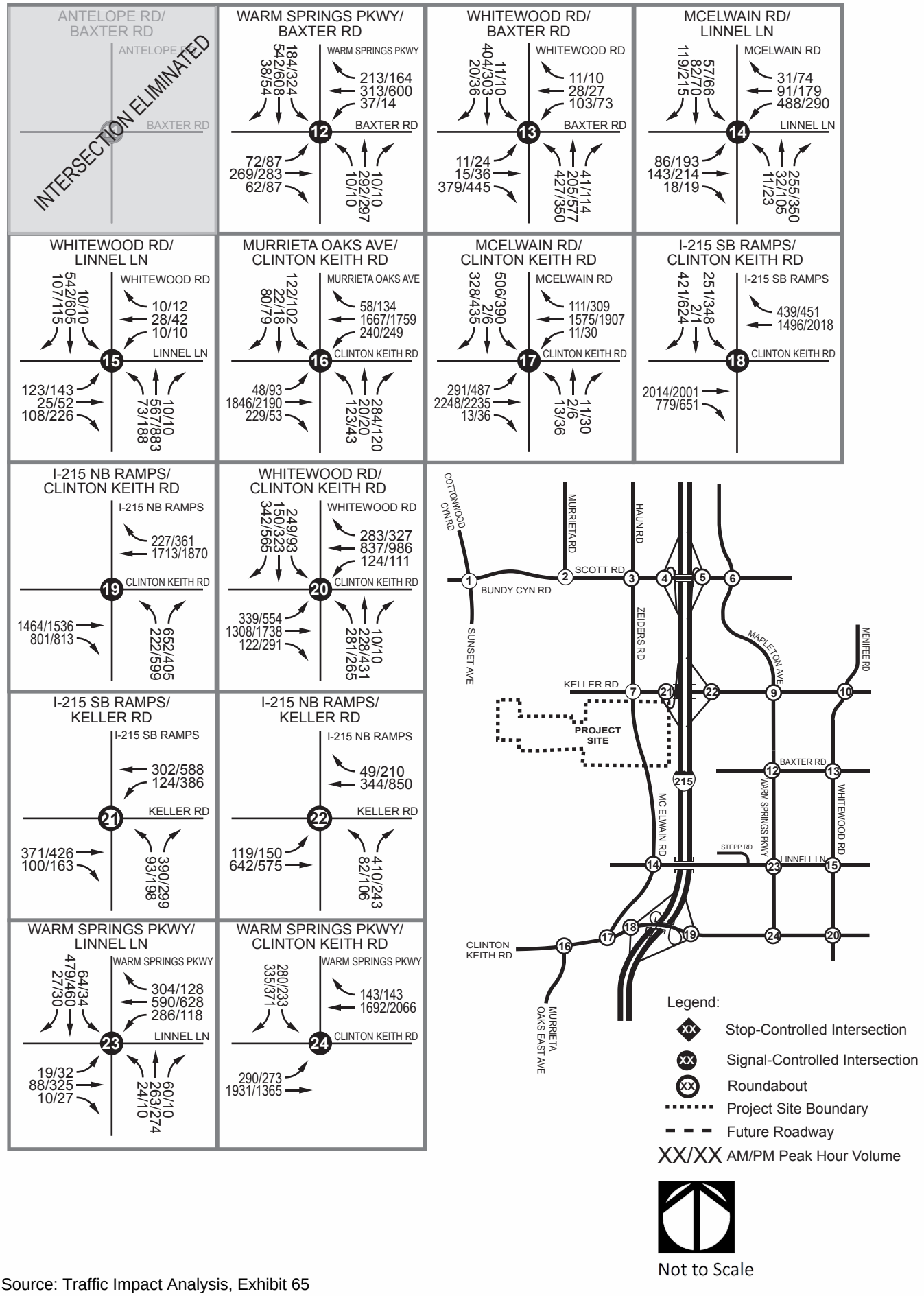
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 64

EXHIBIT 4.13-13: Area 1 Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions AM & PM Peak Hour Study Intersection Volumes
Murrieta Hills Specific Plan Amendment

Kimley»Horn

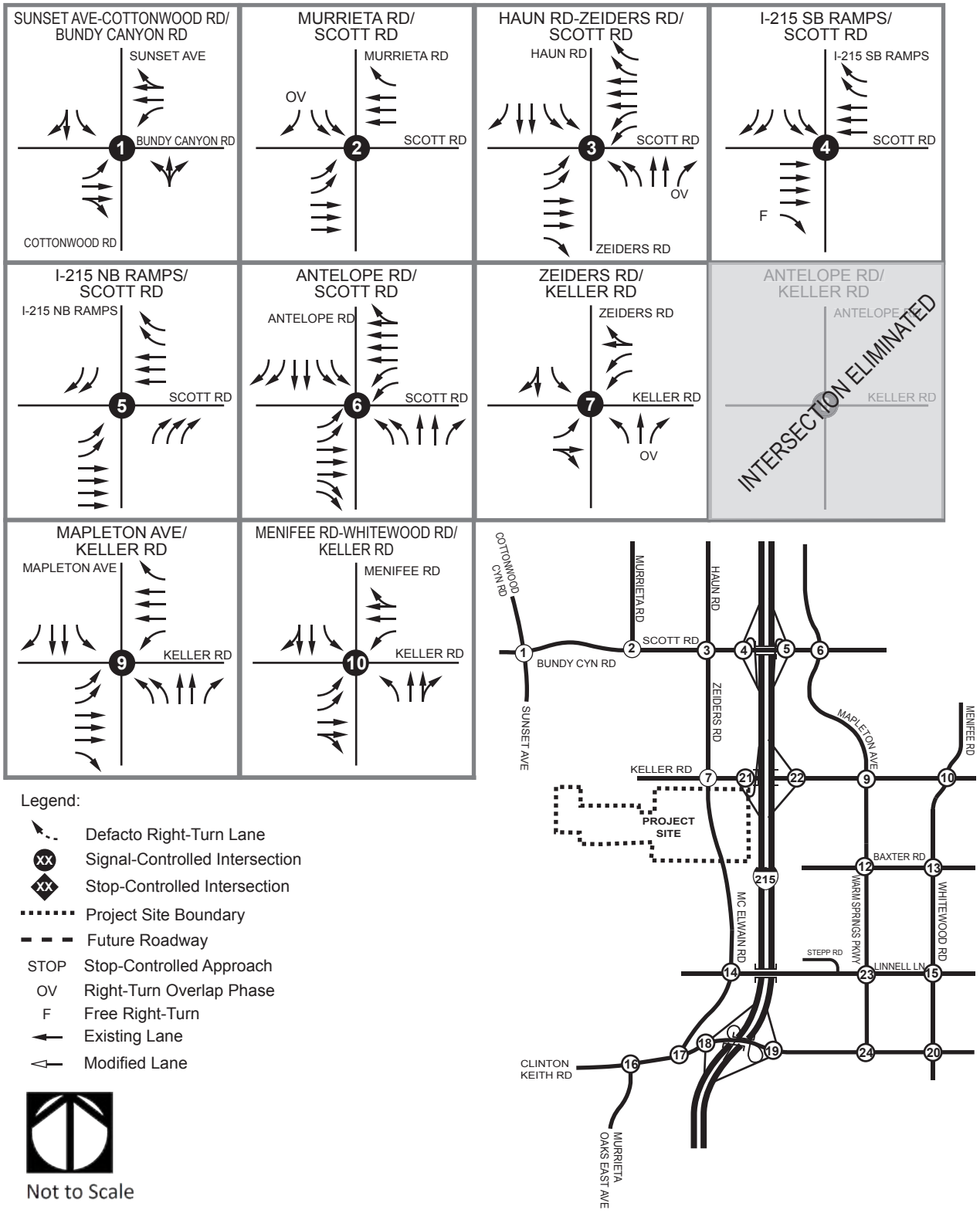


Source: Traffic Impact Analysis, Exhibit 65

EXHIBIT 4.13-14: Area 2 Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions AM & PM Peak Hour Study Intersection Volumes

Murrieta Hills Specific Plan Amendment

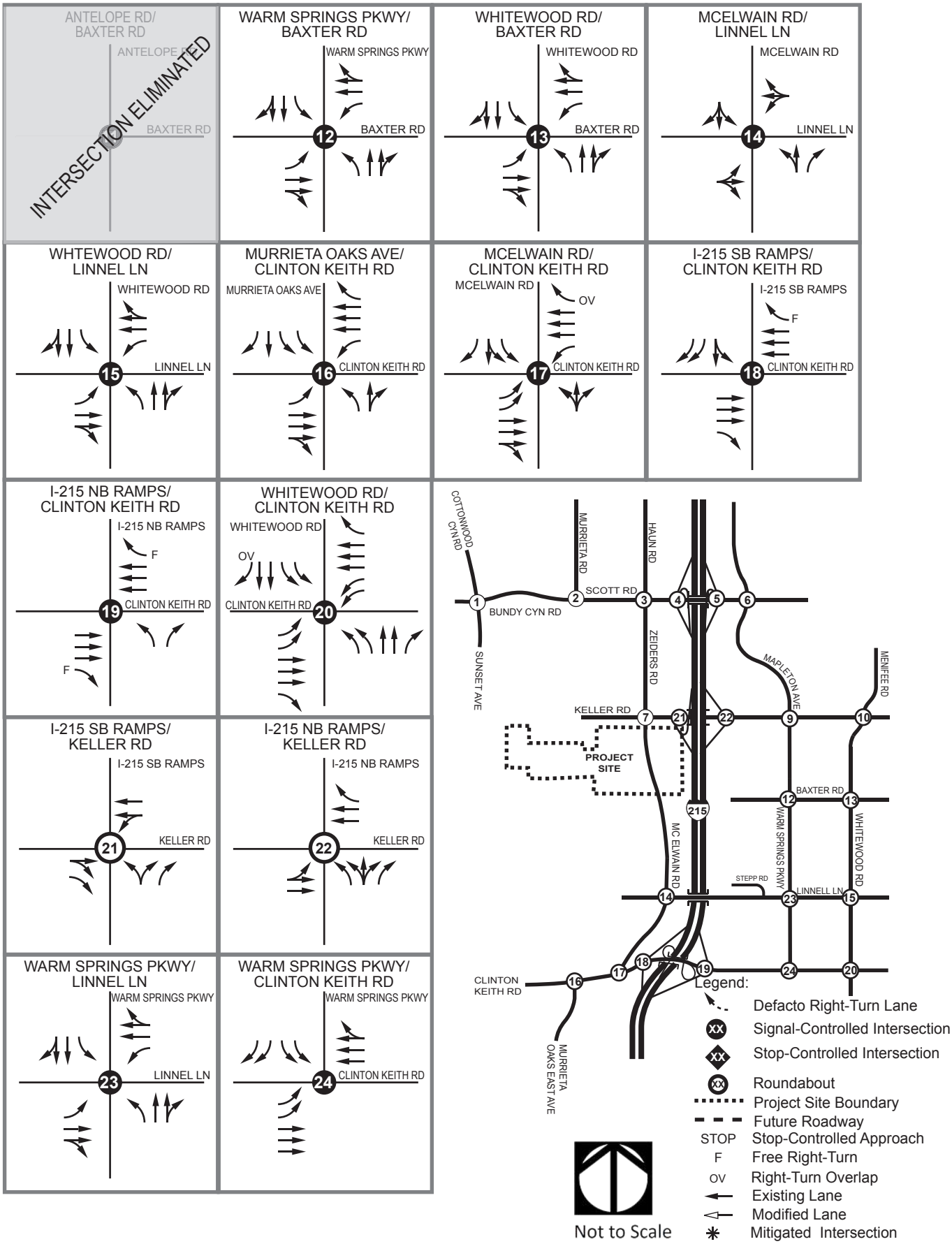
Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 66

EXHIBIT 4.13-15: Area 1 Mitigated Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions Study Intersection Geometry
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: Traffic Impact Analysis, Exhibit 67

EXHIBIT 4.13-16: Area 2 Mitigated Forecast Year 2035 Existing Plus Ambient Growth Plus Cumulative Projects Plus Project Buildout Conditions Study Intersection Geometry
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.14 TRIBAL CULTURAL RESOURCES

4.14.1 INTRODUCTION

This section examines potential impacts related to tribal cultural resources (TCRs) that could result from implementation of the Murrieta Hills Specific Plan Amendment (MHSPA or Project). The analysis is based primarily on cultural resource studies that are contained in EIR Confidential Appendix 9.4, *Cultural Resources Reports*, including: *Final Traditional Cultural Properties Management Summary* (TCP Report [Bright, 2020]); *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*[1] (Phase 1 Report [Pentney, 2014]); and *Murrieta Hills* Specific *Plan Amendment Phase II Test and Evaluation Report* (Phase 2 Report [Pentney, 2017]), which presents results of the Phase 2 testing and investigations and summarizes a number of previous investigations on the parcels. This analysis also includes information obtained during consultations with the Pechanga Band of Luiseño Indians (Pechanga Tribe), as well as ethnographic information derived from the review of a written ethnography dated February 2017 prepared by the Pechanga Tribe (the Tribal Ethnography) and made available for inspection by the Project's consultant[2]. In February 2020, the Pechanga Tribe provided an additional confidential ethnographic report (the Ethnography 2020). The information from the Ethnography 2020 is included in the Project's confidential TCP Report (Confidential Appendix 9.4.5).

Regulatory information presented in this section was obtained from available public resources including the *City of Murrieta General Plan 2035* (Murrieta GP) and the City of Murrieta Municipal Code (Murrieta MC).

The cultural evaluations in this section and in Section 4.4, *Cultural Resources*, were conducted in compliance with California Public Resources Code (PRC) §5024.1 to identify tribal, archaeological and historic resources in the Project area and evaluate potential impacts that could result from implementation of the Project. Due to the confidential nature of the location of cultural resources, the referenced reports do not include maps or location descriptions.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed, and discussed in this section:

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in PRC §5020.1(k), or

b) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1. In

[1] Note that there is a discrepancy between the date on the cover page (June 2014) and date in the document footer. This discrepancy has no effect on the analysis.

[2] Review of the Tribal Ethnography was completed by Ms. Sandra Pentney, under the supervision of Ms. Stephanie Roberts, on September 4, 2018 at the Pechanga Tribe's cultural resources facility. A copy of Ms. Pentney's research notes is included in Confidential Appendix 9.4.6.

applying the criteria set forth in subdivision (c) of PRC §5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.14.6, *Impacts and Mitigation Measures* below, impacts will be less than significant with mitigation incorporated.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.14.2 TRIBAL CULTURAL PLACES, RESOURCES, AND PROPERTIES

SENATE BILL 18 – TRADITIONAL TRIBAL CULTURAL PLACES

Senate Bill (SB) 18, approved in 2004, requires local governments to consult with tribes before amending or adopting any general plan or specific plan, or designating land as open space, and to provide notices at various points in the planning process. Consultation, for purposes of SB 18 "is a process in which both the tribe and local government invest time and effort into seeking mutually agreeable resolution for the purpose of preserving or mitigating impacts to a cultural place, where feasible." See November 14, 2005 *State of California Tribal Consultation Guidelines Supplement to General Plan Guidelines*, page 15. Consultation is described as " 'conferring between two or more parties to identify issues and make a good faith attempt to find a mutually acceptable resolution of any differences identified.' Differences of opinion and of priorities will arise in consultation between local and tribal governments. Whenever feasible, both local and tribal governments should strive to find mutually acceptable resolutions to differences identified through consultation." Id. at page 18.

By involving tribes in the early planning stages of a development project, this allows them to participate in local land use decisions for purposes of protecting or mitigating impacts to cultural places. SB 18 does not provide a definition of Traditional Tribal Cultural Places, but refers to PRC §5097.9 and §5097.995 to define cultural places, features, and objects:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (PRC §5097.9).
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the CRHR pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (PRC §5097.995[3]).

[3] In 2004, PRC §5097.995 was amended and renumbered to PRC §5097.993 by Senate Bill 1264 (Chapter 286). Local governments should refer to PRC §5097.993 when looking for PRC §5097.995.

The City has satisfied its SB 18 obligations by conducting consultations with Native American tribes prior to amending or adopting any general plan or specific plan (as they pertain to this MHSPA Project), with the purpose of preserving or mitigating impacts to cultural places. See Table 4.14.2, *Consultation History with the Pechanga Tribe* which lists the coordination between the City (Lead Agency), Project Applicant, and Pechanga Tribe dating back to 2007. For added information on SB 18, see Section 4.14.4, *Regulatory Framework*.

ASSEMBLY BILL 52

Assembly Bill (AB) 52 required an update to Appendix G of the CEQA Guidelines to include questions pertaining to impacts to TCRs. Under AB 52, approved in 2014, PRC §21074 was added to the PRC, to read:

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.[4]

(2) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Section 11(c) of AB 52 states that "this act shall apply only to a project that has a notice of preparation *(NOP)* or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015." The NOP for this Project was filed in 2014; therefore, AB 52 does not apply this Project. For added information on AB 52, see Section 4.14.4, *Regulatory Framework*.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

Per the definitions identified in Section 106 implementing regulations, codified at 36 Code of Federal Regulations (CFR) 800.16(l):

[4] Section 5020.1(k) reads "Local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution. Retrieved from California Legislative Information Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=5020.1. Accessed August 22, 2019.

1) *Historic property* means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (*NRHP*) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

2) The term *eligible for inclusion in the National Register* includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria.

For added information on Section 106 of the NHPA, see Section 4.4.3, *Regulatory Framework* of Section 4.4, *Cultural Resources*.

NATIONAL REGISTER BULLETIN 38

National Register Bulletin (NRB) 38 establishes guidelines for evaluating and documenting traditional cultural properties (TCP). NRB 38 provides a general definition of a TCP as "one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community."

Detailed information about the above regulations and definitions of all key tribal cultural resources' terms used in this section are provided below in Section 4.14.4, *Regulatory Framework* and in Section 4.4, *Cultural Resources*.

For purposes of this analysis, further references to Tribal Cultural Resources, or TCRs, will be identified as Traditional Cultural Properties, or TCPs. This is because NRB 38 guidance serves as the best and most recognized guidance for identifying TCPs. Additionally, while AB 52 does define Tribal Cultural Resources, the bill does not apply to this Project, and SB 18, which does apply to the Project, does not define Traditional Tribal Cultural Places. Further, the construction of the project will require regulatory permitting through the United States Army Corps of Engineers which, in turn, will require compliance with Section 106 of the National Historic Preservation Act of 1966 and evaluation of TCPs is a necessary component of that compliance process. See Section 4.4.3, *Cultural Resources, Regulatory Framework* and Section 4.14.4 below. Lastly, Confidential Appendix 9.4.5, *Final Traditional Cultural Properties Management Summary*, considers potential effects the Project may have on TCPs.

4.14.3 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain

undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[5]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north-south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

Physically, the Project is within the Peninsular Range geologic province of California, which encompasses all of western Riverside County and is situated on the southeastern slopes of the Perris Plain. The Perris Plain is north of the northwestern trending Elsinore Fault Zone and southwest of the San Jacinto Fault Zone. Paloma Valley and the City of Murrieta and are west of the base of the San Jacinto Mountains and west of French Valley along the eastern edge of the Elsinore Fault Zone. In addition, the Project site is located between the Luiseño and the Cahuilla territories on the Luiseño side. The Luiseño Traditional Territory encompasses 2,900 square miles[6], including all of Western Riverside County and northwestern San Diego County.[7]

ETHNOGRAPHIC, ARCHAEOLOGICAL, AND HISTORIC CONTEXTS

Please refer to Confidential Appendices 9.4.1, 9.4.2, 9.4.3 and 9.4.5, which provide the historic and archaeological contexts of the Project area.

Ethnographic/Protohistoric

Ethnography is the descriptive and analytic study of the culture of particular groups or communities. An ethnographer seeks to understand a community through interviews with its members and often through living in and observing it (a practice referred to as "participant observation"). In February 2020, the Pechanga Tribe submitted an additional confidential ethnography (the Ethnography 2020) (Woodword and Earp, 2020). The information found in ethnography and other literature can be biased, but provides an important source of information to augment the information that was provided by the Tribe.[8]

Linguistically, the Luiseño people belong to the Cupan sub-group of the Takic language family, and they lived as a hunter/gatherer society. The society was patrilineal in nature with patrilocal clans, bands, or

[5] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.

[6] Note that discrepancies exist regarding the total area of the Luiseño territory. The confidential *Traditional Cultural Properties Management Summary* (2020) and Ms. Sandra Pentney's September 2018 notes on an unredacted Traditional Cultural Properties Report, provided by the Pechanga Tribe (for review only), both state the territory is 2,900 square miles. However, Atkins' 2014 *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR* states the territory is 1,500 square miles and the June 2018 *Newland Sierra FEIR* (https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/NS/NSPreBOS/2.5_Cultural%20Resources_FEIR_revised.pdf) states the territory is 2,000 square miles. The Ethnography 2020 (Woodword and Earp, 2020) describes the Tribe's traditional territory as encompassing 2,900 square miles. For this report, and to ensure consistency between the Cultural Resources and Tribal Cultural Resources sections, the Luiseño territory will be reported as 2,900 square miles.

[7] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 10. Denver, CO: WSP. Confidential Appendix 9.4.5.

[8] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 10. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

families that operated mostly autonomously from each other. Each clan was led by a hereditary chief who oversaw religious, economic, and military affairs. Land was owned by the clan that used it.

Luiseño material culture has provided evidence for a split into two patterns, San Luis Rey I (1400 to 1750 Anno Domini [A.D.]) and San Luis Rey II (1750 to 1850 A.D.).[9] The second era is distinguished from the earlier era by the addition of pottery and cremation burials instead of "inhumations," or burying the dead (Bean and Shipek, as cited in Pentney, 2017).

The Luiseño used several structures, including houses, sweat houses, and temples, called "wamkish." Permanent houses were semi-subterranean, earth-covered structures. A sweat house was similar to the permanent house, but was smaller and elliptical in shape, whereas the wamkish was more of a round fence constructed of brush with an opening facing the north or east (Kroeber, as cited in Pentney, 2017).

Village groupings were located in valley bottoms, along streams or coastal strands near mountain ranges. The village areas specifically were located in diverse ecological zones near good water supplies in defensive locations (Bean and Shipek, as cited in Pentney, 2017).

Two main settlement patterns for the Luiseño have been discussed over the years. One settlement pattern states that the Luiseño lived in a single locus year-round, year after year (White, as cited in Pentney, 2017). The second settlement pattern states that the Luiseño were bimodal, with an approximate six-month span of time spent at the village site, and the other six months spent in other specific areas to gather food such as acorns or sometimes for hunting or coastal fishing (Dubois et al., as cited in Pentney, 2017).

A typical territory would extend from lower to higher elevations and would encompass stream valleys, chaparral-covered slopes, upper reaches with flats and saddles, and would include a stable source of water often located in a sheltered valley (White, as cited in Pentney, 2017).

The ideal situation for a village was the center of the village territory with all resources equidistant from the village and attempts to achieve this ideal resulted in locating the village in such a position that any resource could be reached within half a day's walking time. Known Luiseño villages include *Timeeku*, *Peexa Wiyaamay*, and *Aguanga* (Oxendine, as cited in Pentney, 2017).

The confidential *Final Traditional Cultural Properties Management Summary* (Confidential Appendix 9.4.5) provides greater ethnographic detail, and points to the importance of natural materials and resources, rock art, ceremony, and Pechanga Tribal custom and practices; evidence of these are evident on the Project parcels. The confidential TCP Report also discusses the role the Project area plays in the Pechanga Tribal history as told by the *Atáaxum* (Luiseño).

EXISTING CULTURAL RESOURCES

Previous cultural resources investigations within the MHSPA Project area resulted in the discovery of resources and sites within the MHSPA area. A number of cultural resources investigations culminated in recording 12 archaeological sites within the Project site. Three of those sites meet the required criteria for classification as TCPs: CA-RIV-645, -3335 and -12244. For detailed information regarding previous investigations and sites see Section 4.4, *Cultural Resources*. Information on NRB 38 and recognizing TCP's

[9] Pentney, S. (2017). Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report. Page 3-7. San Diego, CA: Atkins. EIR Confidential Appendix 9.4.3.

can be found below in Section 4.14.4, *Regulatory Framework*. Table 4.14-1, *Summary of Cultural Resources Located Within the MHSPA Project site* below describes the 12 archaeological sites and findings of the cultural resources' investigations.

Table 4.14-1: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
P-33-11236	Grinding slick (three surfaces) (granite)	Four bedrock milling features, one piece of debitage, and one non-human bone.	None	No	No	No
CA-RIV-645	Atkins revisited the site and noted the presence of grinding slicks, a broken projectile point, debitage and bedrock mortars.	24 bedrock milling features, six rockshelters, one petroglyph, one pictograph, multiple bifaces, cores, milling implements, flaked tools, and debitage.	Petroglyphs, pictographs, tourmaline, crystal, non-human burned bone, rock shelters, bedrock milling features, pestles, stone tool fragments, debitage, and Pechanga Tribe-identified "killed" metates. 2,833 artifacts were collected at this site.	Yes, Criteria 1, 3 and 4	Yes, Criterion 1	Yes, Criteria a, c, and d
CA-RIV-3335	Two metate fragments and groundstone fragments were distributed across the site.	Midden soil, milling implements, cores, bifaces, flaked tools, and debitage.	Crystal, non-human burned bone and many Pechanga Tribe-identified "killed" metates. 1,718 artifacts were collected at the site.	Yes, Criteria 1 and 4	No	Yes, Criteria a and d
CA-RIV-3336	Atkins revisited the area and recorded a large, geographically extensive lithic scatter that includes debitage from the complete lithic reduction sequence, quartz crystals, groundstone	During 2016 testing, one STP was excavated with negative results. Site boundary was updated to depict the artifact assemblage and the updated site boundary is no longer within the Project footprint.	None	CA RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site	CA-RIV-3336 is outside the Project site

Table 4.14-1: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	fragments and many expediency tools. Lithic materials present included quartz, jasper and rhyolite.					
CA-RIV-3339	Four of the bedrock milling features were identified and a much more extensive artifact scatter was recorded. Groundstone and chipped stone tools were observed in addition to quartz crystals, core fragments, and debitage.	One hearth feature, milling implements, cores, portable mortars, one pendant, stone tools, and debitage.	None	Yes, Criterion 4	No	Yes, Criterion d
CA-RIV-12193 (ATK-MH-08)	Site consists of two grinding slicks on two adjacent bedrock outcroppings A metate was also recorded nearby. An associated lithic debitage scatter included quartz core reduction and bifacial reductions flakes, a utilized flake and a metavolcanic bifacial reduction flake.	19 stone artifacts, including two volcanic biface fragments, and one unidentified non-human bone were recovered. One bedrock milling slick was present.	None	No	No	No
CA-RIV-12199 (ATK-MH-02)	Site is an extensive lithic scatter and quartz quarry site	This site consisted of a naturally occurring quartz	None	No	No	No

Table 4.14-1: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	comprised of core reduction sequence debitage, core frags, battered cobbles and expediency tools. A pure crystal chopper and four crystal micro-blades were also recorded at the site.	vein feature and debitage. Site CA-RIV-12199 is one of two known quartz quarries within one mile of the project area. Prospecting pits were dug throughout the site resulting in the complete removal of the quartz vein, up to eight feet below the surface, in pursuit of minerals.				
CA-RIV-12242 (LSA-CMU-532-H-1 & ATK-MH-15)	Stone and mortar residence; masonry watering trough; concrete reservoir; stone gateways; olive grove; barbecue structures; fence liens; pool with fountain with feature of frog spout; bathhouse and outhouse; and fire pit.	Historic homestead, boulder with petroglyphs, six pieces of quartz debitage and petroglyphs.	None	No	No	No
CA-RIV-12243 (LSA-CMU-532-S-4)	Atkins revisited the area and recorded a retouched flake in the vicinity of the grinding slicks.	Two bedrock milling features, seven artifacts, one retouched flake, and quartz debitage.	None	No	No	No
CA-RIV-12244 (LSA-CMU-532-S-3)	Atkins revisited the area and noted further lithic scatter beyond the previously recorded boundaries. The	High density of subsurface artifacts. Milling implements, bifaces, cores, stone tools, retouched flakes, and debitage.	High quantities of burned, fragmented metates. Majority of the parcel's burned non-human bone is found in this site, along with many killed	Yes, Criteria 1 and 4	No	Yes, Criteria a and d

Table 4.14-1: Summary of Cultural Resources Located Within the MHSPA Project Site

Resource Number	Phase 1 Finding(s)	Phase 2 Finding(s)	TCP Finding(s)	Recommended CRHR Eligible?	Recommended Unique Archaeological Resource?	Recommended NRHP Eligible?
	boundaries have been modified accordingly to accommodate the presence of quartz debitage, expediency tools, a projectile point perform and a core fragment.	Rabbit protein residue was found on a handstone and five soil samples.	metates, but no thermal features. 1,120 artifacts were collected at this site.			
CA-RIV-12245 (LSA-CMU-532-S-2)	Atkins surveyed the area surrounding the site and expanded the boundaries significantly. There is a large lithic scatter that includes chert, quartz and rhyolite debitage, expediency tools, manos, a burin, and formed tools.	Within Project footprint, seven artifacts recovered.		No	No	No
CA-RIV-12326 (ATK-MH-16)	This site consists of one quartz end/side scraper, one granite metate, and one bedrock milling feature.	Four artifacts, one bedrock milling feature, one handstone, and debitage		No	No	No

COORDINATION

In compliance with PRC §21080.3.1(b), formal notification has been provided to California Native American tribal representatives which may have interest in projects within the geographic area traditionally and culturally affiliated with the tribe(s). Native American groups may have knowledge about cultural resources in the area and may have concerns about adverse effects from development on TCPs, as defined in NRB 38.

In 2014, a letter was sent to the Native American Heritage Commission (NAHC) to determine whether any sacred sites were listed in the Sacred Lands File (SLF) for the Project area and general vicinity. It was determined by NAHC that a sensitive tribal area was located within the Project site. The NAHC directed further inquiries to the Pechanga Tribe. The Pechanga Tribe was designated as the Native American

monitors for the survey.[10] The Pechanga Tribe requested consultation and future notification on all future scheduled public hearings and approvals concerning the Project. The Pechanga Tribe has been involved in numerous meetings and discussions, extensive communications and consultation on the Project almost since its inception and has provided valuable information on current and past customs and traditions that added important context for the Project's archaeological results.

As demonstrated in Table 4.14-2 below, there has been ongoing coordination between the City, Project Team and the Pechanga Tribe since 2007 to solicit the Tribe's input, including identification of TCPs.

Table 4.14-2: Consultation History with the Pechanga Tribe

Date	Attendees	Description
11/7/2007	Transmittal	Pechanga Letter to City Requesting SB 18 Consultation.
3/7/2014	Pechanga Tribe, City Staff, Project Applicant and Atkins	Pre-field consultation (initial site visit) and research for the Phase 1 Survey at the Project site.
1/8/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	Field visit
1/29/2015	Pechanga Tribe, City Staff, and Project Applicant	Pechanga Letter to City Requesting SB 18 Consultation
3/3/2015	Project Team and Pechanga Tribe	Tribe Meeting at Pechanga Cultural Center
3/23/2015	Project Team and Pechanga Tribe	Tribe Meeting at Pechanga
4/24/2015	Pechanga Tribe and Atkins	To discuss what research questions are pertinent to the Tribe and discuss field approaches.
4/30/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	Discuss Phase 2 scope of work and approach with the Tribe.
9/1/2015	Transmittal	Atkins Submittal of Draft Test Plan for Phase 2 work.
9/18/2015	Pechanga Tribe and Atkins	Phone call with the Tribe to discuss their concerns with language in the Draft Test Plan submitted 9/1/2015.
9/25/2015 - 11/30-2015	Atkins field team and Cody Schlater (Native American Monitor)	Phase 2 fieldwork.
10/7/2015	Pechanga Tribe, City Staff, Project Applicant and Atkins	To discuss the destruction of an archaeological site on the property.
10/15/2015	Pechanga Tribe, City Staff, Project Applicant, and Riverside County Sherriff	On-site inspection of Illegal activity.
1/18/2016 - 3/18/2016	Atkins field team and Cody Schlater	Phase 2 fieldwork.
6/2016	Transmittal	Draft Phase 2 report submitted by Atkins.
7/21/2016	Pechanga Tribe, City Staff, Project Applicant and Atkins	Project Status and SB-18 Meeting at the City.
7/17/2017	Pechanga Tribe, City Staff, Project Applicant and Atkins	SB-18 meeting.

[10] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 1-1. San Diego, CA: Atkins. EIR Confidential Appendix 9.4.3.

Table 4.14-2: Consultation History with the Pechanga Tribe

Date	Attendees	Description
9/5/2017	Transmittal	Tribe comment letter on Phase 2 and Project issues.
10/5/2017	Pechanga Tribe, Project Applicant, and City Staff	SB-18 meeting at Pechanga.
12/8/2017	Pechanga Tribe, Project Applicant, and Atkins	First tribal artifact inspection at Atkins office in San Diego, CA.
12/19/2017	Pechanga Tribe, Project Applicant, and Atkins	Second tribal artifact inspection at Atkins office in San Diego, CA.
3/23/2018	Pechanga Tribe, Project Applicant, and Atkins	Teleconference with the Tribe who was looking for artifact disposal patterns to help them interpret the tribal use of the site. Specifically, burned non-human bone, burned and killed metates, and quartz crystals.
3/28/2018	Pechanga Tribe, Project Applicant, and Atkins	Third meeting to discuss artifacts found during the Phase 2 Test.
4/2/2018	Pechanga Tribe, City Staff, Project Applicant, and Atkins	Discuss next steps after artifact viewing.
5/22/2018	Pechanga Tribe, Project Applicant, and Atkins	Teleconference to discuss the TCP Analysis and mitigation.
6/12/2018	Pechanga Tribe, City Staff, Project Applicant, and Atkins	Site inspection with the Tribe to look at the McElwain Road alignment and how it will impact cultural resources on the site.
9/4/2018	Pechanga Tribe and Atkins	Atkins inspection of Newland Sierra ethnography and unredacted TCP information
4/11/2019	City Staff	Meeting to discuss draft TCP.
4/30/2019	Pechanga Tribe and Project Applicant's Representative	Teleconference discussing status of Project and cultural resources reports.
6/25/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
8/22/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
9/29/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
10/1/2019	Transmittal	Tribe comment letter on TCP and Project issues.
11/18/2019	Pechanga Tribe and City Staff	SB 18 consultation meeting.
11/27/2019	Transmittal	Letter from City to Tribe requesting information or data for the TCP.
1/7/2020	Pechanga Tribe, Project Applicant's Representative, and City Staff	SB 18 consultation meeting.
2/5/2020	Pechanga Tribe, Project Applicant's Representative, and City Staff	Teleconference to discuss Project DEIR
2/14/2020	Pechanga Tribe Correspondence	Pechanga Tribe correspondence including comments on the TCP Documents and additional ethnographic information.

Source: Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

According to Atkins' 2017 *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation*, representatives of the Pechanga Tribe were present during the 2014 initial site visit and throughout the Phase 2 efforts. The Pechanga Tribe provided comments and references for the Phase 1 report; provided

a review of the Phase 2 testing and evaluation plan before fieldwork began; provided a Native American Monitor for the entirety of the Phase 2 fieldwork; submitted a comment letter on the Phase 2 efforts; and were allowed access to the Project site for inspections, meetings and discussions as and when requested.[11]

4.14.4 REGULATORY FRAMEWORK

FEDERAL

The Project will require a U.S. Army Corps of Engineers (USACE) permit, for impacts in navigable waters, which provides a federal nexus. For that reason, a discussion of the federal regulatory context is provided.

Natural Register of Historic Places

The NRHP was established by the National Historic Protection Act (NHPA) of 1966, as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 §60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Dept. of the Interior, 1995):

1. Are associated with events that have made a significant contribution to the broad patterns of our history;
2. Are associated with the lives of persons significant in our past;
3. Embody the distinctive characteristics of a type, period, or 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 individual distinction; or
4. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for listing in the NRHP (U.S. Dept. of the Interior, 1995). In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Dept. of the Interior, 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

National Register Bulletin 38

The National Park Service (NPS) has prepared guidelines to assist in the documentation of cultural resources, to coordinate the incorporation of provisions for the consideration of such resources into

[11] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 5-1. San Diego, CA: Atkins. EIR Confidential Appendix 9.4.3.

departmental planning documents and administrative manuals, and to encourage the identification and documentation of such resources by state and federal agencies. NRB 38[12] is intended to be an aid in determining whether properties thought or alleged to have traditional cultural significance are eligible for inclusion in the NRHP and to assist federal agencies, State Historic Preservation Officers (SHPOs), Certified Local Governments, Native American Tribes, and other historic preservation practitioners who need to evaluate such properties when nominating them for inclusion in the NRHP or when considering their eligibility for the NRHP as part of the review process prescribed by the Advisory Council on Historic Preservation (ACHP) under Section 106 of the NHPA. [13]

As described in NRB 38, "A traditional cultural property…can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community."

According to the guidance in NRB 38, TCPs are a broad group of places that can include:

- "a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

NRB 38 provides the following guidance:

- "In the case of a TCP, there are two fundamental questions to ask about integrity. First, does the property have an integral relationship to traditional cultural practices or beliefs; and second, is the condition of the property such that the relevant relationships survive?"

And:

- "If the property is known or likely to be regarded by a traditional cultural group as important in the retention or transmittal of a belief, or to the performance of a practice, the property can be taken to have an integral relationship with the belief or practice, and vice-versa."[14]

[12] U.S. Department of the Interior, National Park Service. (1992). *National Register Bulletin 38 – Guidelines for Evaluating and Documenting Traditional Cultural Properties*. Retrieved from NPS Website: https://www.nps.gov/subjects/nationalregister/upload/NRB38-Completeweb.pdf. Accessed July 8, 2019.

[13] Bright, J. (2020). Cultural Resources Summary. Pages 7-8. Denver, CO: WSP. EIR Appendix 9.4.4.

[14] Bright, J. (2020). *Cultural Resources Summary*. Page 8. Denver, CO: WSP. EIR Confidential Appendix 9.4.4.

A specific example given in NRB 38 for integrity of relationship is as follows:

> *For example, imagine two groups living along the shores of a lake. Each group practices a form of baptism to mark an individual's acceptance into the group. Both carry out baptism in the lake. One group, however, holds that baptism is appropriate in any body of water that is available; the lake happens to be available, so it is used, but another lake, a river or creek, or a swimming pool would be just as acceptable. The second group regards baptism in this particular lake as essential to its acceptance of an individual as a member. Clearly the lake is integrally related to the second group's practice, but not to that of the first.*[15]

The distinction made in the example is important because it acknowledges that a property or site may be an important part of a group's beliefs, but that documenting integrity of relationship emphasizes the specific relationship the property has in conveying that belief.

The intent of recognizing TCPs is to add to the more commonplace architectural and archaeological investigations that can understate tribal or cultural values in recognizing places of importance. Examples of TCPs include the San Juan River in New Mexico, Nantucket Sound in the Atlantic Ocean offshore from Massachusetts; Chinatown in Honolulu, HI; abandoned household structures; numerous archaeological sites; and the traditional community of Grouse Creek in Utah.

It is important to note that in federal parlance, TCPs are not limited to native or aboriginal properties and values, but SB 18 in California is focused on tribal resources only. Additional guidance is provided by the ACHP. The ACHP is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy. In 2012 they published additional guidance regarding TCPs that says:

"… Bulletin 38 has sometimes been interpreted as requiring an Indian tribe to demonstrate continual use of a site in order for it to be considered a TCP in accordance with Bulletin 38. This requirement could be problematic in that tribal use of a historic property may be dictated by cyclical religious or cultural timeframes that do not comport with mainstream conceptions of "continuous" use; while in many other cases, tribes have been geographically separated from and/or denied access to historic properties of religious and cultural significance to them. It is important to note that under the NHPA and the Section 106 regulations, the determination of a historic property's religious and cultural significance to Indian tribes is not tied to continual or physical use of the property."

This is an important consideration for the MHSPA, as the parcels have been under private ownership, and the Pechanga Tribe and other tribes have not had continual access.[16] Regardless, the Pechanga Tribe and all Native American tribes must provide evidence that the site is associated with cultural practices or beliefs known to a living community that (a) are rooted in the community's history and (b) are important in maintaining the continuing cultural identity of the community.

[15] U.S. Department of the Interior, National Park Service. (1992). *National Register Bulletin 38 – Guidelines for Evaluating and Documenting Traditional Cultural Properties*. Page 10. Retrieved from NPS Website: https://www.nps.gov/subjects/nationalregister/upload/NRB38-Completeweb.pdf. Accessed March 5, 2020.

[16] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 6. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

Section 106 of the National Historic Protection Act

It is possible that federal permitting processes will subject the Project to "Section 106 review." Under Section 106 of the NHPA, federal agencies are required to consider the effects of their actions on places that are listed in, or eligible for listing in, the NRHP. Permitting under the Clean Water Act would involve the USACE. To handle their Section 106 obligations, the USACE promulgated implementing regulations at 33 CFR 325 (Appendix C). This appendix establishes the procedures to be followed to fulfill the requirements set forth in the NHPA. The USACE follows these procedures rather than those outlined in 36 CFR Part 800.

Per the appendix, "Designated historic property" is a historic property listed in the NRHP or which has been determined eligible for listing in the NRHP pursuant to 36 CFR Part 63. A historic property that, in both the opinion of the SHPO and the district engineer, appears to meet the criteria for inclusion in the NRHP will be treated as a "designated historic property." TCPs could be designated historic properties; this Environmental Impact Report (EIR) and associated technical studies provide the information the USACE will need to comply with Section 106 and so this section, including the *Cultural Resources Summary* (Bright 2020), and all the previous cultural resources work contained as appendices to the Draft EIR (Atkins 2017, 2014). Reports associated with previous work are included in Confidential Appendix 9.4, *Cultural Resources Reports*. For added information on Section 106 of the NHPA, see Section 4.4.3, *Regulatory Framework* of Section 4.4, *Cultural Resources*.

STATE

PRC §5097.91, PRC §5097.98, PRC §5097.94 and the Native American Heritage Commission

PRC §5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC §5097.98 specifies a protocol to be followed when the NAHC receives the notification of a discovery of Native American human remains from a county coroner.

PRC §5097.94 established the powers and duties of the NAHC, including, but not limited to:

a) To identify and catalog places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands. The identification and cataloguing of known graves and cemeteries shall be completed on or before January 1, 1984. The commission shall notify landowners on whose property the graves and cemeteries are determined to exist, and shall identify the Native American group most likely descended from those Native Americans who may be interred on the property.

b) To make recommendations relative to Native American sacred places that are located on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans for acquisition by the state or other public agencies for the purpose of facilitating or assuring access thereto by Native Americans.

c) To make recommendations to the Legislature relative to procedures that will voluntarily encourage private property owners to preserve and protect sacred places in a natural state and to allow appropriate access to Native American religionists for ceremonial or spiritual activities.

For a complete list of powers and duties, visit: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=5097.94.

California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act (Government Code §6250 et seq.) were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects…maintained by, …, the Native American Heritage Commission….". Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission (SHRC), the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

California Senate Bill 18

Consultation, for purposes of SB 18 "is a process in which both the tribe and local government invest time and effort into seeking mutually agreeable resolution for the purpose of preserving or mitigating impacts to a cultural place, where feasible." See November 14, 2005 *State of California Tribal Consultation Guidelines Supplement to General Plan Guidelines*, page 15. Consultation is described as " 'conferring between two or more parties to identify issues and make a good faith attempt to find a mutually acceptable resolution of any differences identified.' Differences of opinion and of priorities will arise in consultation between local and tribal governments. Whenever feasible, both local and tribal governments should strive to find mutually acceptable resolutions to differences identified through consultation." Id. at page 18.

SB 18 (Chapter 905 of the 2004 statutes) says, in pertinent parts:

> Section 1(b): In recognition of California Native American tribal sovereignty and the unique relationship between California local governments and California tribal governments, it is the intent of the Legislature, in enacting this act, to accomplish all of the following:
>
> 1) Recognize that California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places are essential elements in tribal cultural traditions, heritages, and identities.
>
> 2) Establish meaningful consultations between California Native American tribal governments and California local governments at the earliest possible point in the local government land use planning process so that these places can be identified and considered.
>
> 3) Establish government-to-government consultations regarding potential means to preserve those places, determine the level of necessary confidentiality of their specific location, and develop proper treatment and management plans.

4) Ensure that local and tribal governments have information available early in the land use planning process to avoid potential conflicts over the preservation of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places.

5) Enable California Native American tribes to manage and act as caretakers of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places.

6) Encourage local governments to consider preservation of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places in their land use planning processes by placing them in open space.

7) Encourage local governments to consider the cultural aspects of California Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places early in land use planning processes."

And:

Section 65352.3 of the Government Code is as follows:

a) (1) Prior to the adoption or any amendment of a city or county's general plan, proposed on or after March 1, 2005, the city or county shall conduct consultations with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.995 of the PRC that are located within the city or county's jurisdiction.

   (2) From the date on which a California Native American tribe is contacted by a city or county pursuant to this subdivision, the tribe has 90 days in which to request a consultation, unless a shorter timeframe has been agreed to by that tribe.

b) Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Section 65040.2, the city or county shall protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects."

Thus, satisfying the City's SB 18 obligations requires the City to conduct consultations with California Native American tribes before amending or adopting any general or specific plan, with the purpose of preserving or mitigating impacts to cultural places.

In 2014, a letter was sent to the NAHC to request information on any sacred sites that may be listed in the Sacred Lands File for the Project area and general vicinity. The NAHC responded that a sensitive tribal area was located within the Project site, the results of which are kept confidential by the local tribes.

The City's compliance with SB 18 is documented in the *Traditional Cultural Properties Management Summary* (EIR Confidential Appendix 9.4.5).

California Assembly Bill 52

On July 1, 2015, California AB 52 of 2014 was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a

substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2).

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be released. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the Lead Agency, in writing, to be informed by the Lead Agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the Lead Agency.

On July 1, 2015, AB 52 went into effect as an amendment to the CEQA process, which required governmental agencies to consult with Native American tribes sooner in the development process and to consider tribal cultural resources aside from only archaeological resources. **However, the MHSPA Project is not subject to the AB 52 amendment because the Project's NOP was issued prior to 2015**.

PRC §5024.1 and the California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC §5024.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks (CHL) numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest (PHI) program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the SHRC determines that it meets one or more of the following criteria (listed under PRC §5024.1(c)), which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.
- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Under PRC §5024.1 and 14 CCR §4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as agricultural activities and off-road vehicle

use (both of which occur within the Project site), often lack integrity because they have been directly damaged or removed from their original location, among other changes.

Typically, a prehistoric archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

California Health and Safety Code, Sections 7050.5 and 7052

Health and Safety Code, Section 7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease, and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code, Section 622.5

California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

California Native American Graves Protection and Repatriation Act

Enacted in 2001, the California Native American Graves Protection and Repatriation Act (California Repatriation Act), requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate Native Amerian tribe(s).

LOCAL

City of Murrieta General Plan 2035

CONSERVATION ELEMENT

The purpose of the Conservation Element[17] is to provide direction regarding the conservation, development, and utilization of natural and cultural resources. It serves as a guide for the City of Murrieta, its residents, and its businesses to understand what natural or other resources exist in the City, how development impacts these resources, and methods to maintain, preserve, or conserve these resources. The following goals and policies are applicable to tribal cultural resources within the MHSPA area.

Goal CSV-11: ***Murrieta protects, enhances, and celebrates archaeological, cultural, and historic resources as a way to foster community identity.***

[17] City of Murrieta (2011). *Murrieta General Plan 2035 Conservation Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed July 8, 2019.

Policy CSV-11.1: Promote the protection and preservation of archaeological, cultural, historical, and architecturally significant sites, structures, districts, Native American resources, and natural features throughout the community, consistent with the Cultural Resource Preservation Ordinance. Preferred methods of protection include avoidance of impacts, placing resources in designated open space and allocation of local resources and/or tax credits as feasible.

Policy CSV-11.3: Promote the designation of eligible resources to the City Register of Cultural Resources, the County Landmarks Program, or other regional, state, or federal programs.

Policy CSV-11.4: Encourage the development of programs to educate the community about Murrieta's historic resources and involve the community in historic preservation.

Policy CSV 11.5: Comply with state and federal law regarding the identification and protection of archaeological and Native American resources, and consult early with the appropriate tribal governments.

City of Murrieta Municipal Code

Murrieta MC Chapter 16.26, *Cultural Resource Preservation,* establishes a mechanism by which community resources such as buildings, structures and sites within the City of Murrieta, which are of prehistoric and historic interest or value, or which exhibit special elements of the City's architectural, cultural or social heritage may be identified, protected, enhanced, perpetuated and used in the interest of the public's health, safety, welfare and enrichment.

Murrieta MC Section 16.26.050 discusses how an improvement or natural feature may be designated a cultural resource by the city council if it meets any of the following criteria:

A. Individual-Resource Designation

1. It exemplifies or reflects special elements of the city's cultural, architectural, aesthetic, social, economic, political, artistic and/or engineering heritage;
2. It is identified with persons, a business use or events significant in local, state or national history;
3. It embodies distinctive characteristics of style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;
4. It is representative of the notable work of a builder, designer or architect; or,
5. Its unique location or singular physical characteristic represents an established and familiar visual feature of a neighborhood, community or the city.

4.14.5 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been used as significance criteria in this section. Accordingly, the Project may have a significant environmental impact if one or more of the following occurs:

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in PRC §5020.1(k), or

b) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1. In applying the criteria set forth in subdivision (c) of PRC §5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.

METHODOLOGY AND ASSUMPTIONS

The Project and associated project design features (PDFs) are evaluated against the aforementioned significance criteria, as the basis for determining the level of impacts related to TCPs. In addition to PDFs, this analysis considers existing regulations, laws and standards that serve to avoid or reduce potential environmental impacts. Where significant impacts remain, feasible mitigation measures are recommended, where warranted, to avoid or lessen the Project's significant adverse impacts.

Approach to Analysis

This analysis of impacts on TCPs examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts; and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on field reconnaissance conducted by LSA in 2006; Atkins from 2014 through 2016; WSP in 2018; and Kimley-Horn on January 10, 2019; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents.

PROJECT DESIGN FEATURES

- The City and Project Applicant have engaged in long-term, extensive consultation discussions with representatives from the Pechanga Tribe in order to address specific concerns regarding sensitive environmental resources such as TCPs (see Table 4.14-2: *Consultation History with the Pechanga Tribe*). The Project Applicant has made modifications to the land use plan and associated grading footprint in order to avoid, where feasible, the significance bearing portion of an identified site. Where avoidance is not a feasible mitigation measure, beyond what was recommended in the Project's cultural resource technical reports, are included to further minimize cultural resources impacts.

- Preservation of over 600 acres of open space. Open space preservation allows for the land to be left in its present condition with no ground-disturbing activities. The absence of construction activities allows undiscovered cultural resources to remain undisturbed.
- In consultation with the Pechanga Tribe, the City and the Project Applicant modified the McElwain Road right-of-way and alignment to minimize disturbance to sensitive resource areas.

4.14.6 IMPACTS AND MITIGATION MEASURES

Impact 4.14-1: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (a) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC §5020.1(k) or (b) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION AND OPERATIONS

For purposes of this impact analysis, a TCP is defined as a property that is eligible for inclusion in the NRHP or CRHR because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

During consultation with the Pechanga Tribe, members of the Tribe's staff indicated that they see the entire MHSPA Project site and its surrounding region as a part of single village and drew attention to certain sites within it. They also indicated their belief that the Project site was used as a ceremonial area, set within this greater village area. However, anything outside the Project study area is beyond the scope of this study and cannot be evaluated. In this light, TCPs within the MHSPA are understood as individual resources within a larger context.

The Pechanga Tribe also contributed information which was used to recognize and develop the contexts which may lead to the identification of TCPs. The contexts developed are the ceremonial context, resource management context, and transportation context.

For the ceremonial context, ethnographic descriptions and Tribal input point to the role the Project site may have played in ceremony, as indicated with the presence of various artifacts, rock art, and site layout.

From an archaeological perspective, separating certain artifacts based on ceremonial and utilitarian function is difficult; however, the Pechanga Tribe identified artifacts found on the Project site can be ascribed to ceremony. It is also difficult, from an archaeological perspective, to separate faunal remains (food source) burned in ceremonial practices from faunal remains burned for other reasons, like food processing. Representatives from the Pechanga Tribe described characteristics and features that can help to separate food resources from those associated with ritual burning. The Pechanga Tribe indicated all

burned faunal remains may be ceremonial; however, no ethnographic or documentary evidence has been provided or found to support the conclusion that burned faunal remains are considered ceremonial.

Evidence including bedrock grinding/milling features, metates, and small animal bones suggest resource management activities largely focusing on ground resources and small mammals were present on the Project site. While evidence of resource management is present, this context has not been a focus of any Tribal consultation or information provided by the Pechanga Tribe. Similar archaeological finds and resources are common all around the region. Due to the lack of any significant integral relationship between resource management in the Project area and the Pechanga culture, this context does not contribute to the identification of a TCP.

With regard to the transportation context, the Pechanga Tribe has emphasized the importance of connections between the Project site and the greater village area they believe the Project area is part of. However, there are no recognized prehistoric trails within the Project area, but if trails were common in the Project area, they have not left any other physical property referent to identity as a TCP.

In summary, while there are prehistoric resources and sites located on the MHSPA Project site, archaeological data, ethnography, ethnohistory, and direct input from the Pechanga Tribe do not provide substantial evidence to support the conclusion that the Project site, as a whole, is one large village complex or that the Project site, as a whole, constitutes one intact TCP. Research yielded no ethnographic reference to the Project site or its immediate surroundings, or place names or traditional stories about the Project area demonstrating its importance to the Pechanga Tribe. Nor did the Pechanga Tribe bring to light any place names or traditional stories specific to the Project area that would indicate the Project area is significant to the Tribe's culture.

For example, while the Pechanga Tribe drew attention in the ethnographic record to the importance of water, there is no indication that the unnamed streams on the parcels are integral to Pechanga tribal culture. A quartz quarry of both milky and crystal quartz was recorded on the Project site. It was noted during Phase 2 investigations prospecting pits were dug throughout the site resulting in the complete removal of the quartz vein in pursuit of minerals.[18] While quartz crystals are important, and some sources are known to be important, the source on-site is not. Many outcrops of vein quartz were recorded on-site, but of the outcrops observed none had the quality of crystal found in the debitage and tool assemblage discovered on-site. With that, the Pechanga Tribe stated that the quartz outcrops on-site are not recognized as important.[19] The evidence of ceremony provided during the consultation process with the Pechanga Tribe along with the archaeological data does provide evidence of three separate and distinct eligible TCPs located on the MHSPA Project site.

The three TCPS identified on the Project site are described below:

TCP 1: The boundaries of this TCP are essentially conterminous with Site CA-RIV-645, which the Pechanga Tribe has identified as a ceremonial site. It is represented in recovered tourmaline and crystal artifacts, petroglyphs, pictographs, tourmaline, burned faunal remains and Pechanga Tribe-identified ceremonial items. Even if certain faunal (animal) remains and recovered artifacts are unrelated to ceremony, there is ample evidence of ceremony at this location as its orientation and physical setting indicate a ceremonial

[18] Pentney, S. (2017). *Murrieta Hills Specific Plan Amendment Phase II Test and Evaluation Report*. Page 4-7. San Diego, CA: Atkins. EIR Confidential Appendix 9.4.3.

[19] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 9. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

purpose. In addition, Atkins archeological findings and the additional confidential ethnographic information provided by the Pechanga Tribe draw attention to the presence of a possible unique archeological feature.

The archaeological component to the site includes more than ceremonial artifacts. Other findings at this site include including bedrock milling features, pestles, stone tool fragments, and debitage. Utilitarian artifact recovery considerably outweighed ceremonial. The site was likely used over multiple occupations, and at least one of those occupations included the preparation of material used in ceremony. A total of 2,833 artifacts were collected at this site; however, most of these artifacts are utilitarian rather than ceremonial. See subsection *Resource Number CA-RIV-645* under Section 4.4.4, *Existing Cultural Resources Sites* of Section 4.4, *Cultural Resources* for additional information about CA-RIV-645.

TCP 2: The boundaries of this TCP include Site CA-RIV-3335. Similar to TCP 1, TCP 2 contains crystal, burned faunal remains and many Pechanga Tribe-identified ceremonial items. The Pechanga-identified ceremonial items and burned faunal (animal) remains co-occur in the same areas, which leads representatives from the Pechanga Tribe to relate this location to certain funerary or death rituals and practices.

TCP 2 differs from TCP 1 in that it lacks rock art and rock shelters. Site CA-RIV-3335 also produced the very early radiocarbon date, and it is possible that the utilitarian component predates the ceremonial, or vice versa. A total of 1,718 artifacts were collected at this site; however, most of these artifacts are utilitarian rather than ceremonial. See subsection *Resource Number CA-RIV-3335* under Section 4.4.4, *Existing Cultural Resources Sites* of Section 4.4, *Cultural Resources* for additional information about CA-RIV-3335.

TCP 3: The boundaries of this TCP include Site CA-RIV-12244 which contains high quantities of burned artifacts that are indicative of ceremony. These ceremonial artifacts were of particular interest to the Pechanga Tribe, and they correspond to certain funerary or death rituals and practices. The majority of the Property sites burned faunal (animal) remains are found in TCP 3, along with many artifacts that may be ceremonial. These findings support the Pechanga Tribe's interpretation that CA-RIV-12244 presents both ceremonial and/or ritual activities.

As before, utilitarian artifact recovery considerably outweighed ceremonial artifact recovery. A total of 1,120 artifacts were collected at this site; however, most of these artifacts are utilitarian rather than ceremonial.

This site was also likely used over multiple occupations, and at least one of those occupations included ceremonial activities. This area differs from TCP 1 in that it lacks rock art and rock shelters.[20] See subsection *Resource Number CA-RIV-12244* under Section 4.4.4, *Existing Cultural Resources Sites* of Section 4.4, *Cultural Resources* for additional information about CA-RIV-12244.

Summary

A review of available confidential ethnographic information, archaeological data and input from the Pechanga Tribe has identified three separate TCPs within the MHSPA study area. They reflect ceremonial activities which the Pechanga Tribe has identified as important to their cultural practices. CA-RIV-645, CA-RIV-3335, and CA-RIV-12244 are all recommended eligible for CRHP and NRHP listing and are all

[20] Bright, J. (2020). *Final Traditional Cultural Properties Management Summary*. Page 23. Denver, CO: WSP. EIR Confidential Appendix 9.4.5.

associated with TCPs. The *Cultural Resources Summary* (EIR Appendix 9.4.4) assessed the TCPs potential CRHR and NRHP eligibility. The findings and analysis are found in Section 4.4, *Cultural Resources* and Table 4.14.1 above. Without mitigation, construction impacts to TCPs 1 through 3 (sites CA-RIV-645, CA-RIV-3335, and CA-RIV-12244) would be significant. With mitigation, impacts would be less than significant.

In an effort to minimize impacts and address concerns of the Pechanga Tribe, as part of a PDF, the Project has been modified to avoid or minimize impacts to sensitive cultural resources. Furthermore, the Lead Agency and Project Applicant, in coordination with the Pechanga Tribe, modified the McElwain Road extension right-of-way and alignment to further minimize impacts to sensitive cultural resources, including TCPs. Mitigation measures have also been identified to further reduce impacts. Implementation of Mitigation Measure (MM) CUL-1 (see Section 4.4, page 4.4-54) is recommended which entails Phase 3 Data Recovery to further document the sites and to fully mitigate development impacts. Further, construction monitoring (MM CUL-5 and MM CUL-6, see Section 4.4, page 4.4-57) will also be recommended. MM CUL-10 (see Section 4.4, page 4.4-58), and MM CUL-13 through MM CUL-16 (see Section 4.4, pages 4.4-60 and 4.4-61) address impacts specific to TCP 1 (CA-RIV-645), TCP 2 (CA-RIV-3335), and TCP 3 (CA-RIV-12244). See subsection 4.4.7, *Impacts Assessment and Mitigation Measures* in Section 4.4, *Cultural Resources* for detailed list of mitigation measures proposed for impacts to cultural resources, including TCPs.

Upon Project construction and completion, the Project site will be a mixed-use housing, recreation, and commercial use development. These land use activities will not further impact TCPs. In consideration of PDFs and cultural resource mitigation measures, Project impacts to TCPs will be less than significant with mitigation incorporated.

In summary, Table 4.14-3, *Cultural Resource Impacts and Mitigation* below lists the three resources discussed in this section that were evaluated for eligibility recommendation, their TCP findings, and their significance before mitigation; recommended mitigation; and significance after mitigation.

Table 4.14-3: Cultural Resources Impacts and Mitigation

Resource Number	Site Eligibility Recommendations with Significance Criteria			Impact Before Mitigation	Site-Specific Recommended Mitigation	Impact After Mitigation
	Recommended CRHR Eligible?	TCP Finding(s)	Recommended NRHP Eligible?			
TCP 1 CA-RIV-645	Yes, Criteria 1, 3 and 4	Petroglyphs, pictographs, tourmaline, crystal, non-human burned bone, rock shelters, bedrock milling features, pestles, stone tool fragments, debitage, and Pechanga Tribe-identified "killed" metates. 2,833 artifacts were collected at this site.	Yes, Criteria a, c, and d	Significant	MM CUL-1, MM CUL-10, MM CUL-13, MM CUL-14	Less than Significant with Mitigation Incorporated
TCP 2 CA-RIV-3335	Yes, Criteria 1 and 4	Crystal, non-human burned bone and many Pechanga Tribe-identified "killed" metates. 1,718 artifacts were collected at the site.	Yes, Criteria a and d	Significant	MM CUL-1, MM CUL-10, MM CUL-16	Less than Significant with Mitigation Incorporated

Table 4.14-3: Cultural Resources Impacts and Mitigation

Resource Number	Site Eligibility Recommendations with Significance Criteria			Impact Before Mitigation	Site-Specific Recommended Mitigation	Impact After Mitigation
	Recommended CRHR Eligible?	TCP Finding(s)	Recommended NRHP Eligible?			
TCP 3 CA-RIV-12244	Yes, Criteria 1 and 4	High quantities of burned, fragmented metates. Majority of the parcel's burned non-human bone is found in this site, along with many killed metates, but no thermal features. 1,120 artifacts were collected at this site.	Yes, Criteria a and d	Significant	MM CUL-1, MM CUL-10, MM CUL-13, MM CUL-14, MM CUL-15	Less than Significant with Mitigation Incorporated

Off-Site Construction and Operations Impacts

The Project proposes off-site utility and circulation improvements. While archaeological records search and field survey did not reveal any previously documented TCPs within or near the Project site, the field surveys did not include off-site portions of the Project.

Construction and operations impacts from the off-site utility improvements within Keller Road and Zeiders Road are unlikely due to their previous disturbance from earlier roadway construction and utility placement activities. However, in the event that cultural resources are encountered during construction, MM CUL-3 (see Section 4.4, page 4.4-55) would be implemented to address inadvertent finds.

The McElwain Road extension construction occurs in the southeast area of the Project area, within proximity to the Greer Ranch residential community. As stated previously, a PDF to modify the McElwain Road right-of-way and alignment to further minimize impacts to TCPs was developed by the Lead Agency and Project Applicant, in coordination with the Pechanga Tribe. The off-site portion of the McElwain Road extension was not included in the study area for cultural resources, including TCPs. However, during Project site preparation and construction (including the off-site improvements), MM CUL-3 (see Section 4.4, page 4.4-55) would be implemented to address inadvertent finds and MM CUL-5 and MM CUL-6 (see Section 4.4, page 4.4-57) address monitoring during earthwork and ground-disturbing activities; therefore, mitigating off-site construction and operation impacts to less than significant.

MITIGATION MEASURES

MM CUL-1 (see Section 4.4, page 4.4-54), MM CUL-3 (see Section 4.4, page 4.4-55), MM CUL-5 (see Section 4.4, page 4.4-57), MM CUL-6 (see Section 4.4, page 4.4-57), MM CUL-10 (see Section 4.4, page 4.4-58), and MM CU-L-13 through MM CUL-16 (see Section 4.4, page 4.4-60 and 4.4-61) in Section 4.4, *Cultural Resources* are applicable.

4.14.7 CUMULATIVE IMPACTS

The Tribe's Correspondence asks the City, in completing the Project DEIR, to consider that development of the Project may result in cumulative impacts to historic resources and historic properties, including tribal cultural resources.

Cumulative impacts are defined in CEQA Guidelines §15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."[21] While the effects of any single project may be individually limited, the impacts, when taken with other projects are cumulatively considerable.[22]

The very nature of cultural and tribal resource evaluations make cumulative impacts evaluations difficult. There are no unified or comprehensive records of the scope and nature of resources, and the fact that many sites remain unknown/undocumented creates further complications. Added to those issues is the fact that prior projects have concluded that impacts to cultural and tribal resource impacts are mitigated to a level of less than significant so the foundation for a cumulatively significant finding does not exist in the public record. Making a cumulative finding is equally difficult for future projects in the area because of the lack of information on existing cultural sites, the unknowns of undiscovered cultural sites, and the fact that future project design can be adjusted to avoid impacts to cultural sites.

Unfortunately, without a regional or area study or ethnography which the City can rely on to set the baseline for a cumulative impacts analysis it is not feasible or possible for the City to determine whether or to what extent development, including the Project, will result in impacts to cultural resources and if those impacts can be mitigated to a level of less than significant. Without substantial evidence to support the conclusion that the Project, when constructed, will contribute to a cumulative impact on area-wide resources, making a legally valid finding that one development, like the Project, will result in cumulative impacts to historic resources and historic properties, including tribal cultural resources, is not possible.

4.14.8 SIGNIFICANT UNAVOIDABLE IMPACTS

The Tribe's Correspondence asserts that, in the event the Pechanga Tribe's proposed mitigation measures are not feasible, the City must make a significant impact finding with respect to historic resources. However, when one reviews the public record for this Project, including all relevant studies, mitigation measures and data, there is a lack of substantial evidence in the record to support the Tribe's Correspondence conclusion of a significant and unavoidable impact.

California Public Resources Code section 21081 requires lead agencies to either require mitigation for potentially significant impacts or provide a statement of overriding considerations justifying approval of a project that may result in significant impacts on the environment[23]. As documented in the Project DEIR, the City has identified, for each significant site, feasible mitigation measures to reduce project impacts to a less than significant level. Examples of those mitigation measures include requiring archaeological and tribal monitoring, controlled grading, and providing reburial and repatriation areas on the Project site.

It is also important to note that the environmental impact report for the County of Riverside General Plan EIR for cultural resources (County's General Plan EIR) concludes:

> *Development and implementation activities resulting from the proposed project, General Plan Amendment No. 960, would be subject to a number of existing state and federal laws,*

[21] See also CEQA Guidelines §15130.
[22] See California Public Resources Code §21083(b)(2). As used in this section, "cumulatively considerable" means the incremental effects of any individual project are considerable when viewed in connection with the effects of past projects, the effects of other projects, and the effects of probable future projects.
[23] See also CEQA Guidelines Section 15043 and Guidelines Section 15093.

General Plan policies, Riverside County Ordinance; Planning Department procedures, standard and tailored conditions of approval and existing Mitigation Measures 4.7.1A and 4.7.1B from EIR 441, as well as new Mitigation Measure 4.9.1-N1, as identified [in the document]. Collectively, these regulatory compliance and mitigation measures would reduce to below the level of significance any potential adverse changes in the significance of either archaeological or historical resources, as they are defined in CCR Section 15064.5 . . . In total, these measures ensure that any significant adverse impacts to cultural resources resulting from future development accommodated by GPA No. 960 would be mitigated to below the level of significance. See County General Plan EIR, page 4.9-49.[24]

CEQA requires a statement of overriding considerations only when a project's significant impacts are not substantially mitigated. When a lead agency makes a determination that an impact is less than significant, a statement of overriding considerations is not required. The City finds no substantial evidence at this point in time in the Tribe's Correspondence or the DEIR for the Project to substantiate a finding of a significant and unavoidable impact to historic resources, including tribal cultural resources. Therefore, a statement of overriding considerations is not necessary nor required for the Project.

4.14.9 REFERENCES

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City of Murrieta. (2011). *Murrieta General Plan 2035, Section 5-9: Cultural Resources*. Page 5.9-28. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/754/05-09---Cultural-Resources-PDF. Accessed March 5, 2020

[24] A similar conclusion was made for the environmental impact report (EIR) for the City's General Plan where it specifically concludes that buildout of the City will not result in significant and unavoidable impacts to cultural and historic resources. Specifically, the General Plan EIR makes the following finding:
Potential cultural resource impacts associated with the development of individual projects under the proposed General Plan 2035 would be specific to each site. All new developments would be required to comply with existing Federal, State, and local regulations concerning the protection of archaeological, paleontological and historic resources on a project-by-project basis. Additionally, implementation of the goals and policies of the proposed General Plan 2035, and recommended mitigation measures, would reduce potential impacts to undocumented archaeological resources, cultural resources, and historical structure/resources to less than significant levels. Thus, implementation of the proposed General Plan 2035 would not result in cumulatively considerable cultural resource impacts.
See City's General Plan EIR, Section 5.9.5, page 5.9-28.[24]
An additional finding, specific to significant unavoidable impacts, is also made in the City's General Plan environmental impact report:
Impacts related to cultural resources associated with implementation of the proposed General Plan 2035 would be less than significant by adherence to and/or compliance with the existing regulatory framework, proposed General Plan 2035 goals and policies, and mitigation measures. No significant unavoidable cultural resource impacts would occur as a result of buildout of the proposed General Plan 2035.
See City's General Plan EIR, Section 5.9.6, page 5.9-28. [24]

Pentney, S. (2014). *Draft Cultural Resources Assessment Murrieta Hills Specific Plan Amendment EIR*. San Diego, CA: Atkins. EIR Confidential Appendix 9.4.2.

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4.15 UTILITIES AND SERVICE SYSTEMS

4.15.1 INTRODUCTION

This section examines the public utilities and service systems that would be used by the Murrieta Hills Specific Plan Amendment (MHSPA or Project) and describes the Project's potential impacts on those public systems. Information is based on the MHSPA; the *Development Design Conditions (DDC) with Murrieta Hills (Specific Plan 320 / TTM 35853) Master Water and Wastewater Plan of Service* (Michael Baker International [MBI], 2015, EIR Appendix 9.10.1); Eastern Municipal Water District's (EMWD) *Water Supply Assessment (WSA) Report* (2018, EIR Appendix 9.10.2); EMWD's *Eastern Municipal Water District 2015 Urban Water Management Plan* (2016, EIR Appendix 9.10.3); *Murrieta General Plan 2035* (Murrieta GP); *Murrieta Municipal Code* (Murrieta MC); and available information from local utility and service providers.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section: (issues related to storm water drainage facilities are addressed in Section 4.9, *Hydrology and Water Quality*):

- Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Would the 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?
- Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.15.5, *Impacts and Mitigation Measures* below, impacts vary and include less than significant and less than significant with mitigation incorporated.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and

immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.15.2 ENVIRONMENTAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1]

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

WATER

Water services for the Project would be provided by the EMWD. Originally created under the Municipal Water District Act in 1911, EMWD was later annexed into the Metropolitan Water District of Southern California (MWD) in 1951, from whom it receives 75 percent of its potable water supply. The remaining 25 percent of EMWD's potable water is supplied from groundwater wells located in the Hemet and San Jacinto Valley area, and in areas around Moreno Valley, Perris Valley, and Murrieta.[2]

The service area for EMWD encompasses a 555-gross-square-mile area reaching from the City of Riverside to the City of Temecula, and from the San Jacinto Valley to Good Hope and Mead Valley (Exhibit 4.15-1, *Areas Within EMWD Boundaries*). Within its service area EMWD provides water utilities to over 795,000 people. The water from EMWD is also delivered to its customers indirectly through other water providers including:

- The City of Hemet Water Department
- City of Perris/North Perris Water System
- City of San Jacinto Water Department
- Lake Hemet Municipal Water District

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] EMWD. (2019). *Water Supply*. Retrieved from EMWD Website: https://www.emwd.org/water-supply. Accessed August 9, 2019.

- Murrieta Division of Western Municipal Water District
- Nuevo Water Company
- Rancho California Water District[3]

Water Sources

The four sources of EMWD's water supply consist of imported water from the MWD, local potable groundwater, local desalinated groundwater, and recycled water. From 2010 to 2015, the EMWD's water supply portfolio averaged 57 percent imported water; 10 percent groundwater; four percent desalinated groundwater; and 29 percent recycled water.[4] Table 4.15-1, *Water Supply Portfolio (AF)* below shows EMWD's water supply based on each source category from the 2012 through 2017.

Table 4.15-1: Water Supply Portfolio (AF1)

Type	Source	2012	2013	2014	2015	2016	2017
Imported – MWD Treated	Metropolitan Water District	62,000	62,200	66,900	39,200	47,700	58,000
Imported – EMWD Treated	Metropolitan Water District	18,300	18,200	21,600	18,600	15,500	12,900
Imported - Raw	Metropolitan Water District	13,300	16,000	15,300	11,900	13,300	7,600
Groundwater[2]	San Jacinto River Groundwater Basin	15,500	18,800	12,800	14,600	14,900	13,300
Desalination[3]	San Jacinto River Groundwater Basin	5,700	4,800	6,800	7,300	6,500	6,300
Recycled Water	Regional Water Reclamation Facilities	44,900	44,900	46,900	45,200	44,800	43,800
	Total	159,700	164,900	170,300	136,800	142,700	141,900

Source: EMWD. (2018). *Water Supply Assessment Report – Murrieta Hills.* Page 6. Table 2: Water Supply Portfolio (AF). EIR Appendix 9.10.2.

[1] AF=Acre Foot
[2] Groundwater totals may include raw, brackish groundwater used to augment the recycled water system (served to agricultural customers). Portions of the groundwater basin from which EMWD pumps potable groundwater are adjudicated under the Hemet-San Jacinto Watermaster and subject to adjusted base production rights.
[3] Refers to flow effluent from EMWD's desalination facilities (as opposed to total pumping from brackish wells, which are the influent flow).

Due to the drought conditions affecting the EMWD service area, and the greater state of California in recent years, water-saving regulations were proposed by the State Water Board (SWB) and therefore led to water supply reduction in the year 2015. With future developments inside of EMWD's service area, EMWD has projected an increase in imported water from MWD supplemented by sponsoring projects that increase the local supply. EMWD has projected its increased water supply in five-year increments through the year 2040. Table 4.15-2, *Projected Water Supply (AF)* below outlines those water supply projections.

[3] EMWD. (2018). *Water Supply Assessment Report – Murrieta Hills.* Page 4. EIR Appendix 9.10.2.
[4] EMWD. (2018). *Water Supply Assessment Report – Murrieta Hills.* Page 5. EIR Appendix 9.10.2.

Table 4.15-2: Projected Water Supply (AF)

Type	Source	2020	2025	2030	2035	2040
Imported Water[1]	Metropolitan Water District	131,697	143,197	158,197	172,797	186,897
Groundwater[2]	San Jacinto River Groundwater Basin	12,303	12,303	12,303	12,303	12,303
Desalination	San Jacinto River Groundwater Basin	7,000	10,100	10,100	10,100	10,100
Recycled Water	Regional Water Reclamation Facilities	46,901	53,100	55,200	57,400	58,900
	Total	197,901	218,700	235,800	252,600	268,200

Source: EMWD. (2018). *Water Supply Assessment Report – Murrieta Hills.* Page 8. Table 3: Projected Water Supplies – Average Year Hydrology. EIR Appendix 9.10.2.

[1] Includes 7,500 AF annually to be delivered by the MWD to meet the Soboba Settlement Agreement.
[2] Portions of the groundwater basin from which EMWD pumps potable groundwater are adjudicated under the Hemet-San Jacinto Watermaster and subject to adjusted base production rights.

Wholesale Water

Approximately 75 percent of EMWD's potable (drinking) water demand is supplied by imported water from the MWD through its Colorado River Aqueduct (CRA) and its connections to the State Water Project (SWP).[5] As noted in EMWD's *2015 Urban Water Management Plan* (UWMP), "*MWD is facing significant challenges in providing adequate, reliable and high-quality supplemental water for Southern California. Dry conditions have impacted water supply reliability on both the SWP and the CRA requiring MWD to make significant withdrawals from its storage reserves. MWD has progressively taken action to address these challenges including; increasing incentives for conservation and recycled water conversion, augmenting supplies through transfers and exchanges, and modifying its distribution system to increase CRA delivery capabilities. In 2015, MWD also implemented Level 3 (15 percent regional reduction) of is Water Supply Allocation Plan (WSAP) allocating water to its member agencies to preserve limited storage. MWD's forecast shows that under multiple-dry year hydrology, MWD could face reduced supply capabilities during the next three years. EMWD will respond to any potential shortages by reducing demand through its WSCP [Water Shortage Contingency Plan]. Moving forward, flexible and adaptive regional planning strategies are required. MWD's continued progress in developing a diverse resource will allow it to meet the region's water supply needs. MWD's 2015 UWMP detailed its planning initiatives and based on these efforts concluded that with the storage and transfer programs developed, MWD has sufficient supply capabilities to meet the expected demands of its member agencies from 2020 through 2040 under normal, historic single-dry and historic multiple-dry year conditions*."[6]

Based on the 2015 UWMP, the additional water supply needed to support new growth in the EMWD service area would be provided through an increase in imported water from MWD. EMWD already relies on MWD for the majority of its potable water with the MWD's Mills Water Filtration Plant (WFP) servicing

[5] EMWD. (2019). *Imported Water*. Retrieved from EMWD Website: https://www.emwd.org/post/imported-water-0. Accessed April 8, 2019.
[6] EMWD. (2016). *Eastern Municipal Water District 2015 Urban Water Management Plan*. Page 7-1. EIR Appendix 9.10.3.

EMWD's northern territory, and MWD's Skinner WFP servicing EMWD's southern territory. These water sources are confirmed to be reliable through the year 2040 by the UWMP.[7, 8]

Groundwater

Approximately 25 percent of EMWD's potable (drinking) water demand is supplied by EMWD groundwater wells. The majority of the groundwater produced by EMWD comes from its wells in the Hemet and San Jacinto area. Some of these wells have limited production as a result of the Fruitvale Judgment and Decree in which limited pumping in the Canyon and San Jacinto Upper Pressure sub-basins.[9] EMWD also has wells in the Moreno Valley, Perris Valley and Murrieta areas.[10] EMWD currently considers its groundwater supply to be fully utilized by existing customers. Although the expansion of its desalination facilities will provide additional potable water supplies, EMWD will continue to rely upon imported water to meet growth in water demand associated with new projects, as local water supplies would not be enough to service the District's growth. EMWD's groundwater is managed through EMWD's Groundwater Reliability Plus program and the regional Integrated Recharge and Recovery Program.

Recycled Water

Potable water use is supplemented by recycled water wherever possible within EMWD's service areas. Recycled water is used mostly for irrigation and industrial uses. EMWD's agricultural customers also utilize recycled water, with some of them using it instead of groundwater. Like its groundwater supply, EMWD's approximately 45 MGD supply of recycled water is currently being fully utilized by existing customers. However, the recycled water supply will expand along with the population within the EMWD service area. This will be accomplished through the retrofitting of more landscaping customers currently utilizing potable water and future potable recharge projects.

Conservation

EMWD has a comprehensive water use efficiency program to encourage, and enforce, water conservation, primarily through its WSCP and Water Use Efficiency Requirements. In accordance with California Water Code 10632 requirements, EMWD is responsible for conserving the available water supply, protecting the integrity of water supply facilities, and implementing a contingency plan in times of drought, supply reductions, failure of water distribution systems, or emergencies. EMWD adopted the WSCP to regulate the delivery and consumption of water use during water shortages. Currently, EMWD is in Stage 2 of its water supply alert, which asks for a voluntary reduction of up to 25 percent achieved through enforcing water use efficiency regulations, tiered water rates and penalties for water runoff.[11] New state legislation (discussed below under Regulatory Framework) will require EMWD to implement additional water conservation measures by the year 2022.

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7 EMWD. (2016). *Eastern Municipal Water District 2015 Urban Water Management Plan*. Page 7-12 EIR Appendix 9.10.3.

8 Even though MWD is currently operating at 35% of its State Water Project Allocation, based on the Department of Water Resources' February 20, 2019 notification letter, EMWD has concluded it can rely on imported water from MWD, based on MWD's *Urban Water Management Plan*.

9 Brown, A., Langridge, R., Rudestam, K., et al. (2016). *An Evaluation of California's Adjudicated Groundwater Basins.* Page 168. Santa Cruz, CA: UC Santa Cruz. Retrieved from California State Water Resources Control Board Website: https://www.waterboards.ca.gov/water_issues/programs/gmp/docs/resources/swrcb_012816.pdf. Accessed August 9, 2019.

10 EMWD. (2019). *Imported Water*. Retrieved from EMWD Website: https://www.emwd.org/post/imported-water-0. Accessed April 8, 2019.

11 EMWD. (2019). *Water Shortage Contingency Plan*. Retrieved from EMWD Website: https://www.emwd.org/post/water-shortage-contingency-plan. Accessed April 8, 2019.

EXISTING INFRASTRUCTURE

Water

The Project area currently has existing water service infrastructure, including a 12-inch waterline that runs westward from I-215 along Keller Road to Zeiders Road. A 30-inch waterline goes from I-215 westward along Keller Road, leading to a water tank southwest of Gloria Road. Note that the water tank is owned by EMWD and not located within the Project boundary, but bordered by the Project to the east, south, and west, and Keller Road to the north. The Project's connection point for water service will be to the existing 12-inch waterline at the intersection of Zeiders Road/McElwain Road and Keller Road (Exhibit 3-17, *Water Plan*).

Wastewater

Wastewater and sewage services would be provided by EMWD, served by EMWD's Perris Valley Regional Water Reclamation Facility (PVRWRF), which is the largest of EMWD's four operating plants. The plant produces tertiary-treated water and can store more than two billion gallons of recycled water for use by surrounding agricultural customers. The PVRWRF receives sewage from a 120-square-mile area surrounding Perris, Menifee, Romoland, Homeland, Winchester, and beyond. Located on approximately 300 acres just west of I-215 and south of Case Road, the facility on average treats 13.8 million gallons of wastewater per day, with a current capacity of 22 million gallons per day (MGD) and an ultimate capacity of 100 MGD. Additional wastewater storage can be achieved through the pumping of reclaimed water to storage ponds 10 miles away from the facility in Winchester and in the Lake Elsinore area.[12]

Connections would be made from the Project site to existing off-site sewer line in Zeiders Road north of Keller Road (Exhibit 3-18, *Sewer Plan*).

Storm Water and Drainage

Refer to Section 4.9, *Hydrology and Water Quality*, regarding existing conditions and Project impacts with respect to storm water and drainage facilities.

Gas and Electric

The Project would be served by Southern California Gas Company and Southern California Edison electricity supply company. Existing facilities are located adjacent to the Project site on the north side of Keller Road.

A new ruling approved by the California Building Standards Commission (BSC) in December 2018 will require new residential developments of up to three stories to incorporate solar panels into their design. Starting in 2020, this new regulation will only affect newly built single-family and multi-family developments of up to three stories.[13]

[12] EMWD. (2016). *Perris Valley Regional Water Reclamation Facility* fact sheet. Retrieved from EMWD Website: https://www.emwd.org/sites/main/files/file-attachments/pvrwrffactsheet.pdf. Accessed August 9, 2019.

[13] National Public Radio (NPR). (2018). *California Gives Final OK to Require Solar Panels On New Houses*. Retrieved from NPR Website: https://www.npr.org/2018/12/06/674075032/california-gives-final-ok-to-requiring-solar-panels-on-new-houses. Accessed July 19, 2019

Solid Waste

The City of Murrieta contracts with Waste Management of the Inland Empire for solid waste services, including refuse, recycling and green waste. The City of Murrieta is currently in compliance with Assembly Bill (AB) 939, the State's source reduction and recycling regulations (see discussion below under Regulatory Framework).

Landfills serving the Project area include the El Sobrante Landfill (located in Corona off of I-15), Badlands Sanitary Landfill, and Lamb Canyon Sanitary Landfill, among others. El Sobrante Landfill is the primary landfill used by Waste Management of the Inland Empire, which is owned/operated by USA Waste Services of California, Inc. El Sobrante Landfill is permitted to process up to 16,054 tons/day, with an estimated remaining capacity of 143,977,170 cubic yards as of April 1, 2018, and an estimated closure date of January 1, 2051.[14]

Telecommunication, Cable, and Internet

Telephone facilities currently exist along the north side of Keller Road, adjacent to the Project area. Cable television, telephone, and internet services for the City are provided by Time Warner Cable, Frontier Communications, and The Southern California Telephone Company. The City also has a local TV channel called The City of Murrieta Public, Education, and Government Channel (PEG) on Frontier channel 33, and Time Warner Cable channels 29 and 3. Services were previously provided by Verizon FiOS, however Frontier acquired the FiOS network and facilities in 2014.

4.15.3 REGULATORY FRAMEWORK

FEDERAL

Safe Drinking Water Act

The U.S. Environmental Protection Agency (U.S. EPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The State Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide. DHS establishes legal drinking water standards for contaminants that could threaten public health.

STATE

Urban Water Management Planning Act

In 1983, the California legislature enacted the Urban Water Management Planning Act (California Water Code, Sections 10610–10656), which requires specified urban water suppliers within the state to prepare an UWMP and update it every five years. Specifically, Section 10610.04 et seq. as amended, of the California Urban Water Management Planning Act specifies that "Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies. As such, UWMPs serve as an important element in documenting water supply availability and reliability for purposes of compliance with Senate Bills (SB) 610 and 221, which link water supply sufficiency to large

[14] CalRecycle. (2019). SWIS Facility Detail for El Sobrante Landfill (33-AA-0217). Retrieved from CalRecycle Website: https://www2.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/. Accessed April 9, 2019.

land-use development project approvals. Urban water suppliers also must prepare UWMPs, pursuant to the Urban Water Management Planning Act, in order to be eligible for state funding and drought assistance.

In June 2016, the EMWD Board of Directors adopted the District's 2015 UWMP. This plan details EMWD's demand projections and provides information regarding EMWD's supply. The majority of EMWD's existing and future planned demand is met through imported water delivered by MWD. EMWD's 2015 UWMP relies heavily on information and assurances included in the 2010 MWD Regional UWMP when determining supply reliability. Demand for EMWD included in the 2015 UWMP is calculated across the District and is not project-specific.

The UWMP will be updated in 2021 with the most current demand rates and updated future demand projections. The updated UWMP will also include this Project in their future demand projections and updates.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) is the California (State) agency focused on providing and ensuring clean sustainable water for all state residents. This State agency works alongside other federal programs like the Clean Water Act to regulate water sources and uses. The SWRCB regulates water consumption for irrigation and drinking, as well as water discharges from construction, municipal uses, storm water, and other sources.

Assembly Bill 1668 and Senate Bill 606 – May 31, 2018

AB 1668 and SB 606 build on former Governor Brown's ongoing efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought planning. SB 606 and AB 1668 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. The two bills strengthen the state's water resiliency in the face of future droughts with provisions that include:

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers; comprised of indoor residential water use, outdoor residential water use, commercial, industrial and institutional (CII) irrigation with dedicated meters, water loss, and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and provide recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.[15]

[15] State of California. (2019). *California Statutes Making Conservation a California Way of Life*. Retrieved from State of California Website: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/california_statutes.html. Accessed April 8, 2019.

Assembly Bill 341

AB 341, approved in October 2011, is intended to reduce greenhouse gas emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in the state. 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. This law requires California commercial businesses and public entities, that generate four or more cubic yards of commercial solid waste per week or is a multi-family residential dwelling with five or more units, to arrange for recycling services.

Each local jurisdiction is required to inform businesses about the recycling requirement and to keep track of the level of recycling within the business community. In addition, each jurisdiction is required to report to CalRecycle, the state agency that oversees recycling and solid waste, on progress in the business community.[16]

Assembly Bill 939

Assembly Bill 939, the California Integrated Waste Management Act of 1989, requires each city or county to prepare a Source Reduction and Recycling Element (SRRE) to its Solid Waste Management Plan, that identifies how each jurisdiction will meet the mandatory state waste diversion goal of 50 percent by and after the year 2000. Subsequent legislation changed the reporting requirements and threshold, but restated source reduction as a priority. The purpose of AB 939 is to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible."[17]

Senate Bill 610

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to the CEQA.[18]

Senate Bill 221

Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. SB 221 is intended to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs before project construction begins.[19]

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under the SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the

[16] CLI. (2011). *Assembly Bill No. 341*. Retrieved from CLI Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB341. Accessed September 13, 2019.
[17] City of Murrieta. (2011). *General Plan 2035 EIR, Section 5.21: Solid Waste*. Page 5.21-1. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/766/05-21---Solid-Waste-PDF. Accessed September 13, 2019.
[18] California Department of Water Resources (CDWR). (2003*). Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001.* Page iii. Retrieved from CDWR Website: https://water.ca.gov/LegacyFiles/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf. Accessed September 13, 2019.
[19] Ibid.

remaining high and medium priority basins, 2042 is the deadline.[20] The San Jacinto Groundwater Basin is a high priority basin[21]; however, groundwater is not being proposed to serve this project, as EMWD considers current groundwater production to be utilized completely by existing customers.[22]

LOCAL

City of Murrieta General Plan

INFRASTRUCTURE ELEMENT

The Infrastructure Element[23] of the Murrieta GP focuses on the City's water, wastewater, flood control, storm drainage, electricity, and natural gas systems. This Murrieta GP element addresses possible impacts to the utilities' infrastructure with policies intended to maintain and provide adequate service levels with new development projects.

Goal INF-1: ***New development and redevelopment is coordinated with the provisions of adequate infrastructure for water, sewer, storm water, and energy.***

Policy INF-1.1: Encourage future development to occur in areas where infrastructure for water, sewer, and storm water can most efficiently be provided.

Policy INF-1.2: Discourage development in areas without connections to existing infrastructure, unless infrastructure is being provided.

Policy INF-1.3: Encourage the annexation of unserved areas into water district service areas.

Policy INF-1.4: Ensure that new development and redevelopment provides infrastructure for water, sewer, and storm water that adequately serves the proposed uses, and that has been coordinated with affected infrastructure providers.

Policy INF-1.8: Consult with water districts and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that fee structures are sufficient for new development and redevelopment to pay its fair share of the cost of infrastructure improvements for water, sewer, and storm water.

Policy INF-1.11: Ensure sufficient levels of storm drainage service are provided to protect the community from flood hazards and minimize the discharge of materials into the storm drain system that are toxic or which would obstruct flows.

Policy INF-1.15: Continue to implement the City's residential informational and outreach program by providing homeowners with Best Management Practices (BMP) for activities such as, but not limited to:

[20] CDWR. (2019). *SGMA Groundwater Management*. Retrieved from CDWR Website: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management. Accessed September 13, 2019.
[21] CDWR. (2019). *Sustainable Groundwater Management Act 2019 Basin Prioritization Process and Results*. Page A-18. Retrieved from CDWR Website: https://data.cnra.ca.gov/dataset/13ebd2d3-4e62-4fee-9342-d7c3ef3e0079/resource/ffafd27b-5e7e-4db3-b846-e7b3cb5c614c/download/sgma_bp_process_document.pdf. Accessed September 13, 2019.
[22] EMWD. (2018). Water Supply Assessment Report for Murrieta Hills. Page 10. EIR Appendix 9.10.2.
[23] City of Murrieta. (2011). *Murrieta General Plan 2035*. Chapter 6: Infrastructure Element. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/732/06---Infrastructure-Element-PDF. Accessed August 10, 2019.

- Disposal of fats, oils, and grease
- Disposal of garden waste
- Disposal of household hazardous waste
- Disposal of pet waste
- Garden care and maintenance
- Vehicular repair and maintenance
- Vehicular washing

Policy INF-1.17: Consider incorporating water quality features into new or redevelopment projects with sufficient land area. These features could address both project-specific and other local impacts.

Policy INF-1.18: Minimize the adverse effects of urbanization upon drainage and flood control facilities.

Policy INF-1.20: When considering development and City annexations, include assessment of all impacts to public facilities, services, and infrastructure, and identify any necessary mitigation.

Policy INF-1.21: Encourage the use of specific plans, development agreements, or mechanisms that specify the nature, timing, cost, and financing mechanisms to be used to fund water, wastewater, and/or storm drainage improvements and services.

Goal INF-2: ***Infrastructure for recycled water is expanded throughout Murrieta for irrigation and other non-potable uses.***

Policy INF-2.3: Continue to require installation of recycled water systems for landscaping, unless there is an exemption from the applicable water district.

CONSERVATION ELEMENT

This element of the Murrieta GP discusses the City's natural resources and the impacts that developments can have on them. The Conservation Element[24] covers the City's natural resources including: water, minerals, cultural, and solid waste. The focus would be kept on this element's goals and policies regarding water and solid waste for this section of the EIR.

Goal CSV-1: ***A community that conserves, protects, and manages water resources to meet long-term community needs, including surface waters, groundwater, imported water supplies, storm water, and waste water.***

Policy CSV-1.2: Promote the maximization of water supplies through conservation, water recycling, and groundwater recharge.

[24] City of Murrieta. (2011). *Murrieta General Plan 2035*. Chapter 8: Conservation Element. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/734/08---Conservation-Element-PDF. Accessed August 10, 2019.

Policy CSV-1.6: Coordinate water resource management with water districts and regional, state, and federal agencies.

Goal CSV-2: ***Murrieta promotes compliance with requirements from the State and appropriate agencies regarding comprehensive water conservation measures in buildings and landscaping.***

Policy CSV-2.1: Ensure that all developments comply with water efficiency requirements, as mandated by the applicable Building Code.

Policy CSV-2.4: Promote water-efficient landscaping practices through outreach efforts, project review, and enforcement of City, regional, or State code requirements.

Goal CSV-3: ***A community that participates in a multi-jurisdictional approach to protecting, maintaining, and improving water quality and the overall health of the watershed.***

Policy CSV-3.2: Promote storm water management techniques that minimize surface water runoff in public and private developments.

Policy CSV-3.3: Encourage the creation of a network of "green" streets that minimize stormwater runoff, using techniques such as on-street bio-swales, bio-retention, permeable pavement or other innovative approaches, as feasible.

Goal CSV-13: ***Solid waste is diverted from landfills through waste reduction, re-use and recycling.***

Policy CSV-13.1: Continue to comply with the landfill diversion requirements of the Integrated Waste Management Program.

City of Murrieta Municipal Code

WASTE MANAGEMENT

Murrieta MC Section 8.28 explains in detail the City's regulations regarding waste management. This includes the guidelines for service and requirements for both the collectors of waste and the owners of the waste-generating properties. This section also details the unlawful acts associated with trash collection, such as prohibited containers and refuse burning.

UNDRGROUNDING OF FACILITIES

Murrieta MC Section 16.18.170 provides the City's policy regarding the location of utility facilities within new developments. Moving forward, the City requires new facilities such as electrical connections, telecommunication lines, and street lighting, fire alarms, and other wiring to be placed underground. Waivers to this policy would be approved at the director's discretion.

4.15.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CEQA

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant effect on the environment if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects (issues related to storm water drainage facilities are addressed in *Section 4.9, Hydrology and Water Quality)* (see Impact 4.15-1);
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years (see Impact 4.15-2);
- 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 (see Impact 4.15-3);
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (see Impact 4.15-4); or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste (see Impact 4.15-5).

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning utilities and service systems. In addition to PDFs, this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts on utilities and service systems examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on significance criteria/threshold's application outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: the *2015 Urban Water Management Plan*; *Water Supply Assessment Report*; field observations conducted by Kimley-Horn; review of Project maps and drawings; analysis of aerial and ground-level photographs; Murrieta GP and MC; Project Studies; and review of various data available in public records, including local planning documents. The determination that a Project component will or will not result in "substantial" adverse effects on utilities and service systems considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- New connections to existing water and wastewater utility infrastructure in the Project area to reduce potential Project impacts.
- Project design includes appropriate on-site facilities in addition to new off-site water and sewer lines along Zeiders Road and Keller Road, and in the future McElwain Road extension, to adequately serve the Project.
- Efficient design and material usage
- Project will include the installation of solar panels on single-and multi-family residences, up to three stories, constructed in 2020 and later, in compliance with the State's solar mandate.
- Amend and replace the adopted Murrieta Hills Specific Plan No. SPM-4, reducing the Project development footprint and number of single-family residences; thereby reducing the required utilities placements and associated construction impacts.
- Project utilizes a smaller development footprint than the previously approved MHSP; eliminates land uses (Memorial Park and elementary school) that require regular landscape maintenance (watering and irrigation); and provides over 600 acres of open space; thereby reducing water and irrigation facilities requirements.

4.15.5 IMPACTS AND MITIGATION MEASURES

Impact 4.15-1: **Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

The Project proposes new storm drainage and water quality facilities to adequately convey on-site storm water flows. Water and wastewater facilities are also proposed throughout the developed portion of the Project area. Additionally, off-site drainage improvements are proposed along the north side of Keller Road and along McElwain Road. Potential impacts of Project drainage facilities are addressed in Section 4.9, *Hydrology and Water Quality*.

CONSTRUCTION AND OPERATIONS

Water

The Project water supply systems includes an extensive network of on-site pipelines, booster stations and storage tanks, shown in Exhibit 3-17, *Water Plan*. On-site facilities will include up to three new water tank and two booster stations. One booster station would be located north of Planning Area (PA) 5, with the other booster station located at the existing Keller Road tank site on the southwest corner of Keller Road and Gloria Road. A proposed water tank with its own private road would be located south of PA 6. The two remaining proposed water tanks would be located north of PA 5, next to the booster station. Off-site water facilities include an 18-inch water line from the Keller Road/Zeiders Road intersection to the proposed on-site booster pump stations. The EMWD has also asked that the Project construct EMWD

facilities as part of its Water Facilities Master Plan, including an 18-inch water line from the Keller Road/Zeiders Road intersection to Linnel Lane (for potential reimbursement by the EMWD).[25] No other off-site improvements would be required.

Impacts of required water facilities are addressed throughout this EIR in the respective EIR section(s). The majority of Project water facilities would be installed below ground and installed within existing or future road rights-of-way, and as such the only physical impacts would be associated with temporary impacts during construction (refer to Section 4.11, *Noise* for a discussion of significant short-term noise impacts during pipeline construction). Above-ground facilities, such as the two booster pump stations and water quality basins, are primarily within the Project's residential and commercial PAs and as such are addressed in respective EIR section(s), with the exception of the water tank and associated access road which is located within an open space area in higher elevations below PA 6 (addressed in Section 4.1*, Aesthetics/Light and Glare*). All Project water facilities would be constructed and operated in accordance with applicable guidelines and regulations in the MHSPA, EMWD and City of Murrieta, and would also follow applicable EIR mitigation measures in each topical area addressed in the EIR. In consideration of existing requirements, PDFs and EIR mitigation measures, no significant impacts are anticipated with respect to Project water facilities, with the exception of potentially significant temporary construction-related noise impacts addressed in Section 4.11, *Noise*.

Wastewater

The Development Design Conditions (DDC)[26] report estimated Project wastewater generation at approximately 198,078 gallons per day (GPD) (average day) with a peak flow of 520,945 GPD. The peak day demand is only 2.4 percent of PVRWRF's current 22 MGD capacity, and only 0.5 percent of the PVRWRF's planned ultimate capacity of 100 MGD. Future expansions of this facility will be paid through connection and service fees.

The Project wastewater system includes an extensive network of on-site pipeline, shown in Exhibit 3-18, *Sewer Plan*. The wastewater system for the Project will flow entirely by gravity from southwest to northeast, and will be sized as part of final design, coordinated with EMWD and the City of Murrieta. Besides the on-site wastewater system, the Project requires an off-site connection to the existing sewer line within Zeiders Road, approximately 2,600 linear feet north of Keller Road. In addition, EMWD has requested that the ultimate sewer line along Zeiders Road be upsized to a 15-inch diameter line, consistent with its facility master planning. EMWD also requested that the 15-inch sewer line continue from Zeiders Road, east of Keller Road along the Project's commercial frontage, consistent with EMWD facility master planning (the off-site sewer lines in Zeiders Road and Keller Road would occur within existing rights-of-way).[27] The McElwain Road extension may also be required to include future facilities in the right-of-way as part of the District's master planning process, for potential reimbursement by the District.[28] No other off-site wastewater system improvements would be required.

[25] EMWD. (2018). *Development Design Conditions*. Page 3. EIR Appendix 9.10.1.
[26] Completion of the Design Conditions form (formerly the Plan of Service form) is required as part of EMWD's New Development Process to help developers acquire water, sewer, and recycled water (if available) service connections from existing or to-be constructed (public) EMWD facilities.
[27] Boeck, M. (2015). *Murrieta Hills Master Water and Wastewater Plan of Service*. Page 13. Temecula, CA: MBI. EIR Appendix 9.10.1.
[28] *Ibid,* page 16.

Proposed wastewater facilities would be below ground, within the Project's residential and commercial PAs or within existing or planned roadway rights-of-way, and as such are addressed in respective EIR section(s). As with off-site water lines, off-site sewer line construction adjacent to sensitive receptors may result in temporary significant noise impacts, as addressed in Section 4.11, *Noise*. All Project wastewater facilities would be constructed and operated in accordance with applicable guidelines and regulations in the MHSPA, EMWD and City of Murrieta, and would also follow applicable EIR mitigations in each topical area addressed in the EIR. In consideration of existing requirements, PDFs and EIR mitigation measures, no significant impacts are anticipated with respect to Project wastewater facilities, with the exception of potentially significant temporary construction-related noise impacts addressed in Section 4.11, *Noise*.

Electric Power

Electricity facilities such as powerlines and other similar system components would be required for the Project. However, this new infrastructure would be completely undergrounded, pursuant to Murrieta MC Section 16.18.170, and would be installed within the proposed development areas. Therefore, no additional significant impacts would occur due to electrical facility construction. No off-site electrical facilities are anticipated at this time.

It should be noted that the ruling approved by the California BSC in December 2018 will require new residential developments of up to three stories to incorporate solar panels into their design. Starting in 2020, this new regulation will only affect newly built single-family and multi-family residences of up to three stories. The development of these panels will be incorporated into the development of the residences and will therefore not create a separate impact on their own. As well, any potential construction impacts would be temporary and would cease at the completion of the construction phase. Operation of solar panels will reduce the demand on the existing power resources and the need for expanded electrical facilities as the residences would generate portions of their own energy supply. No significant impacts are expected from the solar panels in their operation.

Natural Gas

Natural gas services for the Project would be provided through the use of underground pipes to distribute gas within the Project area. However, natural gas facilities are planned for installation as part of Project development, within proposed development areas such as planned roadways. Therefore, construction of the Project's natural gas facilities would not create an increased impact on the environment beyond what is addressed for the overall Project, in respective EIR sections. No off-site natural gas facilities are anticipated at this time.

Telecommunication, Cable, and Internet

Cable television, telephone, and internet services for the Project site will be provided by Time Warner Cable, Frontier Communications, and Southern California Telephone Company. Telephone facilities are present along the north side of Keller Road, adjacent to the Project site. Similar to electricity and natural gas facilities, telecommunication facilities would need to be installed throughout the Project area. The new facilities required for the Project would be constructed within the development area, and would be placed underground as per Murrieta MC Section 16.18.170. Therefore, construction of the Project's telecommunication, cable and internet facilities would not create an increased impact on the

environment beyond what is addressed for the overall Project, in respective EIR sections. No off-site telecommunications facilities are anticipated at this time.

Off-Site Construction and Operations Impacts

Project-related off-site infrastructure is addressed in the respective facility discussion above (water, wastewater, electricity, natural gas, and telecommunications). Existing aerial utilities are present along the north side of Keller Road and would not be impacted or relocated as part of the Project.

MITIGATION MEASURES

No mitigation is required, other than that noted in respective EIR sections associated with general Project construction, including construction-related air quality, noise, and transportation mitigation for off-site utility and roadway installation adjacent to sensitive receptors.

Impact 4.15-2: Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal dry and multiple dry years?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The Project has an estimated water demand of 348,990 GPD (average day) and 950,860 GPD (maximum day) for development areas, with an additional estimated irrigation demand of 65,523 GPD (average day) and 131,046 GPD (maximum day).[29] Open space zones are not included in the irrigation demand. This equates to approximately 464 AF per year (AFY), representing less than 0.25 percent of EMWD's projected year 2040 water demand. According to Project's WSA (Appendix 9.10.2), although the proposed land uses would exceed water demand projections in the EMWD's current UWMP (since the site is currently zoned Rural Residential under County Land Use Ordinance 348), the WSA concluded that the total projected EMWD water demand with the Project and other planned development would still be less than the projected demand in the 2015 UWMP, and therefore could be served by available water supplies. The imported water supply received by EMWD would be capable of fully servicing the Project's needs through the year 2040, even under historic recurrent drought conditions.[30]

The EMWD has in place a WSCP to respond to potential future supply curtailments, and the EMWD's UWMP has identified additional water supplies to provide reliability and redundancy in the event that MWD imported water supply availability is reduced. These additional supplies include expansions of the EMWD's groundwater, desalting and recycling programs.[31] Therefore, the Project is anticipated to have adequate water supplies, pursuant to the approved WSA, which was also prepared to satisfy water verification report requirements for the tract map pursuant to SB 221. Therefore, no significant impacts would occur in regard to adequacy of available water supplies.

[29] EMWD. (2018). *Development Design Conditions*. EIR Appendix 9.10.1. Note that the 2018 DDC study updates the previously completed *Murrieta Hills Master Water and Wastewater Analysis* (July 2015). The DDC has slightly different land use densities than currently proposed, as the Project land use plan was further refined through the stakeholder consultation process. Final water and wastewater demands and associated facility sizing would be established as part of the final design review and building permit process with EMWD and City of Murrieta.

[30] EMWD. (2018). *Water Supply Assessment – Murrieta Hills*. Page 23. EIR Appendix 9.10.2.

[31] EMWD. (2016). *Eastern Municipal Water District 2015 Urban Water Management Plan*. Page 6-28. EIR Appendix 9.10.3.

MITIGATION MEASURES

No mitigation is required.

Impact 4.15-3: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity, including treatment and/or outfall capacity, to accommodate the project's projected demand in addition to the provider's existing commitments?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

See the discussion for Impact 4.15-1. EMWD approved a DDC form for the Project, which indicates that proposed on-site and off-site facilities will provide adequate wastewater service for the Project. The DDC report estimated Project wastewater generation at approximately 198,078 GPD (average day) with a peak flow of 520,945 GPD. PVRWRF's typical daily flow is 13.8 MGD. The Project would increase PVRWRF's typical daily flow by 1.4 percent (average day) and 3.8 percent (peak flow).[32] The peak day demand is only 2.4 percent of PVRWRF's current 22 MGD capacity, and only 0.5 percent of the PVRWRF's planned ultimate capacity of 100 MGD. Future expansions of this facility will be paid through connection and service fees. Therefore, no significant impacts are anticipated with respect to providing adequate wastewater facilities to serve the Project.

MITIGATION MEASURES

No mitigation is required.

Impact 4.15-4: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

Solid waste generated by the Project would be collected and handled in compliance with any applicable regulation including those in Section 8.28 of the Murrieta MC, through service provided by Waste Management of the Inland Empire. Assuming an average of 12.23 pounds per dwelling unit per day, the Project's 750 residential units would generate an estimated 4.6 tons per day. Commercial uses would generate an estimated six pounds per day per 1,000 square feet of commercial space, equating to approximately 0.7 ton per day.[33] Combined with the residential solid waste generation, the Project's total daily solid waste generation is estimated at 5.3 tons per day. This represents less than 0.001 percent of the daily throughput for the El Sobrante Landfill, and is not considered to represent a significant impact given the landfill's remaining capacity through year 2051.

[32] EMWD. (2016). *Perris Valley Regional Water Reclamation Facility* fact sheet. Retrieved from EMWD Website: https://www.emwd.org/sites/main/files/file-attachments/pvrwrffactsheet.pdf. Accessed August 9, 2019.

[33] City of Murrieta. (2011). *Murrieta General Plan 2035 Final EIR*. Section 5.21 - Solid Waste. Page 5.21-5. Table 5.21-2. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/766/05-21---Solid-Waste-PDF. Accessed April 10, 2019.

Furthermore, effective January 1, 2011, CALGreen required the diversion of at least 50 percent of the construction waste generated during most "new construction" projects. Effective January 1, 2014, CALGreen mandates permitted new residential and non-residential building construction, demolition and certain additions and alteration projects to recycle and/or salvage for reuse a minimum 50 percent of the nonhazardous construction and demolition (C&D) debris generated during the project (CALGreen sections 4.408, 5.408, 301.1.1 and 301.3).[34] As a result of this, the project will have a less than significant impact due to the salvage or re-use of recycled materials which is not anticipated to affect the El Sobrante Landfill capacity.

Off-Site Construction and Operations Impacts

The off-site circulation and utility improvements proposed by the Project would not substantially contribute to solid waste. The proposed improvements are intended to assist in water/wastewater and roadway circulation and would not generate solid waste in their usage. The amount of waste generated during construction of the off-site improvements would be temporary in nature and would not provide a significant impact to the solid waste management capability or capacity in the City. The operation of the off-site infrastructure is also not expected to generate significant amounts of waste due to their intended use for water and wastewater conveyance and transportation improvements. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation is required.

Impact 4.15-5: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The Project would comply with applicable local, state and federal regulations regarding solid waste, including those of the City of Murrieta. Murrieta MC Section 8.28 provides policies and regulation regarding solid waste handling by both customers and collectors. The City implements AB 939 source reduction and recycling measures to reduce solid waste generation, and has been found to be compliant with AB 939.[35] In coordination with Waste Management of the Inland Empire and Riverside County Department of Waste Resources, the City of Murrieta also supports solid waste programs, such as Household Hazardous Waste collection and electronics recycling.

Off-Site Construction and Operations Impacts

See previous discussion under Impact 4.15-4. The amount of waste generated during construction of the off-site improvements would be temporary in nature and would not provide a significant impact to the solid waste management capability or capacity in the City. The operation of the off-site infrastructure is

[34] CalRecycle. (2018). *CALGreen Requirements.* Retrieved from https://www.calrecycle.ca.gov/lgcentral/library/canddmodel/instruction/newstructures. Accessed August 15, 2019.

[35] City of Murrieta. (2019). *Residential Services*. Retrieved from City of Murrieta Website: http://www.murrietaca.gov/324/Residential-Services. Accessed August 9, 2019.

also not expected to generate significant amounts of waste due to their intended use for water and wastewater conveyance and transportation circulation. The construction and operation of the off-site infrastructure is not anticipated to generate substantial solid waste nor conflict with any solid waste statutes or regulations.

MITIGATION MEASURES

No mitigation is required.

4.15.6 CUMULATIVE IMPACTS

For purposes of public utilities and service systems, cumulative impacts are considered for projects located within Murrieta and Menifee; see Table 4-1, *Cumulative Projects List*. As discussed above, all Project impacts to utilities and service systems would be less than significant in consideration of compliance with existing laws, ordinances, regulations and standards, in addition to PDFs, payment of applicable development impact and service fees, and implementation of EIR mitigation measures (with the exception of temporary construction noise for off-site pipeline construction and utility placement adjacent to sensitive receptors, addressed in Section 4.11, *Noise*). Impacts related to storm water drainage facilities are addressed in Section 4.9, *Hydrology and Water Quality*. Although there are potential impacts associated with off-site utility construction and placement, these impacts are temporary in nature and typical of municipal utility construction. As well, these impacts are generally localized and occur at different times rather than simultaneously to avoid significant cumulative impacts from multiple projects. In addition, the Murrieta GP Final EIR did not identify any unavoidable significant cumulative impacts regarding public utilities and service systems. Mitigation measures have also been created for this Project which fully mitigate its contribution to cumulative impacts. This includes air quality, noise, and traffic impact measures as well as others described and explained in their corresponding sections within this document (sections 4.1 through 4.16). Therefore, there are no significant cumulative impacts anticipated relative to public utility and service systems, and the Project's contribution toward potential future utility and service system impacts in the City of Murrieta is not cumulatively considerable.

4.15.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable utilities and service systems impacts have been identified for either the construction or operation phases of the Project.

4.15.8 REFERENCES

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EMWD. (2016). *Eastern Municipal Water District 2015 Urban Water Management Plan.* San Diego, CA: RMC Water and Environmental. EIR Appendix 9.10.3.

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State of California. (2019). *California Statutes Making Conservation a California Way of Life*. Retrieved from State of California Website: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/california_statutes.html.

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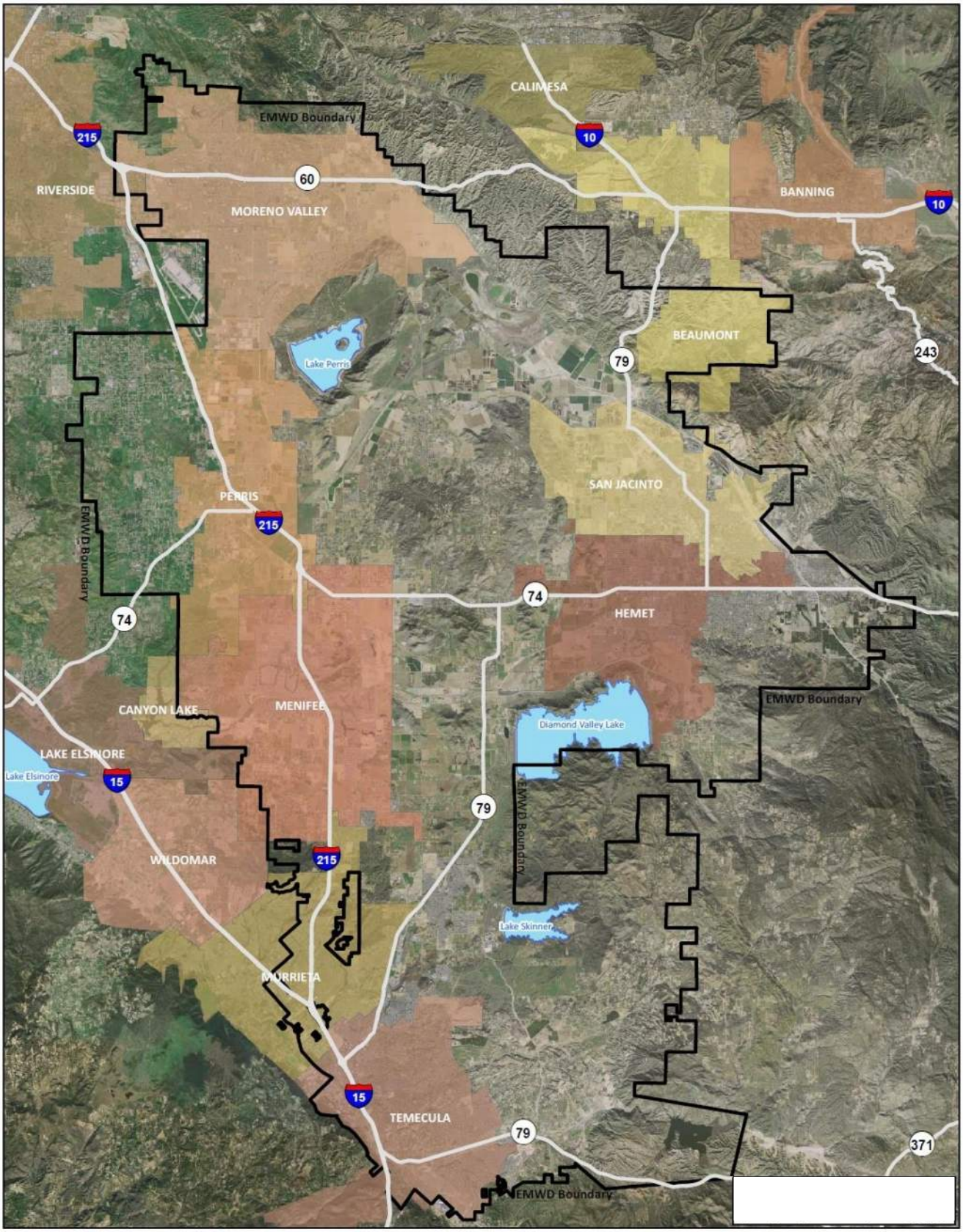

Source: EMWD 2015 Urban Water Management Plan, Figure 3-1

Not to Scale

EXHIBIT 4.15-1: Areas within EMWD Boundaries
Murrieta Hills Specific Plan Amendment

Kimley»Horn

4.16 WILDFIRE HAZARDS

4.16.1 INTRODUCTION

This section examines potential wildfire hazards impacts that may result from the implementation of the Murrieta Hills Specific Plan Amendment (MHSPA or Project) by identifying existing wildfire hazard conditions of the Project site and surrounding area; considering applicable federal, state, regional and local goals and policies; identifying and analyzing environmental impacts; and recommending mitigation measures to minimize or avoid potential adverse impacts resulting from Project implementation.

In accordance with the requirements of California Environmental Quality Act (CEQA) Appendix G, the following inquiries are made, analyzed and discussed in this section.

> If located in or near state responsibility areas or lands classified as very high fire hazard severity zones (*VHFHSZ*), would the Project:
>
> a) Substantially impair an adopted emergency response plan or emergency evacuation plan?
>
> b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
>
> c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
>
> d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Also addressed as part of this analysis is the Fire Protection portion of Public Service factors analyzed under CEQA Appendix G. Combining the Fire Protection portion of Public Services with this Wildfire Hazards impact analysis brings together impacts from wildfire and associated prevention/protection.

> *Public Services:* Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
>
> - Fire protection?

Analysis of area cumulative impacts and identification of appropriate and feasible mitigation measures are also included in the discussion portions of this section. As will be demonstrated in Section 4.16.5, *Impacts and Mitigation Measures* below, impacts vary and include less than significant and less than significant with mitigation incorporated.

Information presented in this wildfire hazards impact analysis is derived largely from the *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853* (FPTR) prepared by Dudek (Huff, 2019). The report has been included as EIR Appendix 9.11.1. Other information in this section, such as regulatory framework, is derived from the various planning documents including the *City of Murrieta General Plan*

2035 (Murrieta GP), *City of Murrieta Municipal Code* (Murrieta MC), and pertinent State of California Building Codes.

PROJECT LOCATION

The approximately 972-acre Project site is located in unincorporated Riverside County, abutting the City of Menifee which is north of the site, with the City of Wildomar to the west, Western Riverside County Regional Conservation Authority-owned (WRCRCA) land to the southwest, and the City of Murrieta to the south and east, as depicted in Exhibit 2-1, *Regional Location Map*. The Project site is immediately west of Interstate 215 (I-215), approximately three miles east of Interstate 15 (I-15), south of Keller Road, and immediately north of the Greer Ranch community in the City of Murrieta, as shown in Exhibit 3-3, *Vicinity Map*. Regional access is provided via I-215 and local access is provided via Keller Road, Scott Road, Clinton Keith Road, and Antelope Road.

4.16.2 ENVIRONMENTAL SETTING

NATURAL SETTING

The MHSPA area includes several vacant parcels. Approximately 155 acres of the Project site have been disturbed by prior dry farming operations in the northeast, a former landscape nursery in the central-west, an existing water tank site to the northwest, and grading operations from the Greer Ranch Specific Plan development to the south (Exhibit 3-3, *Vicinity Map*). The Project site is crossed by several dirt roads and is further disturbed in areas by off-road vehicle activity and illegal dumping. Other areas contain undisturbed native sage and chaparral habitats, natural rock outcroppings, stands of oak trees, and riparian vegetation.[1] On-site elevations range from approximately 1,570 feet above mean sea level (MSL) in the northeast corner of the property to approximately 2,270 feet above MSL within the Project site's western portion.

This Project will amend and replace the original Murrieta Hills Specific Plan No. SPM-4 (MHSP), which was approved by the City of Murrieta in 1995 (Resolution No. 95-353). The MHSP was approved for the construction of a maximum of 1,585 residential dwelling units, a memorial park, an elementary school, a linear park/riparian area, open space, commercial uses, and major roads on a total of 985.2 acres.

This Project reduces the number of dwelling units approved under the MHSP (from 1,585 to 750); provides a more compact, sensitive design; removes the memorial park and school; increases the amount of natural, undisturbed open space (from approximately 288 acres to approximately 609 acres); removes the extension of Zeiders Road; and provides a more environmentally sensitive north–south roadway connection via the McElwain Road extension, from Linnel Lane to Keller Road.

EXISTING CONDITIONS

According to the *2018 Strategic Fire Plan For California*, a wildfire is defined as "An unplanned ignition; unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out" and a wildland fire is defined as "fire that occurs in the wildland as the result of an unplanned ignition."[2]

[1] City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164.* Page 2-2. Murrieta, CA: City of Murrieta.
[2] State of California Board of Forestry and Fire Protection and CAL FIRE. (2018). *2018 Strategic Fire Plan for California*. Page 34. Retrieved from CAL FIRE Website: https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf. Accessed August 10, 2019.

In addition, the Murrieta GP's Safety Element describes a wildfire, or wildland fire as an uncontrolled fire spreading through vegetative fuels that may expose or consume structures.[3] Wildfires are a result of any number of causes including, without limitation, downed utility lines, lightning strikes, wind-blown embers and, most commonly, people.

Wildfires may originate in undeveloped areas and spread to developed or urban areas where the landscape and structures are not designed and maintained to be ignition or fire-resistant. The area where homes are built near or among lands prone to wildland fire, such as the MHSPA Project, is called the Wildland-Urban Interface (WUI).[4] Fires that occur in WUI areas may affect natural resources as well as life and property. The potential for wildland fires represents a hazard where development is adjacent to open space or in proximity to wildland fuels, or designated fire hazard severity zones (FHSZ).

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). These maps place areas of the state into different FHSZs based on physical conditions such as fuels (materials that can burn), terrain, slope, weather, and other relevant factors. The FHSZ rankings range from moderate to high and very high, and influence how people construct buildings and protect property in an effort to reduce the risks associated with wildland fires.

The term "hazard" refers to a measure of how a fire will behave and is based on the physical conditions that give a likelihood that an area will burn over a 30 to 50-year period without considering modifications such as fuel reduction efforts. For example, a VHFHSZ has the highest likelihood of burning based on existing physical conditions, such as highly flammable vegetation, steep slopes, and hot, dry and windy weather conditions, which collectively contribute to a very high fire hazard.

As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection is classified as a State Responsibility Area (SRA). CAL FIRE defines a SRA as "Lands exclusive of cities and federal lands regardless of ownership, classified by the State Board of Forestry as areas in which the primary financial responsibility for preventing and suppressing fires is that of the State. These are lands covered wholly or in part by timber, brush, undergrowth or grass, whether of commercial value or not, which protect the soil from erosion, retard runoff of water or accelerated percolation, and lands used principally for range or forage purposes. Specifically, SRA is not federally owned, not incorporated, does not exceed a housing density of 3 units per acre, contains wildland vegetation as opposed to agriculture or ornamentals, and has watershed value and/or has range/forage value (this effectively eliminates most desert lands)."[5] Where local fire protection agencies, such as Murrieta Fire & Rescue (MFR), are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA).

CAL FIRE currently identifies the Project site as a SRA and is presently located within the service boundaries of the CAL FIRE – Riverside County Fire Department's (RCFD) jurisdiction. The Project Applicant proposes an annexation of the entire Project site into the City of Murrieta, resulting in a classification change from SRA to LRA. Once the annexation is finalized, MFR will provide initial response with structural fire

[3] City of Murrieta. (2011). *Murrieta General Plan 2035.* Chapter 12: Safety Element. Page 12-7. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed July 18, 2019.

[4] International Association of Fire Chiefs (IAFC). (2019). *Wildland Urban Interface*. Retrieved from IAFC Website: http://www.wildlandfirersg.org/about/wildland-urban-interface. Accessed August 23, 2019.

[5] CAL FIRE. SRA Definition/Background. Retrieved from https://frap.fire.ca.gov/frap-projects/wildfire-hazard-real-estate-disclosure/. Accessed February 17, 2020.

protection and medical emergency response and CAL FIRE will continue to provide wildland fire protection. The Project's WUI location is predominately within an area statutorily designated a Very High FHSZ (VHFHSZ) by CAL FIRE (CAL FIRE, as cited in Huff, 2019), County of Riverside, and City of Murrieta (City of Murrieta, as cited in Huff, 2019). A small portion of the northeast corner of the property is designated as a Moderate FHSZ (MHFSZ).[6]

According to the *Murrieta Fire & Rescue Strategic Plan for Fiscal Years 2017-2020* (2016)[7], MFR delivers emergency services with 49 personnel from five fire stations. In support of these efforts, MFR is managed administratively by a Fire Chief and a Deputy Chief, and employs a Fire Marshal, Emergency Medical Services (EMS) Coordinator, and a Training Officer. MFR provides fire suppression, EMS, technical rescue, hazardous materials mitigation, fire prevention, public education, and disaster preparedness to approximately 33.5 square miles of southwestern Riverside County, California within the City of Murrieta.

MFR operates five fire stations which house emergency response personnel and equipment. The MFR's fleet of 79 units is currently comprised of 14 light-duty units, 13 heavy-duty units, 11 trailers, five stationary generators, a forklift and 35 pieces of miscellaneous equipment (i.e. chainsaws, blowers, portable generators). The light-duty units include various sedans, pickups, SUV's and an all-terrain vehicle (ATV). The heavy-duty units include five pumpers, four brush trucks, two quints[8], a water tender and a utility stake-side truck.[9] Table 4.16-1, *Murrieta Fire Department Station Locations and Equipment*, summarizes the MFR's fire and emergency medical delivery system.

Table 4.16-1: Murrieta Fire & Rescue Station Locations and Equipment

Station No.	Location	Equipment
No. 1	41825 Juniper Street	Ladder Truck, Water Tender, Technical Rescue and Lighting & Air
No. 2	40060 California Oaks Road	Type I* and III* engines
No. 3	39985 Whitewood Road	Type I and III engines
No. 4	28155 Baxter Road	Type I and III engines
No. 5	38391 Vineyard Parkway	Type I and III engines

Source: City of Murrieta. (2019). *Murrieta Hills Specific Plan Amendment 012-3164*. Table 6.4-1: Murrieta Fire Department Station Locations and Equipment. Page 6-20. Murrieta, CA.
Source: Type I fire engines are the apparatus primarily designed for structural firefighting. Type III engines have four-wheel drive to make driving over rough terrain easier; specifically designed to assist in fighting wildfires. Accessed at: https://www.bmefire.com/types-of-fire-engines-and-how-to-distinguish-the-differences-between-them/

The nearest fire station to the Project site is MFR Fire Station No. 4, located approximately 1.2miles from the Project site at 28155 Baxter Road in Murrieta (travel distance measured from Station No. 4 to the intersection of Keller Road and Scenic View Drive). Secondary response may be provided by RCFD Fire Station No. 68 located at 26020 Wickerd Road in Menifee or other MFR fire stations such as MFR Station No.2 located at 40060 California Oaks Road (the next closest MFR station).

The outbreak and spread of wildfires within the Project area are a potential danger, particularly during the hot, dry summer and windy fall months. The buildup of dry brush provides fuel to result in potentially

[6] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 3. Encinitas, CA: Dudek.
[7] Murrieta Fire & Rescue. (2016*). Murrieta Fire & Rescue Strategic Plan for Fiscal Years 2017-2020.* Retrieved from http://www.murrietaca.gov/DocumentCenter/View/319/2017-to-2020-Strategic-Plan-PDF?bidId=. Accessed April 11, 2019.
[8] According to mysafecalifornia.org, a quint, or quintuple combination pumper, is a fire apparatus that serves the dual purpose of an engine and a ladder truck. See the following link for a detailed definition: http://www.mysafecalifornia.org/quint-fire-truck/.
[9] Murrieta Fire & Rescue. (2019). *Equipment and Facilities – Fire Fleet*. Retrieved from https://www.murrietaca.gov/305/Equipment-Facilities. Accessed April 11, 2019.

larger, more intense wildland fires. Various factors contribute to the intensity and spread of wildland fires including topography, climate, vegetation, and vegetation dynamics.

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread upslope. Terrain that forms a funneling effect, such as chimneys, chutes or saddles, on the landscape can result in especially intense fire behavior. Conversely, flat terrain tends to have little effect on fire spreading, resulting in fires that are driven by vegetation and/or wind.

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, the native shrub species that dominate the Project site are considered unlikely to ignite, but would exhibit a higher potential hazard (higher intensity heat and flame length) than grass dominated plant communities (fast moving, but lower intensity) if ignition occurred. Conditions adjacent to the Project's approximately 320-acre developmental footprint[10] (outside the fuel modification zones [FMZ]), where the wildfire threat will exist post-development, are currently classified as moderate to high fuel loads due to the higher percentage of chamise chaparral and coastal sage scrub fuels.[11]

Since 1910, approximately 38 fires within five miles of the Project site were recorded by fire agencies.[12] These fires were primarily associated with natural open spaces to the north and west of the Project site and ranged in size from four acres to 31,447 acres. Two of the 38 fires occurred partially with the limits of the Project site: one occurring between 1970-1989 and the other between 2000-2015 (Exhibit 4.16-1, *Project Vicinity Fire History*).

For fire reports beyond 2015, CAL FIRE's Incident Overview database and map were utilized.[13] One fire, the Keller Fire, has been reported on the Project site since 2015. The fire location is reported as off Scenic View Drive and Keller Road. The Keller Fire started on August 19, 2018 and burned 9.5 acres, then was contained on August 20, 2018.[14]

4.16.3 REGULATORY FRAMEWORK

FEDERAL

Federal Emergency Management Act

In March 2003, Federal Emergency Management Act (FEMA) became part of the U.S. Department of Homeland Security. FEMA's continuing mission is to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also

[10] The U.S. Green Building Council (USGBC) defines development footprint as "the total land area of a project site covered by buildings, streets, parking areas, and other typically impermeable surfaces constructed as part of the project.". Retrieved from USGBC Website: https://www.usgbc.org/guide/bdc. Accessed February 17, 2020.

[11] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 21. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

[12] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 22. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

[13] CAL FIRE (2019) *Incidents Overview*. Retrieved from CAL FIRE Website: https://www.fire.ca.gov/incidents/. Accessed August 10, 2019.

[14] CAL FIRE. (2019). Keller Fire. Retrieved from CAL FIRE Website: https://www.fire.ca.gov/incidents/2018/8/19/keller-fire/. Accessed August 10, 2019.

initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration.

Disaster Mitigation Act of 2000

This Act (42 United States Code [USC] §5121) was signed into law to amend the Robert T. Stafford Disaster Relief Act of 1988 (42 USC §5121-5207). Among other things, this legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Some of the major provisions of this Act include:

i) Funding pre-disaster mitigation activities;

ii) Developing experimental multi-hazard maps to better understand risk;

iii) Establishing state and local government infrastructure mitigation planning requirements;

iv) Defining how states can assume more responsibility in managing the hazard mitigation grant program; and

v) Adjusting ways in which management costs for projects are funded.

The mitigation planning provisions outlined in §322 of this Act establish performance-based standards for mitigation plans and require states to have a public assistance program (Advance Infrastructure Mitigation) to develop county government plans. The consequence for counties that fail to develop an infrastructure mitigation plan is the chance of a reduced federal share of damage assistance from 75 percent to 25 percent if the damaged facility has been damaged on more than one occasion in the preceding 10-year period by the same type of event.

STATE

California Public Resources Code 4290 and 4291

These regulations, which implement minimum fire safety standards related to defensible space, apply to the perimeters and access to all commercial, industrial, and residential building construction with a SRA (approved after January 1, 1991), and within lands classified and designated as very high FHSZ (after July 1, 2021). The person(s) who control, lease, maintain, operate, or own said building in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable materials is required to preserve a defensible space of 100 feet from the perimeter of the building. The regulations shall include the following:

1. Road standards for fire equipment access.
2. Standards for signs identifying streets, roads, and buildings.
3. Minimum private water supply reserves for emergency fire use.
4. Fuel breaks and greenbelts.

These regulations do not supersede local regulations which equal or exceed minimum regulations adopted by the state.

2016 California Code of Regulations, Title 14 State Responsibility Area Fire Safe Regulations

These regulations establish minimum wildfire protection standards in conjunction with building, construction and development in a SRA. The future design and construction of structures, subdivisions and developments in a SRA shall provide for basic emergency access and perimeter wildfire protection measures. These measures shall provide for emergency access; signing and building numbering; private water supply reserves for emergency fire use; and vegetation modification.

With regard to emergency access and egress, 14 California Code of Regulation (CCR) §1273.09 – Dead-End Roads states that maximum length of a dead-end road, including all dead-end roads accessed from that dead-end road, shall not exceed 800 feet for parcels zoned for less than one acre. The length shall be measured from the edge of the roadway surface at the intersection that begins the road to the end of the road surface at its farthest point. Each dead-end road shall have a turnaround constructed at its terminus.

California Government Code 66474.02

This statute requires that before a county can approve a tentative map, or a parcel map for which a tentative map was not required, for an area (development) located in a SRA or a Very High FHSZ, the following findings must be made:

1. A finding supported by substantial evidence in the record that the subdivision is consistent with regulations adopted by the State Board of Forestry and Fire Protection pursuant to Sections 4290 and 4291 of the Public Resources Code (PRC) or consistent with local ordinances certified by the State Board of Forestry and Fire Protection as meeting or exceeding the state regulations.
2. A finding supported by substantial evidence in the record that structural fire protection and suppression services will be available for the subdivision through any of the following entities:
    A. A county, city, special district, political subdivision of the state, or another entity organized solely to provide fire protection services that is monitored and funded by a county or other public entity.
    B. The Department of Forestry and Fire Protection by contract entered into pursuant to Section 4133, 4142, or 4144 of the PRC.

Upon approving a tentative map, or a parcel map for which a tentative map was not required, for an area (development) located in a SRA or VHFHSZ, the county shall transmit a copy of the findings and accompanying maps to the State Board of Forestry and Fire Protection.

2016 California Building Code, Chapter 7A

Chapter 7A of the California Building Code (CBC) focuses primarily on preventing ember penetration into homes, a leading cause of structure loss from wildfires. Thus, it is an important component of the requirements of the FPTR given the Project's WUI location which is predominately within an area statutorily designated a VHFHSZ with a small portion of the northeast corner of the property designated as a MFHSZ.[15]

[15] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 3. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

Fire hazard designations are based on topography, vegetation, and weather, amongst other factors with more hazardous sites including steep terrain, unmaintained fuels/vegetation, and WUI locations. Projects situated in VHFHSZ's require fire hazard analysis and application of fire protection measures that have been developed to specifically result in defensible communities in these WUI locations. As described in the FPTR (EIR Appendix 9.11.1), the Project will meet all applicable code requirements for building in higher fire hazard areas through the application of site-specific fire protection measures.

These codes have been developed through decades of after fire structure "save" and "loss" evaluations to determine what causes buildings to ignite or avoid ignition during wildfires. The resulting fire codes now focus on mitigating former structural vulnerabilities through construction techniques and materials so that the buildings are resistant to ignitions from direct flames, heat, and embers, as indicated in the 2016 CBC (Chapter 7A, Section 701A Scope, Purpose and Application).[16]

2016 California Fire Code

CCR Title 24, Part 9 (2016 California Fire Code) contains regulations relating to construction and maintenance of buildings, the use of premises, and the management of WUI areas, among other issues. The California Fire Code is updated every three years by the California Building Standards Commission and was last updated in 2016 (adopted January 1, 2017). The California Fire Code sets forth regulations regarding building standards, fire protection and notification systems, fire protection devices such as fire extinguishers and smoke alarms, high-rise building standards, and fire suppression training. It contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code also include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. Development under the Project would be subject to applicable regulations of the California Fire Code.

Chapter 48 of the California Fire Code provides minimum standards to increase the ability of a building or structure to resist the intrusion of flame or burning embers being projected by a vegetation fire and contributes to a systematic reduction in fire losses through the use of performance and prescriptive requirements. Buildings and structures located on unincorporated land designated as an SRA Moderate, High, and Very High FHSZ and land designated as VHFHSZ by a city or other local agency shall maintain the required hazardous vegetation and fuel management standards.

Title 8 California Code of Regulations Sections 1270 and 6773

In accordance with CCR, Title 8 §1270 "Fire Prevention" and §6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal-OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

[16] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 3. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

2016 California Building Standards Code

California building standards are published in the CCR, Title 24, also known as the California Building Standards Code (CBSC). The CBSC, which applies to all applications for building permits, consists of 12 parts that contain administrative regulations for the California Building Standards Commission and for all state agencies that implement or enforce building standards. Local agencies must ensure the development complies with the guidelines contained in the CBSC. Cities and counties can adopt additional building standards beyond the CBSC including the CBSC Part 2, named the California Building Code which is based upon the 2016 International Building Code, and Part 11, named the California Green Building Standards Code, also called the CalGreen Code. The City of Murrieta adopted Title 24, Parts 1-12 in 2018.

California Health and Safety Code

State fire regulations are set forth in California Health and Safety Code (HSC) §13000 et seq., and include provisions concerning building standards, fire protection and notification systems, fire protection devices, and fire suppression training, as also set forth in the 2016 CBSC and related updated codes.

Emergency Mutual Aid Agreements

The Emergency Mutual Aid Agreements (EMMA) system is a collaborative effort between city and county emergency managers in the Office of Emergency Services (OES) in the coastal, southern, and inland regions of the state. EMMA provides service in the emergency response and recovery efforts at the Southern Regional Emergency Operations Center (REOC), local Emergency Operations Centers (EOCs), the Disaster Field Office (DFO), and community service centers. The purpose of EMMA is to support disaster operations in affected jurisdictions by providing professional emergency management personnel. In accordance with the EMAA, local and state emergency managers have responded in support of each other under a variety of plans and procedures.

California Governor's Office of Emergency Services (Cal OES)

In 2009, the State of California passed legislation creating the California Emergency Management Agency (Cal-EMA) and authorizing it to prepare a Standardized Emergency Management System (SEMS) program (Title 19 CCR §2400 *et seq.*), which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

As part of former Governor Brown's Reorganization Plan #2, Cal EMA was eliminated and restored to the Governor's Office in 2013. Cal EMA was renamed California Governor's Office of Emergency Services (Cal OES), and merged with the office of Public Safety Communications.

Cal OES serves as the lead state agency for emergency management in California. Cal OES coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. Local jurisdictions first use their own resources and, as these are exhausted, obtain more from neighboring cities and special districts, the county in which they are located, and other counties throughout the state through the statewide mutual aid system. In California, the SEMS provides the mechanism by which local government requests assistance. Cal OES serves as the Lead Agency for mobilizing the state's resources and obtaining federal resources; it also maintains oversight of the state's mutual aid system.

Assembly Bill 2911

Approved by former Governor Brown in September 21, 2018, AB 2911 requires a local agency to designate, by ordinance, VHFHSZs in its jurisdiction within 120 days of receiving recommendations from the Director of Forestry and Fire Protection and requires a local agency to transmit a copy of any ordinance adopted pursuant to these provisions to the State Board of Forestry and Fire Protection within 30 days of adoption. No later than January 31, 2020, AB 2911 requires the State Fire Marshal, in consultation with the Director of Forestry and Fire Protection and the Director of Housing and Community Development, to recommend updated building standards that provide for comprehensive site and structure fire risk reduction to protect structures from fires spreading, as specified, based on lessons learned from the wildfires of 2017 and to develop a list of low-cost retrofits that provide for comprehensive site and structure fire risk reduction, as provided.

This bill would require, on or before July 1, 2021, and every 5 years thereafter, the board, in consultation with the State Fire Marshal, to survey local governments and fire districts to identify existing subdivisions, as defined, in either a state responsibility area or a very high fire hazard severity zone, without secondary egress routes, that are at significant fire risk. The bill would require the board, in consultation with the State Fire Marshal and the local governments identified above, to develop recommendations to improve the subdivision's fire safety, as provided. The bill would require the board to provide final recommendations to the identified local governments.[17]

Senate Bill 969

Signed into law on September 1, 2018, Senate Bill (SB) 969 applies to all new garage doors and garage door opener installations. The law states that when a new garage door is installed or when an existing garage door opener is replaced, the homeowner must install a battery backup garage door opener. Section §19892 of the HSC states the following: On or after July 1, 2019, no person, corporation, or entity shall manufacture for sale in this state, sell, offer for sale at retail or wholesale, or install in this state a residential automatic garage door opener that does not have a battery backup function that is designed to operate when activated because of an electrical outage. The battery backup function shall operate in a manner so that the automatic garage door opener is operational without interruption during an electrical outage.[18]

This law is relevant to this analysis because widespread power outages are often associated wildfires. Without electricity, homeowners/occupants are unable to open their garage doors via the garage door opener. While garage doors do have an emergency cord which disconnects the garage door from the garage door opener, some members of the population have difficulty engaging the emergency release and/or manually opening the garage door.

[17] California Legislative Information. (2018). *Assembly Bill No. 2911 Chapter 641.* Retrieved from California Legislative Information Website: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB2911. Accessed August 23, 2019.

[18] California Legislative Information. (2018). *Senate Bill No. 969, Chapter 621*. Retrieved from California Legislative Information Website: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB969. Accessed August 11, 2019.

REGIONAL

Riverside County Fire Department

The RCFD, in coordination with CAL FIRE, provides fire and emergency services to all unincorporated areas of Riverside County and 21 partner cities within the County. RCFD is equipped for fire prevention and detention support from both the ground through its 101 stations, but also from the air through the Ryan Air Attack Base at the Hemet Ryan Airport. Through the County Fire Marshall, RCFD also analyzes and inspects construction development both in their planning and construction phases.

County of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan[19]

The Local Hazard Mitigation Plan (LHMP) aims to lessen the effect of a disaster by recognizing hazards and developing ways to reduce their impact. Risk assessments rate hazards with the highest potential impact to the community. In addition, long-term prevention or protection steps are developed to lessen the impact of the hazard. The LHMP creates awareness of hazards, threats, and susceptibilities within the community, and paves a path forward for jurisdictions to prepare for local disasters. Plan objectives include:

- Reduce loss of life and injuries.
- Reduce hazard related property losses.
- Protect the environment.
- Coordinate disaster planning and integrate public policy.
- Improve community and agency knowledge and education of hazards.

LOCAL

Murrieta Fire & Rescue

The MFR provides fire management and emergency response services to the City of Murrieta. On top of fire suppression and prevention, and pre-hospital emergency care, MFR is also the primary provider of disaster preparedness coordination and hazard mitigation. Five strategically placed fire stations provide optimum levels of service to the entire City. The personnel in these facilities have been trained and equipped to respond effectively to a variety of situations.

City of Murrieta General Plan 2035

SAFETY ELEMENT[20]

This Element describes hazards that exist in Murrieta and the measures that the City is taking to address them. Some naturally occurring hazards may be unavoidable, but their impacts on communities can be reduced through planning and preparation. Thus, the Safety Element addresses geologic, seismic, flood,

[19] Riverside County. (2018). *County of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan*. Retrieved from Riverside County Website: https://www.rivcoemd.org/Portals/0/FINAL%20PUBLIC%20VERSION%20Riv_Co_%202018%20Multi%20Jurisdictional%20Local%20Hazard%20Mitigation%20Plan.pdf. Accessed August 11, 2019.

[20] City of Murrieta. (2011). *Murrieta General Plan 2035, Chapter 12 - Safety Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/722/12---Safety-Element-PDF. Accessed August 23, 2019.

and fire hazards. This Element also addresses hazards created by human activity: hazardous materials and waste, aircraft hazards, and incidents that call for police protection. Expecting that emergencies will occur even when precautions are taken against hazards, the Safety Element describes the City's efforts to prepare for and respond to emergencies.

Goal SAF-5: ***Damage from fire hazards is minimized through preventive measures, education, and fire protection services.***

Policy SAF-5.5: Require that all dedicated open space or undeveloped areas meet specifications for fire safety.

Goal SAF-7: ***Reduced incidence of damage to life and property from wildland fires.***

Policy SAF-7.1: Continue to require development in high fire hazard areas to use fire-resistant building materials and landscaping, and to meet fire chief specifications for fuel modifications, access, and water facilities.

Policy SAF-7.2: Evaluate all new development to be located in or adjacent to wildland areas to assess its vulnerability to fire and its potential as a source of fire.

Policy SAF-7.3: Encourage the use of development features such as roads and irrigated/landscaped open space to buffer homes from wildland fire.

Policy SAF-7.4: Promote community education about preventing wildfire ignition, using fire-resistant building features, and creating defensible space around homes.

Policy SAF-7.5: Continue to implement a weed abatement program to reduce fire hazards on private properties.

City of Murrieta Municipal Code

MURRIETA MUNICIPAL CODE §15.24

The Project is required to comply with Murrieta MC §15.24 – California Fire Code and California Fire Code Standards. The Sections applicable to this Project include, but are not limited to:

Section 15.24.130 (California Fire Code Section 503 revised) – Fire apparatus access roadways:

Section 503.1 General: Fire apparatus access roads, including private residential driveways, shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from the closest point of an approved fire department vehicle access.

Fire apparatus access roads, except private residential driveways, shall be provided and maintained for purposes of rapid and reliable fire apparatus access and for unobstructed traffic circulation for evacuation or relocation of civilians during a wildfire or other emergency.

Fire apparatus access roads shall be provided and maintained in compliance with this section and the most recent edition and any amendments thereto, of public and private road standards as adopted by the City of Murrieta. The fire code official may modify the requirements of this section if the modification provides equivalent access.

This section also addresses dead-end roads, access road dimensions, pavement markings, and security gates, among other topics.

Section 15.24.140 (California Fire Code Section 505 revised) - Premise identification:

Section 505.1 Address Numbers states: Approved numbers and/or addresses shall be placed on all new and existing buildings and at appropriate additional locations, plainly visible and legible from the street or roadway fronting the property when approaching from either direction. Single-family residential numbers shall contrast with their background and shall meet the following minimum size standards: 4" high with a 1/2" stroke. All multi-family, commercial and industrial structures shall have numbers a minimum of (12) inches high and one inch wide and placed on all sides of a structure. Additional numbers shall be required where deemed necessary by the fire code official, such as rear access doors, building corners and entrances to commercial centers. The fire code official may establish different minimum sizes for numbers for various categories of projects. Address identification shall be maintained.

Section 15.24.250 (California Fire Code Section 3318 added) - Fuel modification zone requirements:

Section 3318.1 Fuel modification/Defensible Space zone during construction: Any person doing construction of any kind which requires a permit under this code or the City Building Code shall create adequate defensible space prior to allowing any combustible material to arrive on the site and shall maintain the zone during the duration of the project.

Section 15.24.270 (California Fire Code Section 4903 revised) - Fire protection plan:

Section 4903.1 When required: Planning and Development Services or Murrieta Fire & Rescue may require an applicant for a parcel map, subdivision map, specific plan or major use permit for any property located in a wildland-urban interface fire area to submit a Fire Protection Plan (FPP) as part of the approval process.

Section 4903.2 Content: The FPP shall consider location, topography, geology, aspect, combustible vegetation (fuel types), climatic conditions and fire history. The plan shall address the following in terms of compliance with applicable codes and regulations including but not limited to: water supply, vehicular and emergency apparatus access, travel time to nearest serving fire station, structural ignitability, structure set back, ignition-resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management.

The MHSPA Project's *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853* (EIR Appendix 9.11.1) was submitted to Murrieta Fire & Rescue and found to conform to the fire protection plan requirements of Murrieta Fire & Rescue on July 9, 2019 (EIR Appendix 9.11.2).

For additional fire code standards visit: https://www.murrietaca.gov/259/Development-Code -Municipal Code to further access Chapter 15.24 California Fire Code and California Fire Code Standards.

4.16.4 SIGNIFICANCE CRITERIA AND THRESHOLDS

SIGNIFICANCE CRITERIA UNDER CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

State CEQA Guidelines Appendix G has been utilized as significance criteria in this section. Accordingly, the Project would have a significant environmental impact if one or more of the following occurs:

- (From the Public Services portion of Appendix G) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

    a. Fire protection? (see Impact 4.16-1)

If located in or near SRA or lands classified as Very High FHSZ, would the Project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan (see Impact 4.16-2)?
- Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire (see Impact 4.16-3)?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment (see Impact 4.16-4)?
- Expose people or structures, either directly or indirectly, to significant loss, injury or death involving wildfires, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes (see Impact 4.16-5)?

METHODOLOGY AND ASSUMPTIONS

The Project and associated Project Design Features (PDFs) are evaluated against the aforementioned significance criteria/thresholds, as the basis for determining the impact's level of significance concerning wildfire hazards. In addition to PDFs, this analysis considers the existing regulatory framework (i.e., laws, ordinances, regulations, and standards [LORS]) that avoid or reduce the potentially significant environmental impact. Where significant impacts remain despite compliance with the regulatory framework, feasible mitigation measures are recommended, to avoid or reduce the Project's potentially significant environmental impacts.

Approach to Analysis

This analysis of impacts from wildfire hazards examines the Project's temporary (i.e., construction) and permanent (i.e., operational) effects based on application of the significance criteria/thresholds outlined above. For each criterion, the analyses are generally divided into two main categories: (1) temporary impacts; and (2) permanent impacts. Each criterion is discussed in the context of Project components that share similar characteristics/geography. The impact conclusions consider the potential for changes in environmental conditions, as well as compliance with the regulatory framework enacted to protect the environment.

The baseline conditions and impact analyses are based on: documentation and observations contained in the FPTR (EIR Appendix 9.11.1), field observations conducted by Kimley-Horn; review of Project maps and drawings; analysis of aerial and ground-level photographs; and review of various data available in public records, including local planning documents. The determination that a Project component would or would

not result in "significant" adverse effects on wildfire hazards standards considers the available policies and regulations established by local and regional agencies and the amount of deviation from these policies in the Project's components.

PROJECT DESIGN FEATURES

- The MHSPA (Section 7.2.7) and Tentative Tract Map (TTM) include fuel modification zones to create defensible space and reduce risks associated with wildfire. The Project provides a minimum of 50 feet wide irrigated Zone 1 and 100 feet of thinned Zone 2 (see Exhibit 4.3-10, *Fuel Modification Plan*).
- Exceed the California and Murrieta FMZ standard of 100-foot wide FMZs by a minimum of 50 feet, for a total of 150 feet (typically 170 feet including rear and/or side yards) which provides an even greater defensible space, assisting firefighter protection of this community.
- The Project will extend McElwain Road southerly to Linnel Lane, providing secondary emergency access or egress during construction and operation, and also improving emergency egress for the commercial and residential areas south of Linnel Lane along McElwain Road, should they need to evacuate to the north in an emergency situation.
- Grant a fuel modification easement along the Project's southern edge, adjacent to Greer Ranch residences, recognizing the importance for structure protection and fuel modification adjacent to the Greer Ranch residences as well as the need for a buffer that minimizes the likelihood that a structure fire in Greer Ranch spreads to the adjacent Project MSHCP Open Space.
- As designed, the Project has four access points into the Project. Two of these access points would provide egress to the north onto Keller Road while the third and fourth provides egress to the south along McElwain Road. Each PA includes at least two roads in and out.
- The Project is providing additional Fuel Modification on the perimeter of the development footprint by including: 1) 150-foot-wide Homeowners Association (HOA) managed perimeter FMZs; 2) Zone 1A, 20-foot average rear yards (which are part of the FMZ and landscaping must be compliant with this FPTR), and 3) fuel modification within the linear nature park, non-MSHCP open space, and along roadsides (see Exhibit 4.3-10, *Fuel Modification Plan*).
- Each of the Project's residences will be within 800 feet of an intersection where travel in at least two separate directions is possible and travel via either of the options will be through managed landscapes that provide for safer travel than an arbitrary, or random, secondary access through unmaintained fuels/vegetation, such as through adjacent unmaintained Open Space.
- Minimum 20-foot wide FMZ along both sides of internal roadways and McElwain Road (except west exposure which is 80-feet wide) to provide a buffer that will act to reduce ignition from vehicle-related causes and provide setback for wildland fuels.
- No gates or speed bumps or bumps would be allowed in this Project. This would allow traffic flow (ingress and/or egress) to move more rapidly in the case of emergency.
- Street parking will be accommodated by wide roads and designated parking areas. Where road widths do not accommodate parking, restrictions will apply, streets will be posted with signs stating, "No Parking; Fire Lane". These efforts are designed to maintain the provided roads as

unobstructed travel lanes so that emergency response vehicles are not hindered during responses.

- The internal oak-riparian corridor (linear nature park) will provide fuel modification to reduce fuels outside jurisdictional areas to four-inches in height. Oak-riparian habitat will be minimally thinned, and tree canopy raised to prevent ladder fuels.
- Water service will be provided by the Eastern Municipal Water District (EMWD). Upgrades to the system, including up to three water tanks, are proposed within the Project site. All water storage and hydrant locations, mains and water pressures will be designed to fully comply with City's Guidelines for Fire Flow per 2016 edition of the California Fire Code, as amended by the City of Murrieta.
- The Project will include approximately 95 fire hydrants, spaced approximately every 300 feet along Project streets, resulting in significant water access for fire-related emergencies.
- A one to three-foot-wide landscape free area would be provided to prevent flame impingement under the stucco along the weep screed and help prevent ember penetration into the structure stucco walls. This goes above and beyond the State or City requirements. This component will be enforced by the HOA through the rules of the HOAs Covenants, Conditions and Restrictions (CCRs), which will require compliance with the FPTR (EIR Appendix 9.11.1).
- The Project will be subject to Chapter 7A of CBC ignition resistant building standards and will exceed those requirements in key areas:
    - All ventilation for the structures for the development would require ember-resistant vents in addition to 1/8-inch screening. This exceeds current CBC requirements.
    - Vents for all structures will be ember resistant (such as Brandguard or O'Hagin brands).
    - Dryer vents will be ember resistant.
- The Project will provide a lighted directory at each neighborhood entrance to assist with navigation through the community. In addition, street signs will be customized for this Project and will meet or exceed lettering size requirements. The goal is to provide clear, easy to follow signage to aid emergency response.
- The Project's roads will be public, ensuring that the roads are maintained and available to emergency responders for the life of the Project.
- In compliance with SB 969, automatic garage door openers installed in Project residences will have a battery backup function.

4.16.5 IMPACTS AND MITIGATION MEASURES

Impact 4.16-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?

Level of Significance: Less Than Significant Impact

CONSTRUCTION

There are no direct or indirect impacts on the environment resulting from the construction/reconstruction of emergency access roads that have not been addressed elsewhere in this EIR. Construction/reconstruction of the access roads would have the potential to result in impacts related to construction air quality, noise, biological resources, and other resource areas. These impacts are evaluated within the context of the entire Project in Sections 4.1 through 4.15 of this EIR. All construction activities would be subject to compliance with applicable emergency response and fire safety requirements of MFR, the California Fire Code, and City of Murrieta requirements. Compliance with applicable local and state design regulations would ensure that the Project construction would result in a less than significant impact to fire protection services.

Off-Site Construction Impacts

The McElwain Road extension construction would occur in the southeast area of the Project site, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road would be required to comply with the City's regulations relating to emergency access. Please refer to the discussion under Impact 4.13-4 in Section 4.13, *Transportation*.

OPERATIONS

Upon annexation of the MHSPA area to the City of Murrieta, MFR would extend its service boundaries to include Murrieta Hills. As of early 2019, MFR has five fully operational fire stations that are manned seven days per week, 24 hours per day, by a minimum of four firefighters. The City is contemplating constructing a sixth fire station (location yet to be determined) and contributions from the Project and other City projects could be allocated toward ongoing maintenance of that station. Table 4.16-2, *Murrieta Fire & Rescue Responding Stations Summary* presents a summary of the location, equipment, staffing levels, maximum travel distance, and calculated travel time for the five existing MFR stations.

Table 4.16-2: Murrieta Fire & Rescue Responding Stations Summary

Fire Station	Address	Apparatus	Staffing (Total/Station)	Maximum Travel Distance	Travel Time**
1	41825 Juniper Street, Murrieta, CA 92562	Ladder Truck, Water Tender, Technical Rescue and Lighting & Air	4	8.6 miles*	15 minutes
2	40060 California Oaks Road, Murrieta, CA 92562	Type I and III engines***	4	5.6 miles*	10 minutes
3	39985 Whitewood Road, Murrieta, CA 92563	Type I and III engines***	4	8.2 miles*	15 minutes
4	28155 Baxter Road, Murrieta, CA 92563	Type I and III engines***	4	1.4 miles*	3 minutes
5	38391 Vineyard Parkway, Murrieta, CA 92562	Type I and III engines***	4	9.5 miles*	17 minutes

Source: Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Table 6. Page 33. Encinitas, CA: Dudek. EIR Appendix 9.11.1.
* Distance measured to Project entrance located on the intersection of Keller Road and Zeiders Road at the northeastern edge of property.
** Assumes speeds calculated with the Insurance Services Office (ISO) drive time formula, where Time = 0.65+1.7 (Distance).
*** Engines are cross-staffed by the station engine company.

The MHSPA area would primarily be serviced by Station No. 4, which is approximately one traveling mile southeast of Murrieta Hills and within the five-minute response travel time radius limit via Keller Road. Each development project within the MHSPA area would be designed to comply with CBSC, Chapters 7 and 7A, and the California Fire Code (CCR, Title 24, Part 9). In addition, MFR provides fire protection engineering, building inspections for code compliance, and hazardous materials inspections.

According to Dudek's call volume analysis[21] (utilizing the more conservative between Murrieta's actual [87 calls per 1,000 persons per year] and a national per capita call generation factor of 82 calls per 1,000 persons), the Project is anticipated to add approximately 209 calls per year to MFR's existing call load. This call load increase will not require additional resources given that Station No. 4 currently responds to roughly 4.1 calls per day. Additionally, the nearby location of Station No. 4 negates the need for additional facilities in terms of meeting the City's response time goals.

The City of Murrieta bases its response time goals on the National Fire Protection Association (NFPA) 1710[22], and the ISO. The Murrieta GP also indicates a response time of 5.5 minutes travel time plus one minute for turnout. MFR conducted its own analysis and created target response times for various call types:

- Structure fire call responses within 10 minutes for 90 percent of the calls.
- Emergency medical call responses within 8.5 minutes for 90 percent of the calls.

[21] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Pages 34-36. Encinitas, CA: Dudek. EIR Appendix 9.11.1
[22] NFPA 1710 is the Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.

Response travel time to the Project site's furthest destination within the backbone streets from Fire Station No. 4 would be approximately four minutes when the engine is at the station. The overall response time in Fire Station No. 4's primary response area is nine minutes 54 seconds at 90th percentile. Therefore, with existing and potential future fire stations and meeting target response times, impacts would be less than significant.

Off-Site Operations Impacts

The proposed McElwain Road extension will provide valuable emergency secondary access/egress to/from the Project site, from the south, as well as provide additional emergency access for existing and future land uses located along future McElwain Road north of Linnel Lane. In addition, while not analyzed as part of the FPTR, the estimated emergency response travel time to the Project site from Station No. 4 via the planned extension of McElwain Road is 5 ¾ minutes (measured distance between Fire Station No. 4 and the intersection of McElwain Road and Street "D" is approximately three miles; ISO drive time formula used). This estimated response time meets the nine-minute 54 second 90th percentile goal for Fire Station No. 4.

MITIGATION MEASURES

No mitigation is required.

Impact 4.16-2: If located in or near SRA or lands classified as Very High FHSZ, would the Project:

1. **Substantially impair an adopted emergency response plan or emergency evacuation plan?**

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION

The Project is currently located within an SRA within CAL FIRE/RCFD's authority. However, once annexation into the City of Murrieta is finalized, structural fire protection and medical emergency response will be provided by MFR while CAL FIRE will continue to provide wildland fire protection. The Project's WUI location is predominately within an area statutorily designated as a VHFHSZ.[23]

Section 6 of the FPTR (EIR Appendix 9.11) includes a Wildland Fire Evacuation Plan prepared specifically for the Project and focuses on wildland fire evacuations, although many of the concepts and protocols will be applicable to other emergency situations. Ultimately, the Wildland Fire Evacuation Plan will be used by the Project's HOA to educate community residents as to their evacuation approach during wildfires and other similar emergencies, and links to important citizen preparedness information. Preparation of the Wildland Fire Evacuation Plan was based on standard operational evacuation planning procedures. Large-scale evacuations are complex, multi-jurisdictional efforts that require coordination between many agencies and organizations. Emergency services and other public safety organizations play key roles in ensuring that an evacuation is effective, efficient, and safe. At the time of the Wildland Fire Evacuation Plan's preparation, there was no encompassing emergency evacuation plan available for the greater region. The Murrieta Hills Wildland Fire Evacuation Plan is consistent with standard evacuation

[23] CAL FIRE. (2019). *Cal Fire FRAP FHSZ Viewer*. Retrieved from CAL FIRE FRAP Website: https://egis.fire.ca.gov/FHSZ/. Accessed August 26, 2019.

planning and can be integrated into a regional evacuation plan when and if the area officials and stakeholders (MFR, CAL FIRE, RCFD, OES, Riverside County Sheriff's Department, and others) complete one.

Evacuation during a wildfire is not necessarily directed by the fire agency, except in specific areas where fire personnel may require evacuations on-scene. The Murrieta Police Department, Riverside County Sheriff's Department, California Highway Patrol, and other cooperating law enforcement agencies have primary responsibility for evacuations. These agencies work closely within the Unified Incident Command System, the County OES, and responding fire department personnel who assess fire behavior and spread, which should ultimately guide evacuation decisions.

Wildfire and other emergencies are often fluid events and that the need for evacuations are typically determined by: 1) on-scene first responders; and 2) a collaboration between first responders, law enforcement, and designated emergency response teams, including OES and the Incident Command established for larger emergency events. As such, and consistent with all emergency evacuation plans, this Wildland Fire Evacuation Plan is to be considered a tool that supports existing pre-plans, as available for the area, and provides for citizens who are familiar with the evacuation protocol but is secondary to emergency event-specific directives provided by agencies managing the incident.

Because no encompassing emergency evacuation plan for the greater region was identified and the Murrieta Hills Wildland Fire Evacuation Plan is consistent with standard evacuation planning and can be integrated into a regional evacuation plan, impacts would be less than significant.

Off-Site Construction Impacts

The McElwain Road extension construction would occur in the southeast area of the Project site, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road are included in the Wildland Fire Evacuation Plan area.

OPERATIONS

Evacuation Routes

As discussed in Section 6 of the FPTR (EIR Appendix 9.11.1), evacuation is a procedure by which people are moved from a place where there is immediate or anticipated danger, to a safer place, and offered temporary shelter facilities. When the threat passes, evacuees can return to their normal activities, or make suitable alternative arrangements.

Exhibit 4.16-2, *Fire Evacuation Plan* illustrates the Emergency Evacuation Routes available to the Murrieta Hills community. The exhibit highlights the community's backbone interior roads along with primary access points and off-site roads and major traffic corridors leading to designated evacuation areas.

The available evacuation routes for the residents and guests of Murrieta Hills are:

1. Egress to the east via Keller Road – this is the primary access road and provides access to I-215 and to Gloria Road, Howard Way, Zeiders Road north, and when constructed, to McElwain Road south.

2. Egress to the north and east via Gloria Road, Ciccotti Street, Howard Way, and Scott Road – This is a gravel road route that is passable via passenger vehicle, but would require slower speeds. The road extends approximately 1.1 miles from Keller Road where it intersects Scott Road. Scott Road provides options for travel to the west or east on paved roads.

3. Egress to the north via Zeiders Road – this road includes section of gravel and paved roadway. The first 0.25 miles north of Keller Road is paved. The middle 0.5 miles is a gravel roadway that is drivable via passenger vehicle, but is rough and rutted and would not be ideal for evacuation. The northernmost 0.25 mile of this road, just south of Scott Road, is paved. Once on Scott Road, travel east or west on paved roads is available.

4. Egress to the south on McElwain Road – this egress route intersects Keller Road approximately 0.25 miles west of the I-215. This egress route will be improved, paved and offer three travel lanes for a portion of the route. It will interconnect with existing McElwain Road at Linnel Street. The road continues south to Clinton Keith Road where travel east and west is possible and access to I-215 is nearby.

Evacuation Analysis

Roadway capacity represents the maximum number of vehicles that a roadway can reasonably accommodate. It is typically measured in vehicles per hour and fluctuates based on the number of available lanes, number of traffic signals, construction activity, accidents, and obstructions as well as positive effects from traffic control measures.

Each roadway classification has a different capacity based on level of service (LOS), with freeways and highways having the highest capacities. Based on traffic estimates from similar roadways, and using peak numbers and a conservative estimate, roads that would be the most likely available to Murrieta Hills residents and their estimated hourly capacities are:

1. Gloria Road – 500 vehicles/hour
2. Keller Road – 2,600 vehicles/hour
3. McElwain Road - 2,600 vehicles/hour
4. Zeiders Road – 500 vehicles/hour

Using these estimates, the length of time it will take for an area to evacuate can be determined by dividing the number of vehicles that need to evacuate by the total roadway capacity. Assuming 2.7 cars per household (U.S. Census Bureau 2016) and Murrieta Hills' estimated 557 single-family homes, and 193 multi-family residences totaling to 750 units, up to 2,025 vehicles could be leaving the residential areas during an evacuation.[24] During daytime hours, commercial and mixed-use areas will add traffic to an evacuation. It is estimated that 200 additional vehicles may be on-site at any one time. Therefore, worst-case in a major incident that requires full evacuation of the community, up to 2,225 vehicles may be evacuating. However, the actual number would likely be far lower because many occupants would likely evacuate in one vehicle versus in multiple vehicles, and may evacuate over more than one day.

[24] Note: The FPTR emergency call generation analysis is based on the construction of 697 households. The analysis presented in this EIR is updated to address the 750 households proposed as part of the MHSPA.

Depending on the time of day, many of these vehicles may already be off-site, should a fire occur during typical business hours.

Based on the internal roadway capacities of at least 2,600 vehicles per hour, four potential egress routes, off-site roadway capacities, incorporating the lowest capacity roadway in a worst-case condition, and discounting the capacity for the possibility that traffic would move slower during some evacuations, it is estimated that one to two hours may be necessary for a complete evacuation of Murrieta Hills. The maximum timeframe is a conservative estimate that may be reduced with law enforcement managing traffic flow and maximizing efficiency by routing neighborhoods out via the four available egress routes. Up to two hours for complete evacuation is not considered unusual and would be accommodated during large, wind-driven wildfires from the east. Wildfires originating closer to the Murrieta Hills would allow less time for evacuation, and Murrieta Hills offers decision-makers with contingency options, including evacuating or relocating a portion of the community (much lower number of vehicles and faster evacuation time, proportional to the vehicle total being moved).

Wildfire Behavior

Under existing pre-construction conditions, wildfire behavior in non-treated heavy chaparral varies based on the timing of fire. A worst-case summer fire would result in a fire spreading at a rate of up to three miles per hour (mph). During a fall fire with gusty Santa Ana winds and low fuel moisture, fire is expected to be fast-moving between six and 15 mph with highest flame length values reaching approximately 43 feet in specific portions of the existing Project site. Spotting distances, where airborne embers can ignite new fires downwind of the initial fire, is projected to occur up to 1.5 miles during a summer fire and nearly 2.3 miles during a fall fire.[25]

For post-development conditions, modeling of the Project site was conducted for post-fuel modification zone (FMZ) fuel reduction recommendations. Fuel modification includes establishment of irrigated and thinned zones on the periphery of the Project's neighborhoods and roads as well as interior landscape requirements. Results indicate that the fire intensity and flame lengths in untreated, open space areas would remain the same. Conversely, the FMZ areas will experience a reduction in flame length and intensity. The approximately 43-foot tall flames predicted during pre-treatment modeling during extreme weather conditions are reduced to approximately 10 feet tall at the outer edges of the FMZ and to three feet tall by the time the inner portions of the FMZ are reached. During summer weather conditions, a fire approaching from the west would be reduced from 27-foot tall flames to less than two feet tall with low fire intensity due to the higher live and dead fuel moisture contents.[26] For detailed information regarding fire behavior modeling see the Section 3 of the FPTR in EIR Appendix 9.11.1.

Emergency Response

MFR documented an average of 4,228 emergency calls from January 2019 through May 2019 and is projected to reach over 10,000 calls that grows annually as the City population of approximately 115,000 increases by the end of 2019.[27] The call volume of 87 per 1,000 persons per year is consistent with the

[25] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Pages 28-29. Encinitas, CA: Dudek. EIR Appendix 9.11.1.
[26] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Page 29. Encinitas, CA: Dudek. EIR Appendix 9.11.1.
[27] City population total number is from California Department of Finance Demographic Research Unit 2015.

national average of approximately 82 calls. For this analysis, the higher (most conservative) per capita call volume of roughly 0.87 was used. Based on the proposed development plans, the Project's estimated 2,400 residents (assumes an average of 3.2 occupants per residence for this type of community and 750 households) would generate roughly 209 calls per year (0.6 calls per day).[28]

Service level requirements are not expected to be greatly impacted with the increase of approximately 209 calls per year (0.6 calls per day) for a station (MFR Station No. 4) that currently responds to roughly 4.1 calls per day (1,510 calls per year, 125 calls per month, 29 calls per week). The next closest MFR fire station is Station No. 2. This station responded to 2,805 calls in 2015, or approximately 7.6 calls per day. For reference, a station that responds to five calls per day in an urban setting is considered average and 10 calls per day is considered busy. Therefore, the addition of less than one call per day to Station No. 4's current call volume is not expected to cause a decline in Station No. 4's LOS. The requirements described in the FPTR are intended to aid firefighting personnel and minimize the demand placed on the existing emergency service system.

As stated previously, the City of Murrieta bases its response time goals on the NFPA 1710 and the ISO. MFR conducted its own analysis and created target response times for various call types:

- Structure fire call responses within 10 minutes for 90 percent of the calls.
- Emergency medical call responses within 8.5 minutes for 90 percent of the calls.

Response travel time to the Project site's furthest destination within the backbone streets from Fire Station No. 4 would be approximately four minutes when the engine is at the station. The overall response time in Fire Station No. 4's primary response area is nine minutes 54 seconds at 90th percentile. Therefore, the Project achieves the City's target response time goal.

Resident Awareness and Education Program

The Murrieta Hills HOA will be active in its outreach to residents regarding fire safety and general evacuation procedures. There are aspects of fire safety and evacuation that require an increased level of awareness by the residents and emergency services to reduce and/or avoid problems with an evacuation. Mitigating potential impediments to a successful evacuation requires focused and repeated information sharing through a strong educational outreach program. The Murrieta Hills HOA will engage residents and local fire agencies through a variety of methods.

A copy of the entire FPTR, or a summary of its key sections, including Section 6 which outlines the Wildland Fire Evacuation Plan, will be provided to each homeowner/HOA member, multi-family residential property managers, commercial property managers, as well as being accessible on the HOA website. Annual reminder notices will be provided to each homeowner encouraging them to review the Plan and be familiar with community evacuation protocols. The HOA will work with local fire agencies to hold an annual fire safety and evacuation preparedness informational meeting. The meeting will be attended by representatives of the fire agencies and important fire and evacuation information reviewed. One focus of these meetings and of the HOA's annual message will be on the importance of each resident to prepare and be familiar with their own "Ready, Set, Go!" evacuation plan. The "Ready, Set, Go!" program is defined

[28] Note: The FPTR emergency call generation analysis is based on the construction of 697 households. The analysis presented in this EIR is updated to address the 750 households proposed as part of the MHSPA.

at http://wildlandfirersg.org/ and information about preparing an Individual Action Plan is provided in Appendix G of the FPTR (EIR Appendix 9.11.1).[29]

As demonstrated during large and localized evacuations occurring throughout southern California over the last 15 years, an important component to successful evacuation is early assessment of the situation and early notification via managed evacuation announcements. Riverside County and cities within the county, including Murrieta, utilize the Riverside County Early Warning Notification System to help meet these important factors. Among the methods available to citizens for emergency information are radio, television, social media/internet, neighborhood patrol car public address (PA) notifications, and Reverse 911.[30]

As part of the Murrieta Hills resident fire awareness and evacuation readiness program, information will be delivered in a variety of methods. The HOA will be responsible with providing and distributing to each resident a complete copy of the Project's FPTR, or a summary of its key sections, which includes the Wildland Fire Evacuation Plan (Section 6 of FPTR) and materials from the READY! SET! GO! Program (Appendix G of FPTR). The HOA will also be responsible for ensuring the distribution of copies of the aforementioned materials to those individuals that purchase properties for re-sales and to the management of multi-family residential and commercial properties. The management of multi-family residential units that do not have individual unit ownership will be responsible for conducting informational sessions regarding the Fire Safety measures and Evacuation Plan details and will be responsible for making copies of the Evacuation Plans available for each unit. As with the multi-family residential properties, management of the commercial properties will be responsible for the dissemination of the Evacuation Plan information to their employees.

As part of the approval of this Project, it shall be binding on the HOA to actively participate as a partner with MFR, the RCFD, and law enforcement and to assist with the coordination and distribution of fire safety information they develop.[31]

Based on the above discussion, it is not anticipated that the Project will impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts in this regard will be less than significant with mitigation incorporated.

Off-Site Operations Impacts

The McElwain Road extension construction would occur in the southeast area of the Project site, within proximity to the Greer Ranch residential community. The road extension and the utility improvements along Keller Road and Zeiders Road are included in the Evacuation Plan area of the FPTR. In addition, as previously stated, the emergency response travel time to the Project site from Station No. 4 via McElwain Road was not analyzed as part of the FPTR, but is estimated to be 5 ¾ minutes (measured distance between Fire Station No. 4 and the intersection of McElwain Road and Street "D" is approximately three

[29] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Pages 70-71. Encinitas, CA: Dudek. EIR Appendix 9.11.1.
[30] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Page 65. Encinitas, CA: Dudek. EIR Appendix 9.11.1.
[31] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Page 72. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

miles; ISO drive time formula used). This estimated response time meets the 9 minute 54 second 90th percentile goal for Fire Station No. 4.

MITIGATION MEASURES

MM WH-1: Fire Safety Outreach.

The Murrieta Hills HOA will have the responsibility to provide and distribute to each residence, as well as the management of multi-family residential and commercial properties, a complete copy of the Project's FPTR, which includes the Wildland Fire Evacuation Plan and materials from the READY! SET! GO! Program.

The HOA will also be responsible for ensuring the distribution of copies of the FPTR to those individuals that purchase properties for re-sales. It will be the responsibility the management of multi-family residences without individual unit ownership to distribute this fire safety information to each of their units along with conducting informational sessions for their residents. It is also the responsibility of the management of commercial properties to distribute this fire safety information to tenants and their employees.

The Murrieta Hills HOA will partner with MFR, RCFD, and law enforcement to assist with the coordination and distribution of fire safety information as it is developed. Specifically, the Murrieta Hills HOA will work with local fire agencies to organize and conduct annual fire safety and evacuation preparedness informational meetings. Each meeting should be attended by fire agency representatives. An annual reminder for this meeting will be distributed residents and businesses by the Murrieta Hills HOA.

The Project's FPTR, inclusive of the Wildland Fire Evacuation Plan and READY SET GO Program materials, will be reviewed at the annual meeting of the Murrieta Hills HOA and be made readily available on the Murrieta Hills HOA website.

Overall, the Murrieta Hills HOA will include an outreach and educational role to coordinate with MFR, oversee landscape committee enforcement of fire safe landscaping, ensure fire safety measures detailed in this FPTR have been implemented, and educate residents on and prepare facility-wide "Ready, Set, Go!" plans.

MM WH-2: **Murrieta Hills Evacuation Plan.** An Evacuation Plan and Working Guide strongly implemented by the Murrieta Hills HOA based on the "Ready, Set, Go!" model has been developed and includes the following subjects:

a. Preparing your home – landscaping and home.

b. Preparing your communications – 911, contact information, telephone usage, email, radio stations, and useful links using the internet.

c. Registering home and cell phones with Reverse 911.

d. Preparing yourself and family – emergency routes out.

e. Preparing for imminent evacuation.

f. Preparing your pets and animals.

g. Maps showing exit routes.

h. Main evacuation routes and public safe zones.

The HOA will also work with local fire agencies and hold annual fire safety and evacuation preparedness informational meetings that will help residents familiarize themselves with their own "Ready, Set, Go!" evacuation plan.

MM WH-3: **Parking Management Plan.** A contract between the HOA and a towing company will be in place so that any vehicle that is illegally parked will be towed within 72-hours of discovery. This effort is designed to maintain the provided roads as unobstructed travel lanes so that emergency response vehicles are not hindered during responses.

Impact 4.16-3: If located in or near SRA or lands classified as Very High FHSZ, would the Project:

2. Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

The Project is currently located within an SRA within CAL FIRE/RCFD's jurisdiction. However, once annexation into the City of Murrieta is finalized, structural fire protection and medical emergency response will be provided by MFR while CAL FIRE will continue to provide wildland fire protection. The Project's WUI location is predominately within an area statutorily designated as a VHFHSZ. A small portion of the northeast corner of the property is designated as a MFHSZ.

As discussed in Section 2 of the FPTR, topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread upslope and terrain that forms a funneling effect on the landscape can result in especially intense fire behavior. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and/or wind.

The Project's surrounding topography is varied with prominent knolls and large rock outcroppings throughout the Paloma and Menifee Valleys to the north-northeast and steeper hillsides to the west and south of the Project site. The MHSPA property is characterized by three primary drainages and their associated sub-drainages. The first enters the property midway along its southern boundary and drains to the northeast, exiting the property in its northeast corner and into Paloma and Menifee Valleys located to the north-northeast of the Project site. The second enters the property at the eastern end of its southern boundary and also drains to the northeast, exiting the property in its northeast corner. The third enters the property in the western portion of its northern boundary and drains to the southwest, exiting the property in its southwest corner.

On-site elevations range from approximately 1,570 feet above MSL in the northeast corner of the property to approximately 2,270 feet above MSL within the western portion of the site. Slopes range from flat in the northeast corner of the property to moderate and steep along the hillsides and ridges that separate the site's drainages. Large rock outcroppings commonly occur throughout the property's slopes. As previously stated, slope is important relative to wildfire, because steeper slopes (50 percent grade or

more[32]) typically facilitate more rapid-fire spread upslope. In the case of the Project site, the steeper slopes are primarily within the areas designated as permanent open space preserve and will not be developed. The site's steeper slopes ascend away from the developed areas of the Project (versus situations where development occurs at the top of a slope). The slopes and drainages are generally in alignment with the Santa Ana wind events, which can influence fire spread by creating wind-driven fires, especially when moving upslope.

In southwestern Riverside County and the Project area, the prevailing wind is an on-shore flow from the Pacific Ocean. Prevailing winds arriving in Temecula, Murrieta, Wildomar, and Menifee from the Pacific Ocean typically cannot make it to these locations because the Santa Ana Mountains pose a significant barrier. Instead, marine air travels into these areas through a low spot in the Santa Ana Mountains near Rainbow Pass or through other coastal canyons. Likewise, Pacific Ocean air traverses coastal areas in Los Angeles and Orange Counties, then moves east and southeast along Santa Ana Canyon, where State Route 91 is presently located. As a result, the northwest winds converge with the southwest winds in a line near Lake Elsinore that extends east across Sun City and Perris and onto the San Jacinto Valley. This meeting of winds is called the Elsinore Convergence Zone (WeatherCurrent.com and NOAA, as cited in Huff, 2019). Daytime winds average approximately six to eight mph as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert (Murrieta Highlands Specific Plan, as cited in Huff, 2019).

The Santa Ana winds do impact the Project site, and hot, dry (Santa Ana) winds, which typically occur in the fall and are usually from the northeast, can gust 50 mph or higher. The Santa Ana winds are due to the pressure gradient between high pressure in the plateaus of the Great Basin and lower pressure gradient over the Pacific Ocean. Drying vegetation during the summer months becomes fuel available to advancing flames should an ignition occur. Extreme conditions, used in fire modeling for the Project site, include 92-degree Fahrenheit (°F) temperatures (average high temperature) in summer and maximum sustained winds of up to 46 mph during the fall (See *FPTR Section 3.1.2.2. Fire Modeling Inputs-Weather* in EIR Appendix 9.11.1).

As presented in Table 2 of the FPTR (see EIR Appendix 9.11.1) and shown on Exhibit 4.16-3, *Vegetation and Land Cover Types Map*, the majority of the vegetation on the Project site is chaparral (72.1%). Other vegetation types include agriculture (9.9%), coastal sage scrub (6.8%), coastal sage scrub/chaparral (3.3%), disturbed habitat (5.7%), and coast live oak woodland (1.3%). The remaining vegetation cover types individually amount to one percent or less of the total Project site. The property is largely covered by chaparral that is dominated by chamise (*Adenostoma fasciculatum*) with patches dominated by hoary-leaved ceanothus (*Ceanothus crassifolius*) and black sage (*Salvia mellifera*). The chamise and mixed chaparrals dominate the property, with a small patch of red shank (*Adenostoma sparsifolium*) chaparral occurring near the center of the property. Other plants found in the chaparral habitat type include laurel sumac (*Malosma laurina*), blue elderberry (*Sambucus nigra mexicana*), California buckwheat (*Eriogonum fasciculatum*), and scrub oak (*Quercus berberidifolia*). The native shrub species that compose the chaparral communities on-site are considered to be less likely to ignite, but would exhibit higher potential

[32] Note: The Murrieta MC Section 16.24.060 describes a natural slope category of 50 percent and over as an excessive slope condition and development is prohibited.

hazard (higher intensity heat and flame length) than grass dominated plant communities (fast moving, but lower intensity) if ignition occurred.

The FMZ on this site will consist of irrigated and maintained landscapes as well as thinned native fuel zones that will be subject to regular and ongoing maintenance and monitoring and will not be allowed to accumulate excessive biomass over time. The maintenance results in reduced fire ignition, spread rates, and intensity. Conditions adjacent to the Project's footprint (outside the FMZ), where the wildfire threat will exist post-development, are currently classified as moderate to very high fuel loads due to the higher percentage of chamise chaparral and coastal sage scrub fuels.[33]

When modeling anticipated fire behavior, the above characteristics were considered. As was discussed previously, the results indicated no change for the untreated open space areas with regard to fire intensity and flame lengths. The FMZ treated areas on the Project site experienced significant reduction in flame length and intensity.

In summary, wildfires may occur in wildland areas that surround the Project site, but would not be meaningfully increased in frequency, duration, or size with the construction of the Project. As previously discussed, the Project site's steeper slopes ascend away from the areas planned for development and the slopes and drainages are generally in alignment with the Santa Ana winds, which blow in from the east-northeast. The Project would also include conversion of fuels to maintained development with designated MFR review of all landscaping and fuel modification areas and highly ignition resistant structures. As such, the developed portions of the Project site will be largely converted from readily ignitable fuels to ignition resistant landscapes and structures.

Should a wildfire occur within the Project site, it is anticipated that based on topographic patterns, climatic (wind) conditions, and vegetation density (or lack thereof), a wildfire would generally move away from the developed areas. If a wildfire occurred to the north or east of the Project site, Keller Road and I-215 would serve as (temporary) firebreaks, depending on the intensity and speed of the wildfire and climatic (wind) conditions. Within the Project area, the McElwain Road extension will include a Setback Zone (or FMZ Zone 1A) along its western side as it borders the open space zone. This FMZ will be maintained as a 50 percent thinning zone, including the consistent removal of dying vegetation and unwanted species. Roadside FMZs will also be incorporated along this portion of the road extension.

Should a wildfire jump the gaps or roadways, the combination of a minimum 150-foot FMZ (typically 170 feet) around the perimeter of the Project site development area providing a setback and defensible space for firefighters and use of ignition resistant materials for structures in the Project is anticipated to provide suitable protection for the Project from a possible wildfire(s). Wildfires to the west and south are anticipated to move away from the Project site for the previously discussed reasons.

Wildfire ash and smoke not only makes it harder to breathe and see but also contains harmful compounds and pollutants such as carbon monoxide, nitrogen dioxide, formaldehyde, and acetaldehyde. Ingestion or inhalation of these compounds can lead to various health issues including eye and nose irritation and respiratory inflammation and infection. Although short term exposure to these conditions leads to a lower chance of experiencing adverse symptoms, long term exposure has a higher chance of generating these

[33] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853*. Pages 21-22. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

symptoms. Particulate matter (PM) associated with wildfires is normally 2.5 microns ($PM_{2.5}$) or 5 to 10 microns (PM_{10}) in diameter. $PM_{2.5}$ particles are normally small and light enough to deposit deep into the lungs and PM_{10} particles can deposit in the upper respiratory system. It is estimated that $PM_{2.5}$ particles increase from the average 20 micrograms per cubic meter to 75 micrograms per cubic meter under light smoke conditions, and 90 micrograms per cubic meter under heavy smoke conditions. For PM_{10} particles the average 40 micrograms per cubic meter increases to 125 micrograms per cubic meter in light smoke conditions and 190 micrograms per cubic meter in heavy smoke conditions. Indoor particle concentration increases are estimated to range between 49 percent and 76 percent depending on particle sizes. The lower percentages and upper percentages in the range apply to PM_{10} and $PM_{2.5}$ particles, respectively. It should be noted that it is not yet proven that adverse health effects are linearly proportional to increased particle exposure or exposure duration.[34]

Overall, based on the foregoing it is not anticipated that the Project would exacerbate wildfire risks, and thereby expose Project occupants to adverse pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts in this regard will be less than significant.

Off-Site Construction and Operations Impacts

The McElwain Road extension construction would occur in the southeast area of the Project site. The road extension and the utility improvements along Keller Road and Zeiders Road would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The portions of the McElwain Road extension that expand beyond the Project boundary will include a minimum 20-foot wide roadside FMZ; however, this component is not considered a part of the Project.[35]

MITIGATION MEASURES

No mitigation is required.

Impact 4.16-4: If located in or near SRA or lands classified as Very High FHSZ, would the Project:

3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Level of Significance: Less Than Significant Impact with Mitigation Incorporated

CONSTRUCTION AND OPERATIONS

The Project design includes the creation of a public neighborhood park, an HOA community center, multiple pocket parks, up to three water supply tanks, water quality basins, on-site public streets, FMZs, and off-site road improvements including the McElwain Road extension, the impacts of which are addressed throughout this EIR. All water storage and hydrant locations, mains and water pressures will be designed to fully comply with City's Guidelines for Fire Flow per the 2016 edition of the California Fire

[34] Indoor Air Quality Scientific Findings Resource Bank. (2019). *Wildfire*. Retrieved from Berkley Lab Website: https://iaqscience.lbl.gov/cc-wildfires. Accessed August 26, 2019.

[35] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report, Plan No. SP 012-3164, TTM 35853. Appendix D. Murrieta Hills Fuel Modification Plan.* Encinitas, CA: Dudek. EIR Appendix 9.11.1.

Code as amended by the City. The project will include approximately 95 fire hydrants, spaced approximately every 300 feet along Project streets, resulting in significant water access for fire-related emergencies. Fire apparatus access roads will be provided throughout the community and will vary in width and configuration, but will all provide at least the minimum required unobstructed travel lanes, lengths, turnouts, turnarounds, and clearances. Vegetation management requirements shall be implemented at the start of and throughout the construction phase. Adequate fuel breaks of at least 30 feet shall be created around all grading, site work, and other construction activities in areas where there is flammable vegetation. All new power lines shall be placed underground for fire safety. Temporary construction power lines may be allowed in areas that have been cleared of flammable vegetation.[36]

Site access, including road widths and connectivity, will comply with the requirements of the Murrieta Fire Code (California Fire Code, Title 24, Part 9, Appendix D – Fire Apparatus Access Roads), with the possible exception of dead-end road length. CCR, Title 14 – Natural Resources includes limitations on dead-end road length. For this Project, the maximum dead-end road length is 800 feet. This potential issue is based on an interpretation of what constitutes secondary access. The Project does provide secondary access and looped roads that do not dead end, apart from a few relatively short cul-de-sacs. The City has identified Planning Areas (PAs) 3 and 7 in Phase 2 as potentially exceeding the allowable dead-end road length defined in CCR Title 14, resulting in a potential need for additional access or alternatives that provide the same practical effect. PAs 3 and 7 will include several focused measures to compensate for the potential exceedance of allowable dead-end road length. These measures include a minimum of two ways in and out of each neighborhood along with site features that exceed standard fire safety requirements, including no gates or speed bumps and exceeding FMZ standards.[37]

From a practical standpoint, the dead-end road lengths in Title 14 are provided to help ensure that firefighters can safely ingress while citizens are safely egressing (Board of Forestry and Fire Protection 2014). Title 14 lists its road requirements intent as (§1273.00. Intent):

> Road and street networks, whether public or private, unless exempted under §1270.02(e), shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency consistent with §1273.00 through 1273.11.

As discussed in the FPTR, dead-end road lengths were "selected to consider safe emergency ingress and egress during a wildfire. Dead-end roads require that civilians and firefighters exit the road at the same point they entered the road. Like a one-way road, there are many hazardous limitations including being trapped by a wall of flame, falling trees, disabled vehicles, long travel distances before being able to turn around, and the potential for large numbers of vehicles traveling that road. This section limits or reduces the potential dangers of dead-end road to firefighters and civilians. The distances were selected to consider the number of turnouts necessary to provide for fire engine passage and the ability to turn around, drive forward and exit the road. In addition, limitations are based on the volume of vehicle traffic that may be present and utilizing a road with only one point of ingress and egress during an emergency. This will allow more rapid evacuation and escape of civilians without conflict with arriving fire resources.

[36] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 50. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

[37] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 93. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

The distances and zoning limit the amount of traffic and the distances to be traveled to provide reasonable safety for the firefighters as described in §1273.08." (Paulos, as cited in Huff, 2019)

Section 1273.08 explains that the road length "limits the distance a California Department of Forestry and Fire Protection (CDF) engine may face opposing traffic on a one-lane road and places a safety egress within a maximum of three minutes of travel (very little time in the face of a fast-moving firestorm) at 20 mph". In reality, at 20 mph, an engine could travel 5,280 feet. Thus, if three minutes at 20 mph is the basis for the dead-end road lengths, then the entire Project meets the intent of the code as all units can exit the Project via one of the four available egress points within three minutes' travel time. Further, the requirement is most applicable where roads cross fuel beds, are less than 20 feet wide, include extensive unmaintained trees, do not include opportunities for engine turnaround, and do not include a loop with a second roadway.[38] In accordance with the requirements of the FPTR, the Project roads will be at least 40 feet wide and will travel through developed and maintained landscapes with perimeter FMZ of 150 feet and roadside FMZ. These factors all but eliminate the possibility that a "wall of flame, falling trees, disabled vehicles, or long travel distances before being able to turn around" would be encountered during an evacuation. [39]

The Project satisfies the 800 feet dead-end road length requirements for most of the Project. Roads within PA 3 and PA 7 form an extension off of the main road loop through the Project and could be interpreted as dead-ends because the roads serving these areas are a loop with access points within 250 feet of each other (Exhibit 4.16-4, *Murrieta Hills Project Site Plan*). PA 3 includes an approximately 1,600 feet cul-de-sac and PA 7 includes a nearly 2,700 feet extension from the entrance to the end of the cul-de-sac at the furthest point, but both are accessed by 40-foot-wide roads traveling through fuel modified urban landscapes.

Every Project PA offers at least two travel road options from every lot within 800 feet of that parcel. This negates the potential for constrained fire apparatus access and supports fast community-wide evacuations, consistent with Title 14. The FPTR addresses these PAs and other key locations throughout the community with supplementary fire safety enhancements to make a finding that the Project meets the intent of Title 14 and California Government Code §66474.02.

The fire code official (MFR Fire Marshall) has the authority to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access. CCR §1270.07 provides an exception to this authority. As discussed in the FPTR, the purpose of the exception is described as "necessary to permit parties to proceed with their project when equal protection can be provided but the action would not otherwise be allowable under the regulations" and "there will be situations where fuel conditions, building materials or practices, topography or other factors combine to form a set fire safe conditions which could not have been anticipated in these rules." (Paulos, as cited in Huff, 2019). Title 14 §1270.07 further states that "upon request by the applicant, exceptions to standards within this subchapter or local jurisdiction certified ordinances may be allowed by the inspection entity listed in 14 CCR §1270.05, where the exceptions provide the same overall practical effect as these regulations towards providing defensible

[38] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Pages 89-90. Encinitas, CA: Dudek. EIR Appendix 9.11.

[39] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 90. Encinitas, CA: Dudek. EIR Appendix 9.11.

space. Exceptions granted by the inspection entity listed in 14 CCR §1270.05 shall be made on a case-by-case basis only. Exceptions granted by the inspection entity listed in 14 CCR §1270.05 shall be forwarded to the appropriate CAL FIRE Unit Office that administers SRA fire protection in that county and shall be retained on file at the Unit Office."

Title 14 defines "exception" and "same practical effect" as:

> "Exception: An alternative to the specified standard requested by the applicant that may be necessary due to health, safety, environmental conditions, physical site limitations or other limiting conditions such as recorded historical sites, that provide mitigation of the problem."
>
> "Same Practical Effect: As used in this subchapter means an exception or alternative with the capability of applying accepted wildland fire suppression strategies and tactics, and provisions for firefighter safety, including:
>
> a) access for emergency wildland fire equipment,
>
> b) safe civilian evacuation,
>
> c) signing that avoids delays in emergency equipment response,
>
> d) available and accessible water to effectively attack wildfire or defend a structure from wildfire, and
>
> e) fuel modification sufficient for civilian and firefighter safety."

The Project offers each of these accepted wildland fire suppression strategies and tactics and provisions for firefighter safety through a redundant, layered system of protection.[40]

The feasibility of providing two additional secondary access roads, one to the north from PAs 5 or 7 and one to the east-southeast from PA 3 were analyzed, however, these secondary access routes have proven infeasible based upon further evaluation. The limitations of the additional secondary access roads include:

1. Topographical challenges and potential biological impacts stemming from road extensions to the north or south of the western portion of the Project;
2. Potential biological habitat impacts, and open space preserve limits that constrain the ability to grade northerly or southerly roads from the western portion of the Project area; and
3. The increased hazard potential as the roads would extend through wildland fuels, hindering the safety and effectiveness of evacuation from fires originating in the wildland open spaces.

Since secondary access is not feasible given the constraints described above, the Project has developed an alternative approach for secondary access that meets the intent of the code through the implementation of a list of specifically developed measures and features.

[40] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Pages 91-92. Encinitas, CA: Dudek. EIR Appendix 9.11.

A request for an exception to the requirements for dead-end road lengths, as allowed in Title 14, PRC §4290 and the California Fire Code (Section 503.1.1) is being requested by the Project for approval from MFR Fire Marshall. The exception is being requested because the Project technically conforms to secondary access requirements, as detailed in the FPTR, but also because additional egress (technically tertiary egress) from two PAs is infeasible due to unique topographical, geological, and environmental conditions. As described above, the typical mitigation for exceeding the dead-end road length is to provide secondary access. Because additional access points are not feasible, the Project is proposing meeting the intent of the dead-end road length through a combination of site design that allows at least two ways in and out of every neighborhood, site features, and customized mitigation measures that provide a system of fire safety above and beyond the already restrictive fire and building code requirements. This system of fire protection includes a redundant layering of measures designed to keep roadways open and passable, and reduces the possibility that wildfire may threaten the Project.[41] Overall, the combination of adherence to relevant fire/building codes and implementation of Project PDFs and mitigation measures would result in a less than significant impact with mitigation incorporated.

Off-Site Construction and Operations Impacts

Refer to the Construction and Operations discussion above, of this impact section, which also applies to off-site improvements.

MITIGATION MEASURES

See MM WH-3 on page 4.16-26.

MM WH-4: **Formal Landscape Plan – Fire Department Review and Approval.** A formal landscaping plan, which includes a detailed diagram and summary of the Project's vegetation and irrigation plans[42], will be required for the Project. The HOA will include a landscape committee to review and approve landscape plans submitted by residents as required by the FPTR. Furthermore, the MFR or a retained fuel modification plan checker will review the plan for consistency with standard fuel modification layout, plant species, plant distribution, irrigation, etc. Finally, all vegetation/landscape plans are also required to be approved by the City of Murrieta Planning Department.[43]

MM WH-5: **Annual Fuel Modification Maintenance**. Vegetation management shall be completed annually by May 1 and more often as needed for fire safety, as determined by MFR. Homeowners and private lot owners shall be responsible for all vegetation management on their lots, in compliance with the FPTR which is consistent with MFR requirements.

The "Approved Maintenance Entity" (arranged by the HOA and approved by MFR Fire Marshal) shall be responsible for and shall have the authority to ensure long term funding, ongoing compliance with all provisions of the FPTR, including vegetation

[41] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Page 93. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

[42] Riverside County Transportation and Land Management Agency. (2009). *Comprehensive Landscaping Guidelines and Standards*. Riverside, CA: Riverside County Transportation and Land Management Agency.

[43] Huff, M. (2019). *Murrieta Hills Fire Protection Technical Report Plan No. SP 012-3164, TTM 35853*. Encinitas, CA: Dudek. EIR Appendix 9.11.1.

planting, fuel modification on the perimeter and within interior maintained common areas, vegetation management, and maintenance requirements on all private lots, multi-family residences, parks, common areas, roadsides (including Keller Road), and open space under their control (if not considered biological open space). Any water quality basins, flood control basins, channels, and waterways will be kept clear of flammable vegetation.

MM WH-6: **Annual FMZ Compliance Inspection.** To confirm that the Project's common areas are being maintained according to the FPTR, the "Approved Maintenance Entity" shall obtain an inspection and report from an MFR–authorized third-party Wildland Fire Safety Inspector, in May of each year, certifying that vegetation management activities throughout the Project have been performed pursuant to this FPTR. The third-party Wildland Fire Safety Inspector must be approved by the MFR Fire Marshal prior to entering into an agreement with the company or individual. The third-party Wildland Fire Safety Inspector must submit qualifications and certifications for review. The report will be funded by the "Approved Maintenance Entity" and submitted to MFR for approval. If the FMZ areas are not compliant, the HOA will have a specified period to correct any noted issues so that a re-inspection can occur, and certification can be achieved.

MM WH-7: **Murrieta Hills Exceeds Chapter 7A (California Building Code) Ignition-Resistant Building Standards.** The Project will be subject to Chapter 7A ignition resistant building standards and will exceed those requirements in key areas:

a. Ventilation for all structures of the development, including dryer vents, will be required to be ember resistant with 1/8 screening

b. The FMZs for homes located on the perimeter of the development footprint and homes adjacent to the internal riparian area (linear nature park), including rear yard areas (total of 170 feet with the inclusion of rear and/or side yards), will be considered limited building zones, which is not required by the code. This designation requires all structures, including sheds, gazebos, trellises, play equipment, and others to be constructed of ignition resistant materials per Chapter 7A of the California Building Code. Automatic fire sprinklers will also be required in all structures that are 250 square feet or larger.

MM WH-8: **Murrieta Hills – Shelter-in-Place Philosophy (Not Status).** The Project will incorporate the same fire protection philosophies as shelter-in-place communities but will not seek shelter-in-place status.[44] Murrieta Hills, like most new communities in southern California, will offer emergency responders the last resort option of temporarily seeking refuge on-site and directing residents to remain in their well-protected homes if early, safe evacuation is not possible.

[44] Note that there's only one fire agency (Rancho Santa Fe Fire Protection District) that has designated a community as an official shelter-in-place community. There's no overarching organization who provides certifications or has qualifications for shelter-in-place. Therefore, the Project Applicant **does not** designate the MHSPA Project as a shelter-place-community.

MM WH-9: **Murrieta Hills Annual Fire Operation Contribution.** The Project will contribute fair-share funding annually toward fire operations through property tax allocations and/or separate assessments, as determined by the City of Murrieta.

MM WH-10: **Cooperative Wildfire Agreement**. The Project (Community Facilities Districts [CFD] or HOA) will reimburse MFR for uncured cost associated with the Cooperative Wildfire Agreement with CAL FIRE for wildland fire protection on adjacent preserved land. Funding will be part of CFD/HOA dues and will be paid annually in perpetuity.

Impact 4.16-5: If located in or near SRA or lands classified as Very High FHSZ, would the Project:

4. Expose people or structures, either directly or indirectly, to significant loss, injury or death involving wildfires, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes?

Level of Significance: Less Than Significant Impact

CONSTRUCTION AND OPERATIONS

As stated earlier, on-site elevations range from approximately 1,570 feet above MSL to approximately 2,270 feet above MSL. Slopes range from flat in the northeast corner of the property to moderate and steep along the hillsides and ridges that separate the site's drainages. Large rock outcroppings commonly occur throughout the property's slopes. As previously discussed, slope is important relative to wildfire, because steeper slopes typically facilitate more rapid-fire spread upslope. In the case of the Project site, the steeper slopes are primarily within the areas designated as permanent open space preserve and will not be developed. The site's steeper slopes ascend away from the developed areas of the Project (versus situations where development occurs at the top of a slope). The slopes and drainages are generally in alignment with the Santa Ana wind events, which can influence fire spread by creating wind-driven fires, especially when moving upslope.

As discussed in *Section 4.5 Geology and Soils*, no evidence of on-site landslides/debris flow was observed during field investigation or documented on the California Geologic Survey Landslide Inventory. Additionally, the Project site is not located within the 100-year floodplain, but is in "Zone X," which is areas determined to be outside of the 0.2 percent annual chance (500-year) floodplain. The potential for flooding is considered low for the Project site. However, construction of the Project would alter the existing drainage pattern of the site and rate and amount of surface runoff, considering the existing site is generally undeveloped with little existing impervious surfaces. As was discussed previously, the Murrieta Hills property is characterized by three primary drainages and their associated sub-drainages. Overall drainage patterns will remain consistent, with flows directed to both the Santa Ana River and Santa Margarita River watersheds. To address this concern, the Project Applicant has prepared a Preliminary Drainage Study (EIR Appendix 9.7.1) and coordinated extensively with the City of Murrieta and Riverside County Flood Control and Water Conservation District. The study shows that, without mitigation, the Project would increase surface runoff flows for both the 10-year and 100-year events in certain drainage areas. The Project's drainage system provides on-site detentions basins and bio-retention basins, combined with a comprehensive on-site and off-site storm drainage system. For more information see Section 4.9*, Hydrology and Water Quality*.

In summary, the Project Site:

- steeper slopes ascend away from the developed areas of the Project (vs. situations where development occurs at the top of a slope);
- is not located within the 100-year floodplain and the potential for flooding is considered low;
- contained no evidence of on-site landslides/debris flow; and
- construction would alter the existing drainage pattern of the site, rate and amount of surface runoff, but the Project's drainage system has been designed to mitigate these impacts, by providing on-site detentions basins and bio-retention basins, combined with a comprehensive on-site and off-site storm drainage system.

Therefore, it is not anticipated that the Project will expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts in this regard will be less than significant.

Off-Site Construction and Operations Impacts

Impacts will be similar to on-site construction and operation impacts. Refer to impact analysis above.

MITIGATION MEASURES

No mitigation is required.

4.16.6 CUMULATIVE IMPACTS

According to the County of Riverside EIR No. 521 Section 4.13 – Hazardous Materials and Safety (a companion document to the County GP which analyzes impacts of the GP and mitigation), compliance with existing regulations and County GP policies would ensure that impacts related to wildland fire risks as a result of future development accommodated by GPA No. 960 would have less than significant impacts. According to the City of Murrieta GP 2035 Final EIR Fire Protection section, buildout of the Murrieta GP would result in a less than significant impact from wildfire hazards following adherence to and/or compliance with the existing regulatory framework, Murrieta GP goals and policies, and mitigation measures.

Cumulative impacts from multiple projects within a fire agency's jurisdiction, like MFR can cause fire response service decline and must be analyzed. The Project represents a large development that would increase the existing call volume by 0.6 calls per day, on average. The resulting impact on fire services has been analyzed and despite the population increase and anticipated call volume increase, the existing fire service delivery system is considered to have capacity to serve the Project. When compared to standard utilization rates for busy (10 calls per day for an urban station) fire stations (Hunt, as cited in Huff, 2019), it is clear there is capacity to serve the Project.

Despite the minor increase in number of calls per year from the Project, it contributes to the cumulative impact on fire services, when considered with other anticipated projects within MFR's primary response area.

MFR responded to 9,456 calls in 2018 and is anticipated to surpass 10,000 calls in 2019. This equates to an average of 5.5 calls per day per station. Station Nos. 2 and 3 respond to higher call volumes than this average and the other stations respond to fewer. The addition of over 1,000 calls per year, depending on where those calls originate, could result in an impact and negatively affect MFR's response capability. The addition of a sixth fire station (location yet to be determined), which is currently being explored by MFR, would mitigate this additional call volume, but would need to be situated where it could respond to the most new calls, or reduce the load for otherwise busy fire stations.

The Project, as well as other area projects that may be approved, provide revenue for fire resources through funding via tax allocations and CFD/HOA dues. These revenue sources are expected to fund capital improvements enhance MFR's response capabilities and at least maintain the current standards for firefighting and emergency response. The contributions from this Project and other projects could be allocated towards the ongoing maintenance of a sixth fire station currently being contemplated by the City. Over the long term, it is anticipated that MFR will be able to perform its mission into the future at levels consistent with the its' internal response time goals.

4.16.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable wildfire hazard impacts have been identified for either the construction or operation phases of the Project.

4.16.8 REFERENCES

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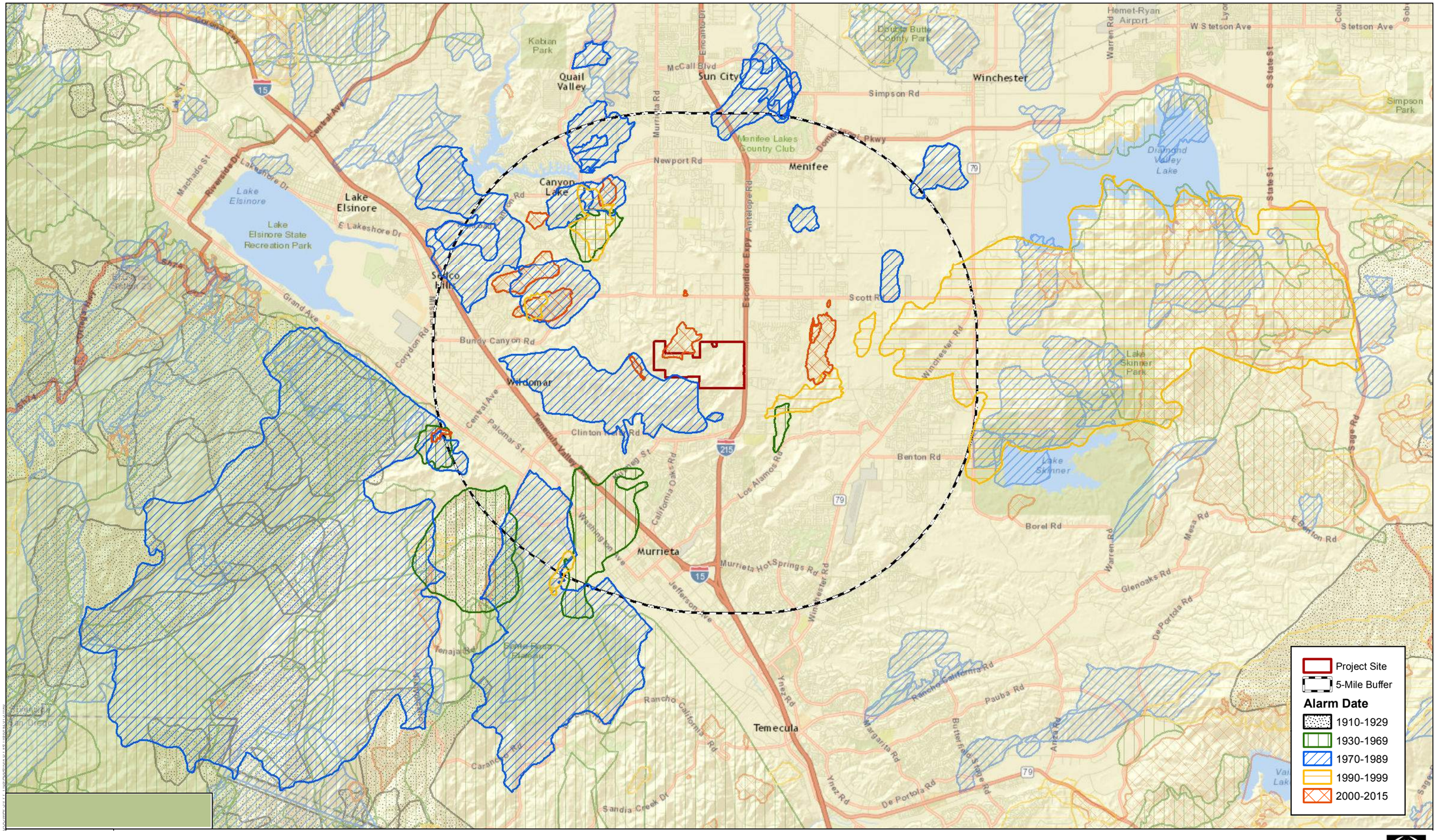
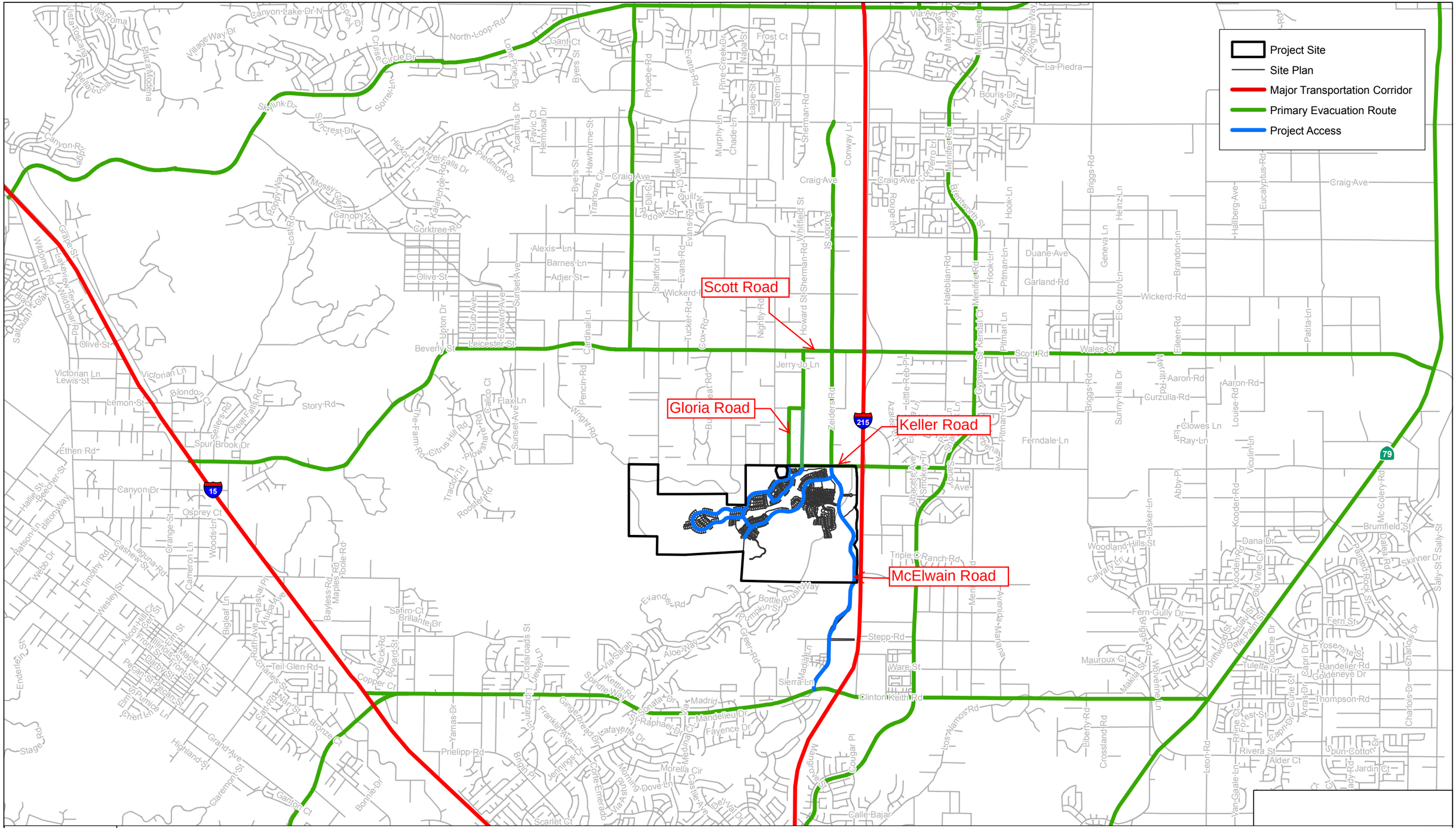


Source: Murrieta Hills Fire Protection Technical Report, Appendix B

Not to Scale

EXHIBIT 4.16-1: Project Vicinity Fire History
Murrieta Hills Specific Plan Amendment

Kimley»Horn

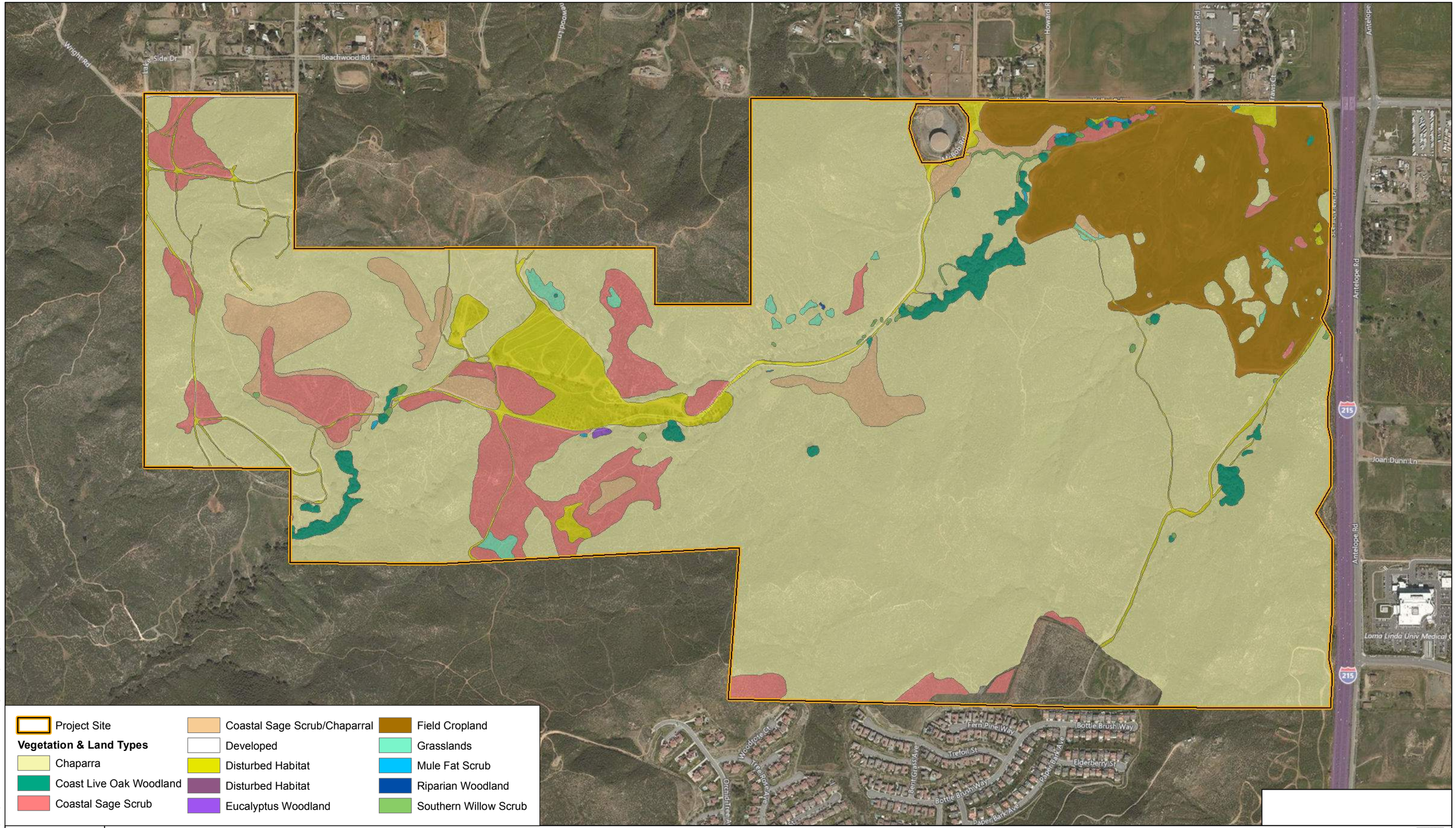


Source: Murrieta Hills Fire Protection Technical Report, Figure 6

Not to Scale

EXHIBIT 4.16-2: Fire Evacuation Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

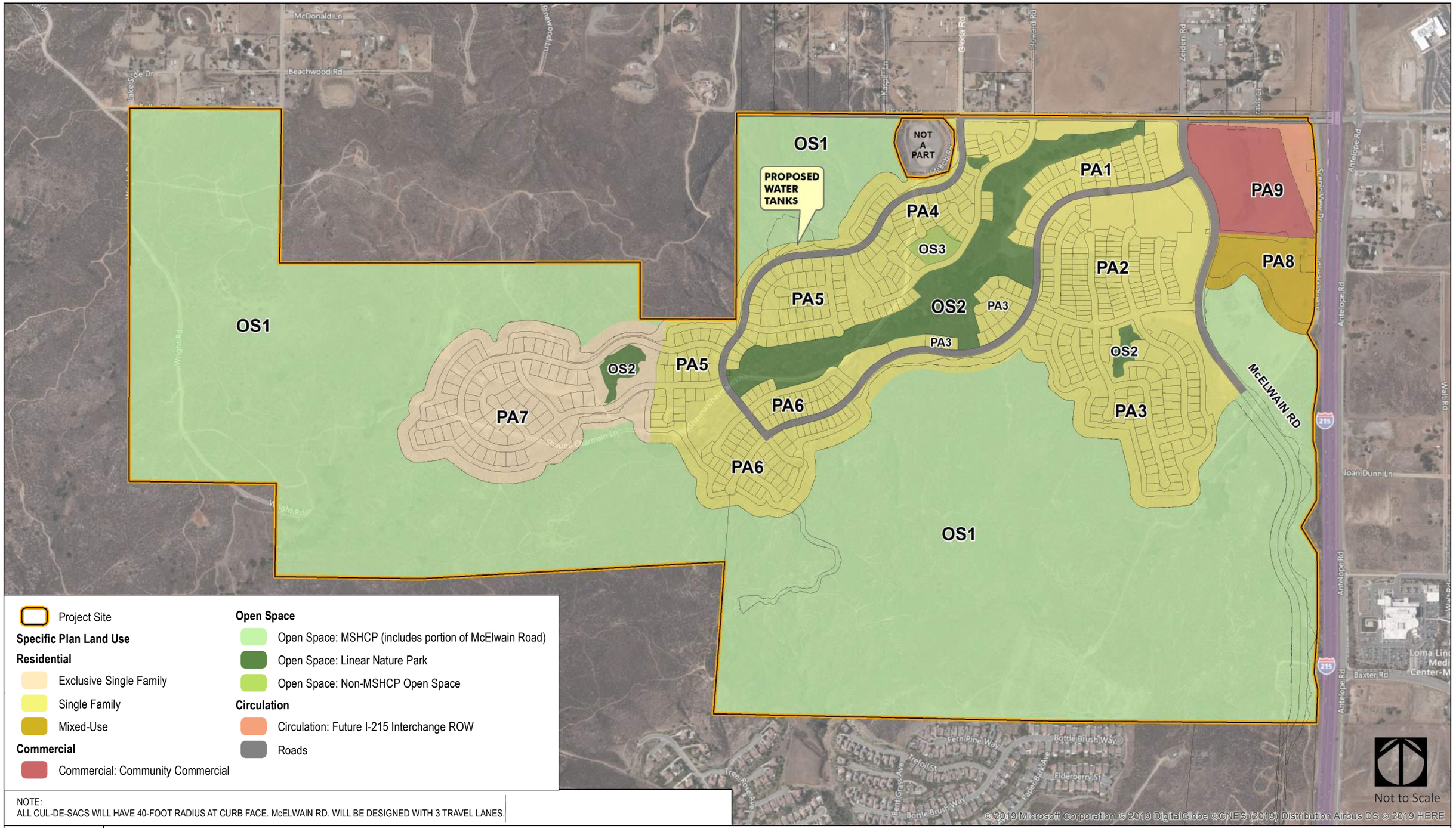


Source: Murrieta Hills Fire Protection Technical Report, Figure 4

Not to Scale

EXHIBIT 4.16-3: Vegetation and Land Cover Types Map
Murrieta Hills Specific Plan Amendment

Kimley»Horn



Source: Murrieta Hills Fire Protection Technical Report, Figure 3

EXHIBIT 4.16-4: Murrieta Hills Project Site Plan
Murrieta Hills Specific Plan Amendment

Kimley»Horn

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

5.1 INTRODUCTION

Pursuant to California Public Resources Code (PRC or CEQA Statute) §21002, §21002.1, §21100 and §21150, a lead agency must identify both feasible mitigation measures and feasible alternatives that could avoid or substantially lessen the significant environmental effects of a project. California Code of Regulations, Title 14, Division 6, Chapter 3, §15126.6 (a) and (b) (CCR or CEQA Guidelines) provide guidance on the scope of alternatives to a proposed project that must be evaluated. The CEQA Guidelines state the following:

> *Alternatives to the Proposed Project. An EIR shall 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. 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 or speculative. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the 'rule of reason.' (Internal citations omitted).*
>
> *Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (PRC §21002.1), 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.*

The City, as Lead Agency, selected alternatives that could feasibly attain most of the basic objectives of the Project and avoid or substantially lessen one or more of the significant effects.

Section 15126.6(f) of the CEQA Guidelines states:

> *The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR needs to examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.*
>
> *Among the factors that may be considered when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.*

Therefore, factors considered when addressing the feasibility of alternatives include but are not limited to: site suitability, economic viability, availability of infrastructure, General Plan (GP) consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether proponents can reasonably acquire, control or otherwise have access to the alternative site. Although these factors do not present a strict limit on the scope of reasonable alternatives to be considered, they help establish context in which "the rule of reason" is measured against when determining an appropriate range of alternatives sufficient to establish and foster meaningful public participation and informed decision-making.

5.2 PROJECT OBJECTIVES

Section 15124(b) of the CEQA Guidelines indicates that an EIR should include "a statement of objectives sought by the proposed Project." The Project was prepared to achieve the following Project objectives, which are also described in Section 3.6 of this Draft EIR:

- Amend and replace the adopted Murrieta Hills Specific Plan No. SPM-4 to establish new requirements and development guidelines for the Murrieta Hills master-planned community.
- Enhance circulation in the MHSPA area by providing a new connection via the proposed McElwain Road connection, improvements to Keller Road, dedicating ROW necessary for the proposed Keller Road/I-215 interchange improvements, and contributing the Project's fair share to planned Circulation Element improvements in the cities of Murrieta, Menifee and Wildomar. See Section 4.13, *Transportation* for additional information.
- Enhance existing infrastructure to serve the Project and planned nearby development, including increasing Eastern Municipal Water District (EMWD) water storage, service infrastructure and sewer capacity, and enhancing fire flow availability for fire protection purposes.
- Provide a variety of housing opportunities (single-family residential and multi-family residential as part of the mixed-use planning area) to serve the existing and future housing needs in the City of Murrieta, consistent with the goals and policies established in the Murrieta GP Land Use, Housing, Healthy Community, Economic Development, and Safety Elements.
- Provide an opportunity for commercial development and necessary neighborhood commercial services to serve existing and planned development in the vicinity of the MHSPA area to reduce vehicle trips.
- Permanently preserve over 600 acres of natural open space under the Western Riverside County MSHCP. This equates to approximately 63 percent of the approximately 972-acre MHSPA area, exceeding the MSHCP minimum conservation requirement of 60 percent for Cell Group C in the Sun City/Menifee Valley Area Plan.
- Create and maintain an approximately 37-acre linear natural park to provide open space and protection of environmentally sensitive areas by preserving oak woodland and riparian habitat.
- Annex the Project area into the City of Murrieta to allow for orderly and efficient local control of land use planning and the extension and improvement of public services.
- Annex southerly parcels, owned by the RCA, currently in unincorporated County of Riverside, between the MHSPA area and City of Murrieta, into the City and its SOI. Annexation will allow the

City to coordinate public safety and protection efforts for the parcels because the parcels will be under City jurisdiction.

5.3 CRITERIA FOR SELECTING ALTERNATIVES

Several criteria were used to select alternatives to the Project, primarily the ability to achieve at least some of the Project's basic objectives, and ability to mitigate or avoid the Project's significant impacts. In addition, City staff and the Project Applicant considered input from stakeholders during the Project's CEQA review process, particularly with respect to avoidance and mitigation of Project impacts to biological resources, cultural resources and tribal cultural resources. Following release of the NOP, and as a result of discussions and consultation with area stakeholders, the Project's land use plan was substantially modified to further reduce potentially significant impacts. This modification, or "alternative," to the previously approved Specific Plan No. SPM-4 and the initial revised project land use plan identified in the NOP, is addressed as the Project throughout this EIR.

5.3.1 ABILITY TO ACHIEVE PROJECT OBJECTIVES

For purposes of the alternative analysis, alternatives are assessed to determine the extent to which each could attain "most of the basic objectives" identified for the Project. The Project objectives are noted above in Section 5.2.

5.3.2 ABILITY TO MITIGATE OR AVOID THE PROJECT'S SIGNIFICANT IMPACTS

Section 15126.6(b) of the CEQA Guidelines states that "Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (PRC §21002.1), the discussion of alternatives shall focus on alternatives to a 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."

The Project has been designed to avoid or minimize potentially significant impacts, as noted throughout the Draft EIR, including the various Project Design Features. In particular, site design was modified to avoid sensitive resources, and EIR mitigation measures were developed in consultation with other agencies and stakeholders to further reduce or avoid potentially significant environmental impacts. However, for several environmental issue areas, even with Project Design Features and EIR mitigation measures, significant impacts would still occur with Project construction and operation. These are referred to as "unavoidable significant impacts," as noted in each respective EIR section, and also listed below.

AESTHETICS

- **Visual Character or Quality of Public Views (Impact 4.1-3).** Despite strategic Project Design Features, compliance with applicable City requirements, and substantial reduction in density compared to the previously approved Specific Plan No. SPM-4, the Project represents a substantial change in the overall site character and will substantially degrade the existing visual character or quality of public views of the developed portions of the site. No mitigation measures were identified to reduce these impacts to less than significant. Therefore, each planning area within the MHSPA area will be required to comply with the development guidelines set forth within the MHSPA, the goals and policies within the Murrieta GP, and the sections within the Murrieta MC. Each planning area shall be evaluated to showcase conformance with these

regulatory standards to ensure minimal impacts will occur to the visual character or quality of the site.

AIR QUALITY

- **AQMP Consistency (Impact 4.2-1).** Although the Project's long-term influence will be consistent with the 2016 AQMP and SCAG's goals and policies, the Projects exceedance of operation ROG and NO_X thresholds will potentially result in a long-term impact on the region's ability to meet state and federal air quality standards. Although construction emissions will not exceed SCAQMD thresholds, impacts associated with AQMP compliance will be significant and unavoidable due to Project implementation. Furthermore, the Project would require a GP amendment and zone change, which will be processed concurrently with the MHSPA. These actions were not previously considered during the SCAG's growth forecasts. The annexation into the City of Murrieta and changing the land uses to allow for a greater population density than what was anticipated in the 2016 AQMP, would exceed the buildout assumptions in the AQMP.
- **Project-Related Operational Emissions (Impact 4.2-2).** Despite implementation of mitigation measures, the Project's operational emissions will remain above SCAQMD thresholds for ROG and NO_X resulting in a significant and unavoidable impact.
- **Cumulative Emissions.** As stated above, operational activities will create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for NO_x and ROG. Implementation of MM AQ-1 will reduce impacts; however, a significant and unavoidable impact will remain.

GREENHOUSE GAS EMISSIONS

- **Project-Related GHG Emissions (Impact 4.7-1).** Despite implementation of MM GHG-1, the Project's GHG emissions would remain above SCAQMD thresholds, resulting in a significant and unavoidable impact.
- **GHG Plan Consistency (Impact 4.7-2).** Despite implementation of MM GHG-1, the Project's GHG emissions would potentially conflict with the City's ability to meet the emissions reductions targets established in the CAP, resulting in a significant and unavoidable impact.
- **Cumulative GHG Emissions.** Despite implementation of MM GHG-1, Project emissions would potentially conflict with the emission reduction targets set by the CAP and other statewide plans for reducing GHG emissions. Therefore, the Project's contribution of GHG emissions would be cumulatively considerable.

NOISE

- **Construction Blasting (Impact 4.11-1).** Despite implementation of MM NOI-1 through NOI-3 and MM NOI-6, noise levels from blasting activities would still impact nearby residential communities and MSHCP conversation areas. Therefore, construction blasting would have a significant and unavoidable impact in the surrounding areas.
- **Off-site Operational Noise (Impact 4.11-1)**. Project implementation would result in increased traffic and roadway noise. Specifically, noise levels would result in a maximum increase of 11.0 dBA along McElwain Road (Keller Road to Project Access) as a result of the Project. Mitigation was

determined to be infeasible to reduce mobile traffic noise to "acceptable" or "conditionally acceptable" levels in accordance with the Land Use Compatibility standards.

- **Construction Groundborne Vibration Impacts (Impact 4.11-2)**. Groundborne vibration impacts from Project construction would meet the FTA's 0.20 in/sec PPV architectural damage threshold. However, the City's more stringent vibration threshold of 0.01 in/sec PPV vibration perception threshold outlined in Murrieta MC Section 16.30.130.K would be exceeded. Even with implementation of MM NOI-6, impacts would still be significant. Furthermore, off-site construction vibration levels would impact residential land uses on Zeiders Road between Keller Road and Scott Road. Impacts associated with groundborne vibration would be significant and unavoidable throughout the construction period.
- **Cumulative Noise and Vibration Impacts.** The Project's cumulative contribution to construction noise and vibration (blasting) and off-site traffic noise would be significant and unavoidable despite implementation of MM NOI-1 through MM NOI-6.

TRANSPORTATION

- **Conflict with Local Transportation Plan Goals (Impact 4.13-1).** Despite Project Design Features, assumed transportation network improvements, and mitigation measures for Project scenarios through Year 2035, full funding and construction of all improvements and mitigation measures is not guaranteed, resulting in a potentially significant and unavoidable impact for improvements in other jurisdictions.

5.4 ALTERNATIVES TO THE PROPOSED PROJECT

Table 5-1, *Comparison of Alternatives*, compares the potential environmental impacts of three alternatives to the Project, including:

- **No Project/No Development** (Alternative 1) – the site remains in its current undeveloped condition with limited agricultural activity. The original Murrieta Hills Specific Plan No. SPM-4, approved by the City of Murrieta in 1995 (City Council Resolution No. 95-353), would remain the governing document for development of the Project site.
- **No Project/Existing County GP Land Use Designations (Reduced Density)** (Alternative 2) – the site is developed pursuant to current County GP Land Use Designations of Rural Mountainous (RM), Rural Community – Low Density Residential (RC-LDR), and Rural Community – Estate Density Residential (RC-EDR). RM allows for 1 DU/10 acre minimum lot size; RC-LDR allows for 1 DU/0.5 to 1 acre parcel size; and RC-EDR allows for 1 DU/2 to 5 acre parcel size. However, clustering is encouraged at an allowed density of 1 DU/0.5-acre lot size. Dedication of 60 percent (approximately 583 acres) of the Project site as MSHCP open space is assumed. For the purposes of this EIR, this Alternative is evaluated at the RM clustered density for the remaining approximately 389 acres, equating to approximately 778 DUs.
- **Previously Approved Specific Plan** (Alternative 3) – The previously approved Specific Plan No. SPM-4 allowed a maximum of 1,585 DU plus a 184-acre memorial park, a 46.5-acre linear park/riparian corridor, a 10-acre elementary school and a 10-acre neighborhood commercial/office center.

These alternatives were selected based upon their ability to avoid or substantially lessen one or more of the significant effects of the Project, while still achieving the primary Project objectives (to develop the site in a manner generally consistent with the currently approved and amended Murrieta Hills Specific Plan). In addition to these alternatives, the EIR addresses an "Alternative Site" (Alternative 4) alternative as required by CEQA, although this is not considered applicable to the Project given that the Project is an amendment to an existing, site-specific Specific Plan.

Table 5-1 below, compares the impacts of the alternatives with those of the MHSPA Project and identifies whether each alternative result in (1) a lesser impact than the Project, (2) the same impact as the Project, or (3) a greater impact than the Project.

Table 5-1: Comparison of Alternatives Project Impacts to the Project

Environmental Topic	Alternative 1 "No Project / No Development" Alternative	Alternative 2 "No Project / Existing County GP Land Use Designations" Alternative	Alternative 3 "Previously Approved Specific Plan" Alternative
Aesthetics	lesser	same	greater
Air Quality	lesser	same	greater
Biological Resources	lesser	greater	greater
Cultural Resources	lesser	greater	greater
Energy	lesser	same	greater
Geology and Soils	lesser	same	greater
Greenhouse Gas Emissions	lesser	same	greater
Hazards and Hazardous Materials	lesser	same	greater
Hydrology and Waste Quality	lesser	same	greater
Land Use and Planning	greater	lesser	lesser/same (varies)
Noise	lesser	same	greater
Public Services and Recreation	lesser	same	greater
Transportation	lesser	same	greater
Tribal Cultural Resources	lesser	greater	greater
Utilities and Service Systems	lesser	same	greater
Wildfire Hazards	greater	same	same
Achieves Project Objectives	No	No	Yes (partially)

lesser - Compared with the MHSPA Project, the significance of the impact is reduced.
greater - Compared with the MHSPA Project, the significance of the impact is increased.
same - Compared with the MHSPA Project, there is no change in the significance of the impact.

Table 5-2, *Project Objectives Consistency Analysis*, identifies objectives consistency for each of the proposed alternatives. Further discussion of objectives related to each Alternative is provided following the impact analysis comparison below.

Table 5-2: Project Objectives Consistency Analysis

Project Objective	Alternative 1 "No Project / No Development" Alternative	Alternative 2 "No Project / Existing County GP Land Use Designations" Alternative	Alternative 3 "Previously Approved Specific Plan" Alternative
	Consistent:	Consistent:	Consistent:
Amend and replace the adopted Murrieta Hills Specific Plan No. SPM-4 to establish new requirements and development guidelines for the Murrieta Hills master-planned community.	No	No	No
Enhance circulation in the MHSPA area by providing a new connection via the proposed McElwain Road connection, improvements to Keller Road, dedicating ROW necessary for the proposed Keller Road/I-215 interchange improvements, and contributing the Project's fair share to planned Circulation Element improvements in the cities of Murrieta, Menifee, and Wildomar. See Section 4.13, *Transportation* for additional information.	No	Yes	Yes
Enhance existing infrastructure to serve the Project and planned nearby development, including increasing Eastern Municipal Water District (EMWD) water storage, service infrastructure and sewer capacity, and enhancing fire flow availability for fire protection purposes.	No	Yes	Yes
Provide a variety of housing opportunities to serve the existing and future housing needs in the City of Murrieta, consistent with the goals and policies established in the Murrieta GP Land Use, Housing, Healthy Community, Economic Development, and Safety Elements.	No	No	Yes
Provide an opportunity for commercial development and necessary neighborhood commercial services to serve existing and planned development in the vicinity of the Specific Plan area to reduce vehicle trips.	No	No	Yes
Permanently preserve, via conservation easement or fee ownership transfer to a conservation agency, over 600 acres of natural open space under the Western Riverside County MSHCP. This equates to approximately 62 percent of the approximately 972-acre Specific Plan area, exceeding the MSHCP minimum conservation requirement of 60 percent for Cell Group C in the Sun City/Menifee Area Plan.	No	No	No
Create and maintain a linear natural park to provide open space and protection of environmentally sensitive areas by preserving oak woodland and riparian habitat.	No	No	Yes
Annex the Project area into the City of Murrieta to allow for orderly and efficient local control of land use planning and the extension and improvement of public services.	No	No	Yes

Project Objective	Alternative 1 "No Project / No Development" Alternative	Alternative 2 "No Project / Existing County GP Land Use Designations" Alternative	Alternative 3 "Previously Approved Specific Plan" Alternative
	Consistent:	Consistent:	Consistent:
Annex southerly parcels currently in unincorporated County of Riverside, between the Specific Plan area and City of Murrieta, into the City and its SOI. Annexation will allow the City to coordinate public safety and protection efforts for the parcels because the parcels will be under City jurisdiction.	No	No	No

ALTERNATIVE 1: "NO PROJECT / NO DEVELOPMENT" ALTERNATIVE

Description of Alternative and Setting

CEQA Guidelines §15126.6, requires an evaluation of the "No Project" alternative for decision-makers to compare the impacts of approving the Project with the impacts of not approving it. The No Project / No Development Alternative assumes that the Project would not be developed, which means there would be no residential dwellings, parks, and other community and recreation uses developed on the Project site. In its existing condition, the site would remain vacant and disturbed with unauthorized off-road vehicle uses and illegal dumping continuing, as well as continued limited agricultural activity. Periodic fire abatement would continue to be required to ensure the public, health, safety, and welfare. Although this Alternative assumes "No Development" (as required by CEQA), this is considered a speculative assumption as the land is assumed to remain in private ownership (as there are no offers to purchase the land for public open space use). It is more likely that, eventually, the land would be developed in some form of "highest and best use," even if that is pursuant to the current County GP land use designations of Rural Mountainous (RM), Rural Community – Low Density Residential (RC-LDR), and Rural Community – Estate Density Residential (RC-EDR) (see "No Project / Existing Zoning" Alternative discussion below). Lastly, the original Murrieta Hills Specific Plan No. SPM-4, approved by the City of Murrieta in 1995 (City Council Resolution No. 95-353), would remain the governing document for development of the Project site.

Impact Comparison to the Proposed Project

This Alternative would avoid all of the significant Project impacts as, by definition, it assumes that no development would occur and therefore no grading, construction or operational traffic and related impacts such as air quality, greenhouse gas emissions, and noise would occur. The four exceptions to this would be, that this Alternative would fail to provide additional housing opportunities (and therefore not meet City, County and regional housing needs goals); would also not provide for the proposed dedication of over 600 contiguous open space acres to the Western Riverside RCA; would not construct the essential north-south connection provided by the McElwain Road Extension; and would not dedicate the right-of-way necessary for the proposed Keller Road / I-215 Interchange (a separate project). Because of this, this Alternative could also have greater wildfire hazard impacts due to not including the McElwain Road Extension (and related emergency access benefits), as well as leaving the site in natural vegetation condition and associated wildfire fuel potential. Under the existing County GP and zoning, individual

parcels would still need to comply with the MSHCP, albeit less likely for a large continuous block of open space dedication which is more desirable from a resource planning and habitat conservation perspective.

Alternative 1 Summary

All topics anticipated to cause a less than significant impact, less than significant with mitigation measures, or a significant and unavoidable impact would be eliminated under Alternative 1. For this reason, Alternative 1 is considered the environmentally superior Alternative. Pursuant to CEQA, where the No Project Alternative is identified as environmentally superior to the Project, the EIR needs to identify a separate "environmentally superior" alternative (described further below). However, as shown in Table 5-2 above, this Alternative fails to meet the Project's basic objectives and is therefore not under consideration at this time.

ALTERNATIVE 2: "NO PROJECT / EXISTING COUNTY GP LAND USE DESIGNATIONS" ALTERNATIVE

CEQA Guidelines (Section 15126.6(e)(2)) requires that the alternatives discussion analyze the "No Project / Existing County GP Land Use Designations" Alternative. Pursuant to CEQA, the "No Project / Existing County GP Land Use Designations" Alternative refers to the analysis of existing conditions (i.e., implementation of current plans and consistency with available infrastructure and community services) and what would reasonably be expected to occur in the foreseeable future if the Project is not approved. When the Project is the revision of an existing land use plan, the No Project Alternative is the continuation of the existing plan into the future. Thus, the projected impacts of the proposed plan or alternative plans are compared to the impacts that would occur under the existing plan (CEQA Guidelines Section 15126.6(e)(3)(A)). Therefore, for the purposes of this EIR analysis, the "No Project / Existing County GP Land Use Designations" Alternative assumes development under the site's current Riverside County GP land use designations.

Description of Alternative

This Alternative assumes development of the site pursuant to existing Rural Mountainous (RM) County GP land use designation, because the majority of this unincorporated portion of the County is designated as Rural Mountainous (RM). A small portion of the northwest corner is designated Rural Community – Low Density Residential (RC-LDR) and a small portion of the northeast corner is designated Rural Community – Estate Density Residential (RC-EDR). Uses and residential development density permitted under the Rural Mountainous (RM) County GP land use designation is as follows:

- Single-family residential uses with a minimum lot size of 10 acres.
- Areas of at least 10 acres where a minimum of 70 percent of the area has slopes of 25 percent or greater.
- Allows limited animal keeping, agriculture, recreational uses, compatible resource development (which may include the commercial extraction of mineral resources with approval of a SMP) and associated uses and governmental uses.

It is also noted that "Clustering is encouraged in all residential designations. The allowable density of a particular land use designation may be clustered in one portion of the site in smaller lots, as long as the ratio of dwelling units/area remains within the allowable density range associated with the designation.

The rest of the site would then be preserved as open space or a use compatible with open space (e.g., agriculture, pasture or wildlife habitat). Within the "Rural" Foundation Component and "Rural" Designation of the "Open Space" Foundation Component, the allowable density may be clustered as long as no lot is smaller than 0.5 acres. This 0.5-acre minimum lot size also applies to the "Rural Community Development" Foundation Component. However, for sites adjacent to "Community Development" Foundation Component areas, 10,000 square foot minimum lots are allowed. The clustered areas would be a mix of 10,000-square-foot and 0.5-acre lots. In such cases, larger lots or open space would be required near the project boundary with "Rural Community" and "Rural" Foundation Component areas."[1]

For the purposes of this Alternative, residential development for the "Rural" Foundation Component (which Rural Mountainous (RM) falls under) density noted under the 'clustering' discussion is assumed, at 1 DU/0.5-Acre. It is also assumed that of the approximately 972-acre Projects site, 60 percent will be dedicated as MSHCP open space. With that, approximately 583 acres would be open space and 389 acres would remain for development. At 1 DU/0.5 acre, this would equate to approximately 778 single-family DUs. This Alternative is assumed to include a McElwain Road extension (from Linnel Lane to Keller Road) and is assumed to include MSHCP compliance with a contiguous dedication of 60 percent or approximately 583 acres of the Project site.[2] Commercial and mixed-use development are not permitted under the Rural Mountainous (RM) GP land use designation and therefore are not assumed in this Alternative. The resultant single-family residential density of 778 DUs represents an increase of 28 DUs (an approximately four percent increase), in addition to excluding the Project's mixed-use and commercial uses and multi-family residential units.

Impact Comparison to the Proposed Project

As shown in Table 5-1, with the assumed very slight increase in residential development units and exclusion of multi-family residential, mixed-use, and commercial square footage, this Alternative would result in reduced impacts related to land use and planning. This reduction is due to this Alternative not requiring annexation, a GP amendment, or zone change and having a slightly greater development footprint.

However, this Alternative would still require grading to accommodate rural residential development and associated access roads and infrastructure. With the clustered development of the approximately 778 single-family residences on approximately 389 acres, this Alternative would have similar visual impacts (due to grading, residential development, and associated lighting). Wildfire impacts would be similar, with a slightly greater development footprint along with a slight increase in residential density. In addition, this Alternative would still have unavoidable significant transportation impacts, as any development in this unincorporated area would require road improvements within the cities of Murrieta and Menifee, which is outside the control of the County of Riverside, and therefore an unavoidable impact. This Alternative would provide less variety in housing types, potentially conflicting with County housing goals, and would not provide employment uses, resulting in aggravating current jobs/housing

[1] County of Riverside. (2019). County of Riverside General Plan, Chapter 3: Land Use Element. Table LU-4: Land Use Designations Summary Notes. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch03_Land%20Use_041619.pdf. Accessed September 18, 2019.

[2] The Project site is comprised of 25 parcels, all owned by the same entity. Therefore, MSCHP open space dedication is based on the assumption that clustered single-family residential development would occur with the area of the 25 parcels, and the open space would be contiguous, (partially) surrounding the residential development. It is also assumed that development would occur in areas already disturbed by previous development (i.e., former nursery) or other ground disturbing activities (i.e., agricultural field) and in areas with terrain more conducive to single-family residential development. This would preserve the portions of the site with steeper topography and more valuable biological resource habitat and views.

imbalance and associated VMT. Finally, this Alternative is assumed to have a slightly greater development footprint, leaving less undisturbed MSHCP open space than the Project, potentially resulting in greater biological, cultural, and tribal cultural resources impacts. However, this Alternative would still result in dedication of a large contiguous open space area to the RCA as part of MHSCP compliance.

Alternative 2 Summary

This Alternative would reduce some of the Project's environmental impacts, although certain other environmental impacts would be greater and the majority of impacts would be similar, as illustrated in Table 5-1. This Alternative fails to meet most of the Project's basic objectives, as noted in Table 5-2. Therefore, this Alternative is under consideration, but is being dismissed because it does not meet the Project objectives.

ALTERNATIVE 3: "PREVIOUSLY APPROVED SPECIFIC PLAN" ALTERNATIVE

Description of Alternative

The "Previously Approved Specific Plan" Alternative (Alternative 3) assumes that development would follow the previously approved Murrieta Hills Specific Plan No. SPM-4, which was approved by the City of Murrieta in 1995 (City Council Resolution No. 95-353). As originally approved, Specific Plan SPM-4 would have allowed a maximum of 1,585 residences with a memorial park, commercial uses, park, passive open space, open space, and an elementary school on approximately 985 acres. This Alternative proposed to protect environmentally sensitive topography and ecological resources by committing approximately 543.5 acres, or 56 percent of the property to: open space (313 acres); memorial park (184 acres); and a linear nature park/riparian corridor (46.5 acres). Specific Plan SPM-4 was prepared prior to adoption of City of Murrieta's GP, and therefore utilized the 1993 General Plan Advisory Committee draft goals and policies as contained in the City's Draft General Plan released in December 1993. The overall development footprint, as shown in Exhibit 3-1, *1995 Specific Plan SPM-4 Land Use Plan*, was substantially greater than the Project, including several planning areas in the site's western higher elevations, extension of Keller Road westerly into the City of Wildomar, as well as the extension of McElwain Road southerly into the City of Murrieta.

Impact Comparison to the Proposed Project

The previously approved Specific Plan No. SPM-4 would have allowed more than double the Project's residential density (maximum 1,585 units compared to the Project's maximum 750 units), substantially increased the overall development footprint including development in the more visible higher elevations to the west, substantially reduced open space commitment (543.5 acres compared to the Project's 652.02 acres), and does not reflect sensitive resource avoidance as incorporated into the Project based on recent stakeholder input. The primary benefits of this Alternative would be to provide a wider range and additional supply of housing opportunities, which could further support the regional housing needs, which are identified at 1,344,740 additional units needed by 2029 in the SCAG region alone.[3]

As shown in Table 5-1, overall this Alternative would have substantially greater environmental impacts than the Project, due to a substantial increase in density and substantial increase in the development footprint, resulting in increased construction-related grading and associated impacts, increased long-term

[3] SCAG Housing Needs Determination, letter dated August 22, 2019. http://www.scag.ca.gov/Documents/6thCycleRHNA_SCAGDetermination_08222019.pdf (accessed August 28, 2019).

operational impacts associated with increased traffic and demands upon utilities and services, and increased impacts to visual resources, biological resources, cultural resources, and tribal cultural resources due to a greater development footprint and substantially lesser undisturbed open space element (313 acres compared to the Project's 608.54 acres). This Alternative does not reflect sensitive resource avoidance as incorporated into the Project based on recent stakeholder input.

Alternative 3 Summary

Although this Alternative would provide for substantially greater housing supply and opportunities, and would meet most of the Project's basic objectives, it would not avoid the Project's unavoidable significant impacts, and is not responsive to stakeholder input regarding sensitive resource avoidance. This Alternative is under consideration, but is being dismissed because it does not meet the Project objectives.

ALTERNATIVE 4: "ALTERNATIVE SITE" ALTERNATIVE

Description and Analysis of Alternative

CEQA requires consideration of an "Alternative Site" Alternative, as follows:

Section 15126.6(f) of the CEQA Guidelines (14 CCR) states:

> *Among the factors that may be considered when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.*

In the case of the Project, an Alternative Site is not considered applicable or feasible, as the Project is an amendment to a previously approved Specific Plan on the site. In addition, the Project Applicant does not control other undeveloped property of similar size within the City of Murrieta or in the immediate area. This Alternative would not achieve the Project objective of updating the previously-approved 1995 Murrieta Hills Specific Plan No. SPM-4 to implement a comprehensive and cohesive plan for the physical and economic development of the MHSP property. No alternative sites were suggested during the Project's NOP scoping process. Lastly, an Alternative Site would not contribute to the conservation of MSHCP Cell Group C, the assembly of Proposed Linkage 8, or the assembly of Proposed Constrained Linkage 16. Nor the associated conservation of wildlife species, habitat, and habitat linkages or movement corridors. For the above reasons, the Alternative Site Alternative was rejected from further consideration.

ALTERNATIVE 5: ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines requires that an Environmentally Superior Alternative be identified; that is, an alternative that would result in the fewest or least significant environmental impacts. If the "No Project" Alternative is the environmentally superior Alternative, CEQA Guidelines Section 15126.6(e)(2) requires that another alternative that could feasibly attain most of the Project's basic objectives be chosen as the environmentally superior alternative.

Following release of the NOP, and as a result of discussions and consultation with area stakeholders, the Project's land use plan was substantially modified to further reduce potentially significant impacts. The Project's land use plan, as currently proposed, was adopted only after extensive environmental analyses

were conducted and extensive discussions were held with the Project Applicant regarding realistic expectations for the Project. As a result of the extensive analyses and discussions, the development footprint was reduced to less than that of the previously approved Specific Plan No. SPM-4 and that identified in the NOP. The MHSPA Project includes certain modifications that are environmentally preferable, reduce Project impacts, implement design alternatives, and directly address stakeholder concerns raised throughout the EIR process. This modification can be considered an "alternative" to the previously approved Specific Plan No. SPM-4 and an "environmentally superior alternative" to the initial revised project land use plan that was originally identified in the NOP. This modified land use plan has been reflected in the proposed Specific Plan and Tract Map and is addressed as the Project throughout this EIR.

Since the "No Project / No Development" Alternative is environmentally superior, the EIR has identified the proposed MHSPA Project as the Environmentally Superior Alternative.

5.5 REFERENCES

County of Riverside. (2019). County of Riverside General Plan, Chapter 3: Land Use Element. Table LU-4: Land Use Designations Summary Notes. Retrieved from Riverside County Website: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch03_Land%20Use_041619.pdf

SCAG Housing Needs Determination, letter dated August 22, 2019. http://www.scag.ca.gov/Documents/6thCycleRHNA_SCAGDetermination_08222019.pdf.

6.0 ADDITIONAL CEQA CONSIDERATIONS

This section discusses additional topics required for inclusion in an EIR pursuant to CEQA, including:

- Significant Irreversible Environmental Changes
- Growth-inducing Impacts
- Mandatory Findings of Significance

6.1 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(c) of the CEQA Guidelines states that "use of nonrenewable resources during initial and continued phases of the project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely." Implementation of the MHSPA would require the long-term commitment of natural resources, including land, and would result in the permanent commitment of land resources with residential, commercial, parks, and open space uses. The MHSPA is an amendment of the approved Specific Plan No. SPM-4. Its direct effects would include new or improved infrastructure to support the proposed land uses, including streetscape improvements, parks, and roadway improvements. Compared to the previously approved Specific Plan No. SPM-4 project, approved in 1995, the MHSPA Project is less intensive and less of a drain on resources. For example, the original project approved for the construction of a maximum of 1,585 residential dwelling units and occupied approximately 985 acres. The Project reduces the number of residential dwelling units compared to the original project by half, to a maximum of 750. It provides a more compact, sensitive design by eliminating development from the southerly and most westerly portion of the Specific Plan No. SPM-4 area and removing the memorial park. It increases the amount of natural open space to be preserved in the MSHCP, removes the extension of Zeiders Road, and provides a more environmentally sensitive north–south roadway connection, McElwain Road. Construction and long-term operation of future development in the Project would require the commitment and reduction of available nonrenewable and renewable resources with a slow natural recharge, including petroleum fuels and natural gas (for vehicle use, construction, lighting, heating, and cooling of structures) and lumber, sand/gravel, steel, copper, lead, and other metals (for use in building construction, piping, and roadway infrastructure). Other resources that are slow to renew and/or recover from environmental stressors (defined as an activity or process by humans that adversely affects a resource) as would also be impacted by Project implementation; examples include air quality (through the combustion of fossil fuels and production of greenhouse gases) and water supply (through the increased potable water demands for drinking, cooking, cleaning, landscaping, and general maintenance needs). Project-specific impacts are addressed in detail in Sections 4.1 through 4.16 of this EIR.

Resources that would be permanently committed to consumption by the Project would include water, electricity, natural gas, and fossil fuels. However, new construction in California is required to conform to energy conservation standards specified in Title 24 of the California Code of Regulations (CCR). The 2019 CBEES were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards. To conform to CCR Title 24, efficient energy use will be designed into all new buildings developed within the Project area. Furthermore, all newly built homes starting on January 1, 2020, are mandated by the California Energy Commission to be equipped with solar electric systems, which must be sized to offset 100 percent of the home's electricity usage. In addition, all new

development will be required to comply with all applicable building codes, development standards, and design requirements related to sustainability and energy conservation contained in the City of Murrieta's Municipal Code (Murrieta MC) and required pursuant to then-current Murietta GP EIR, legislation, executive orders, and regulatory guidance. City policy, Murietta GP EIR standards, and mitigation measures contained in the Murietta GP EIR and in this EIR would help ensure that all natural resources are conserved or recycled to the maximum extent feasible. Energy consumption is discussed in greater detail within Section 4.6, *Energy* and Section 4.15, *Utilities and Service Systems*.

As individual homes are constructed within each MHSPA Planning Area, new technologies could be incorporated into the development, further reducing resource consumption and improving sustainability. Even with the implementation of conservation measures and the utilization of advancing technology, consumption of natural resources would generally increase with the implementation of the Project.

In addition, phasing allows the Project to match home sales to market demand and absorption and to generate the financing necessary for infrastructure improvements, such as roads, parks, schools, and sewer and water facilities, to be installed and available to residents commensurate with the need for these services. Phasing of the development also permits for the planned and orderly construction of off-site improvements that are required to mitigate the Project's impacts on public services serving adjacent communities.

Moreover, long-term increase in the demand for electrical and natural gas resources would occur. Use of these fossil fuel-derived energy sources would be necessary for transport of workers and materials during construction and provision of electricity and natural gas for the new homes, businesses and infrastructure during the life of the Project.

Nonetheless, the Project would utilize these resources to increase housing opportunities affordable to a range of potential residents, provide employment opportunities, increase recreational opportunities, preserve over 600 acres of open space in perpetuity and contribute to the economic and social wellbeing of the community. As such, the Project would contribute to the achievement of the policy goals specified in the City of Murrieta General Plan 2035 (Murrieta GP)(refer to Housing Element Goal 1: p. 6, Policy 1.1 which encourage the provision of a range of residential development types in Murrieta, including low-density single-family homes, moderate density townhomes, higher density multifamily units and residential/commercial mixed-used in order to address the City's share of regional housing needs; and Policy 1.5, design new higher density residential project at a scale, that are compatible in design within adjacent residential areas).[1] Therefore, development of the Project site pursuant to the MHSPA and associated Project approval documents (including the Tentative Tract Map) would not involve a wasteful or unjustifiable use of energy or other resources and the use of energy in the Project area would occur in an efficient manner consistent with the goals, policies, and objectives of the Murrieta GP. As such, no significant irreversible impacts would occur.

[1] City of Murrieta. (2013). *Murrieta General Plan 2035, Chapter 13: 2014-2021 Housing Element.* Retrieved from City of Murrieta Website*:* https://www.murrietaca.gov/DocumentCenter/View/724/13---Housing-Element-PDF. Accessed September 19, 2019.

6.2 GROWTH-INDUCING IMPACTS OF THE PROPOSED ACTION

Section 15126 of the CEQA Guidelines require that an EIR address the "growth-inducing" effects of the Project. Pursuant to Section 15126.2(e) of the CEQA Guidelines, a project would be considered to have a growth-inducing effect if it would:

- Directly or indirectly foster economic or population growth, or the construction of additional housing;
- Remove obstacles to population growth;
- Require the construction of new or expanded facilities that could cause significant environmental effects; or
- Encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Should the Project meet any one of the above-listed criteria, it may be considered growth-inducing. The potential growth-inducing impacts of the Project are evaluated against these four criteria in this section. Section 15126.2(e) states that: "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

The analysis provided below evaluates whether the Project would directly, or indirectly, induce population, housing, or economic growth in the surrounding environment.

6.2.1 DIRECT GROWTH-INDUCING IMPACTS IN THE SURROUNDING ENVIRONMENT

Growth inducement can be defined as the relationship between a project and growth within the surrounding area. This relationship is often difficult to establish with any degree of precision and cannot be measured on a numerical scale because there are many social, economic, and political factors associated with the rate and location of development. Accordingly, the CEQA Guidelines instruct that an EIR should focus on the way's growth might be induced. This relationship is sometimes looked at as either one of facilitating planned growth or inducing unplanned growth. Both types of growth, however, should be evaluated.

To address this issue, potential growth-inducing effects are examined through analysis of the following questions:

1. ***Would this Project directly or indirectly facilitate economic or population growth, or the construction of additional housing? YES.***

The Project, when implemented would directly induce population growth in the City through the development of a maximum of 750 new dwelling units and commercial uses. Utilizing an average of 3.15[2] persons per household, the Project would result in a population increase of approximately 2,363 persons in the City. Again, compared to the previous approved Specific Plan No. SPM-4, the Project is less intensive and less of a drain on resources through reducing the number of proposed dwellings by over half, from 1,585 to 750. Generally, new businesses tend to also directly translate into population growth. The Project will introduce community commercial businesses that will require employees. Therefore, as discussed

[2] City of Murrieta. (2013). *Murrieta General Plan 2035, Chapter 13: 2014-2021 Housing Element*. Page 32. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/724/13---Housing-Element-PDF. Accessed September 19, 2019.

further below, although the Project would directly and indirectly induce economic and population growth, this growth is consistent with local and regional planning documents and is therefore not considered a significant impact in itself. The environmental impacts of construction and operation of the Project are addressed throughout the EIR. The discussion below elaborates on this conclusion.

POPULATION

According to the Department of Finance (DOF) E-5 City/County Population and Housing Estimates, as of January 1, 2019, the City of Murrieta had an estimated population of 118,125 residents[3] and Riverside County had an estimated population of 2,440,124 residents[4]. The City contains approximately five percent of the County's total population.

Table 6-1: Riverside County and Murrieta Population: 2019

Riverside County	Murrieta
2,440,124	118,125
Source: State of California DOF. (2019). E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2019. Sacramento, CA: DOF. Retrieved from DOF Website: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed September 19, 2019.	

DOF population estimates are derived by multiplying the number of occupied housing units by the current persons per household. The persons per household estimates are based on 2010 Census benchmark data, which is the latest available.

Table 6-2: Riverside County and Murrieta Population, Housing and Employment Estimates: 2012-2040

Jurisdiction	2012	2040	Percent Change
Population			
Riverside County	2,239,715	3,183,000	30
City of Murrieta	105,600	129,800	19
Employment			
Riverside County	616,600	1,174,300	47
City of Murrieta	23,200	45,100	48
Housing			
Riverside County	691,880	1,054,300	34
City of Murrieta	32,800	43,500	25
Employment to Household Ratio			
Riverside County	0.9	1.1	-
City of Murrieta	0.7	1.0	-
Source: SCAG. (2016). 2016-2040 RTP/SCS, Demographics and Growth Forecast Appendix. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_DemographicsGrowthForecast.pdf. Accessed September 19, 2019.			

According to Table 6-2, SCAG anticipates Riverside County's population to grow approximately 30 percent between 2012-2040,[5] while the City's population is estimated to grow at a slower rate of 19 percent in

[3] Ibid.
[4] Ibid.
[5] Ibid

the same timeframe.[6] The General Plan anticipates a 26.4 percent population growth for the City between 2009 and 2035.[7] As shown, the General Plan's population growth forecast is more conservative as it assumes a larger population growth in a shorter period of time.

EMPLOYMENT

Total employment forecast for the City as it relates to Riverside County is shown in Table 6-2. Riverside County is expected to add approximately 557,700 jobs between 2012-2040, which is an anticipated 47 percent increase. The City is expected to add approximately 21,900 jobs over the same period, which is a 48 percent increase in employment opportunities. Both the County and City's anticipated employment rate is expected to grow at a similar rate. Murrieta's anticipated employment growth represents approximately four percent of Riverside County's projected employment growth.

HOUSING

Housing growth estimates for City and County are shown on Table 6-2. For 2012-2040, SCAG projects Riverside County's housing to grow by approximately 362,420 dwelling units (34 percent), and Murrieta by 21,900 dwelling units (25 percent). This means a total of 43,500 housing units will be in the City of Murrieta by 2040, or approximately 3.8 percent of the total County's housing stock.

The Murrieta General Plan EIR also includes similar housing projections compared to those by SCAG. The Murietta GP EIR anticipates the City's housing numbers to grow by approximately 10,700 dwelling units by year 2035 for a total of 44,484 dwelling units, which is 984 more dwelling units projected than the 43,500 dwelling units projected by SCAG by 2040.

Table 6-3: Riverside County and Murrieta Housing Characteristics: 2019

	Riverside County	Murrieta
Single Detached	579,511	27,410
Single Attached	52,512	1,238
Total*	847,851	36,880
Vacancy Rate	14.5%	4.4%
Persons per Household	3.32	3.34

Source: State of California DOF. (2019). E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2019. Sacramento, CA: DOF. Retrieved from DOF Website: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed September 19, 2019.
* Includes single detached, single attached, two to four, five plus, and mobile homes housing units.

The DOF keeps yearly housing and population records that are more up-to-date than those of SCAG or the General Plan. However, long-range projections are not available from the DOF. For this reason, DOF data allows for comparisons with other long-range projections for general consistency.

As shown in Table 6-3, as of 2019, the DOF recorded Riverside County as having 847,851 housing units with an average of 3.32 persons per household[8] which would equate to approximately 2,814,865

[6] Ibid.
[7] City of Murrieta. (2011). *Murrieta General Plan 2035 Final EIR, Section 5.2: Population, Employment, and Housing*. Page 5.2-4. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/784/05-02---Population-Employment-and-Housing-PDF. Accessed September 19, 2019.
[8] California Department of Finance (DOF), Demographic Research Unit. 2017. Report E-5 City/County Population and Housing Estimates, February 4, 2019.

residents. Similarly, the City of Murrieta had 36,880 housing units at approximately 3.34 persons per household[9] for an approximately 123,179 residents.

Table 6-4: Total City Population Using 3.34 Persons per Household Ratio

Source	Murrieta
SCAG	145,290 (*FY 2040)
General Plan	148,577 (*FY 2035)
DOF	123,179 (Year 2019)

Sources: State of California DOF. (2019). E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2019. Sacramento, CA: DOF. Retrieved from DOF Website: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed September 19, 2019 and SCAG. (2016). 2016-2040 RTP/SCS, Demographics and Growth Forecast Appendix. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_DemographicsGrowthForecast.pdf. Accessed September 19, 2019.
*FY: Forecast Year
Forecast Population Estimates were computed by using the projected housing total and multiplying it by the DOF 3.34 person per household ratio.

As shown on Table 6-4, using the DOF 3.34 persons per household ratio, the SCAG's anticipated population growth is more conservative than GP's population growth projections.

ANALYSIS

As discussed in Section 3.0, *Project Description*, the original Murrieta Hills Specific Plan No. SPM-4 was approved by the City of Murrieta in 1995 (City Council Resolution No. 95-353) which would have allowed for a maximum of 1,585 residences on approximately 985 acres. Compared to the currently approved Specific Plan No. SPM-4, the MHSPA proposes approximately half of the residential dwelling units at a maximum of 750 units on a smaller approximately 972-acre Project footprint. In addition, the Project preserves a larger portion of natural open space than the originally approved Specific Plan No. SPM-4.

Based on the Project's 750 dwelling units and DOF 3.34 person per household ratio, the Project would add approximately 2,505 persons to the City. The anticipated population growth is equivalent to two percent of SCAG's 145,290 estimated City population by 2040, and about two percent of the General Plan's projected 148,577 population by 2035.

Not only does the introduction of new housing contribute to population growth, but generally new businesses tend to also translate into population growth. Because the Project will add population and new businesses, it is anticipated that new Project residents would fill some of the job needs. Due to the Project's proximity to Interstate 215 (I-215) and other cities, some jobs could be filled by neighboring residents. New commercial uses would not be highly skilled job opportunities; thus, it is not anticipated that a highly-skilled workforce would need to relocate to the area. However, given the trend towards medical offices in the area, skilled workforces in the future may need to relocate to the area.

While the Project would directly and indirectly lead to increased population, housing, and employment, this growth is planned growth. Additionally, due to the reduced number of dwelling units, the Project is less impactful than the currently approved Specific Plan No. SPM-4 and regional growth forecasts. Therefore, this is not considered a significant growth-inducing impact.

[9] Ibid.

2. Would this Project remove obstacles to future population growth? YES.

The MHSPA does include the extension and construction of infrastructure to support the Project. This EIR analyzes potential environmental impacts related to the proposed infrastructure including off-site sewer and drainage facilities, as well as off-site road improvements. The off-site sewer and drainage facilities are intended to serve the Project, and are not anticipated to represent removal of an obstacle to other future development and as such is not considered a significant growth-inducing impact. However, the Project includes the extension of McElwain Road from the Project's southern border through private lands owned by others, providing a secondary access point for the Project, connecting McElwain Road from Keller Road to Linnel Lane. Refer to Section 4.13, *Transportation,* for transportation-related impacts. Although this road extension is primarily intended to provide secondary and emergency access for the Project, it will also improve connectivity between north-central Murrieta and areas to the north, including the City of Menifee. The off-site portion of the McElwain Road extension is included in the City of Murrieta GP Circulation Element; however, the roadway classification does not reflect on-site constraints that severely restrict road construction in this area. As part of the required General Plan Amendment, the MHSPA McElwain Road extension (both on-site and off-site portions) and associated roadway classifications will be acknowledged in the Circulation Element of the Murrieta GP. Therefore, although the proposed road extension would remove an obstacle to development, and is therefore potentially growth-inducing, the road extension will be consistent with the City General Plan and is not considered a significant growth-inducing impact.

3. Require the construction of new or expanded facilities that could cause significant environmental effect? YES.

As discussed in Draft EIR Sections 4.12, *Public Services and Recreation* and Section 4.15, *Utilities and Service Systems*, the Project is currently vacant and will require the typical range of public services and utilities, the majority of which would be located on-site. Required public services and anticipated providers for Murrieta Hills are listed in Table 6-5, *Public Service Providers*. Section 4.13, *Transportation*, describes various off-site road improvements for which the Project would either construct or fund a fair share of, including the McElwain Road extension described above (and throughout the Draft EIR). These off-site road improvements would result in significant environmental impacts (due to ROW acquisition and improvements affecting adjacent resources). This is addressed in Section 4.13 and throughout the Draft EIR. In addition, the Project requires relatively short extensions for sewer service and drainage. Other than these impacts from off-site improvements, the Project is not anticipated to require new or expanded off-site facilities that would result in significant environmental impacts.

Table 6-5: Public Services Providers

Public Services	Public Service Provider (Anticipated)
Water	EMWD
Sewer	EMWD
Electricity	Southern California Edison
Gas	Southern California Gas Company
Fire Protection	Murrieta Fire Department and CAL FIRE
Police	Murrieta Police Department
Schools	Menifee Union School District and Perris Union High School District
Library	Murrieta Public Library
Telephone Service	Frontier Communications & Southern California Telephone Company
Internet/Cable	Time Warner Cable & Frontier Communications
Solid Waste	Waste Management of the Inland Empire

4. ***Encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively? NO.***

Refer to the above discussion. The City is not aware of any other Project-related activity that could significantly affect the environment other than what is discussed in this Draft EIR.

6.3 MANDATORY FINDINGS OF SIGNIFICANCE

CEQA requires preparation of an EIR when certain specified impacts may result from construction or implementation of a project. An EIR has been prepared for the Project, which fully addresses all of the Mandatory Findings of Significance, as described below.

DEGRADATION OF THE ENVIRONMENT

Section 15065(a)(1)-(4) of the CEQA Guidelines requires a finding of significance if a project "has the potential to substantially degrade the quality of the environment." In practice, this is the same standard as a significant effect on the environment, which is defined in Section 15382 of the CEQA Guidelines as "a substantial or potentially adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

This EIR in its entirety addresses and discloses all known potential environmental effects associated with the development of the Project both on- and off-site including direct, indirect, and cumulative impacts in the following resource areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Public Services & Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Hydrology and Water Quality

A summary of all potential environmental impacts, level of significance and mitigation measures is provided in Section 1.0, *Executive Summary*.

IMPACTS ON HABITAT OR SPECIES

Section 15065(a)(1) of the CEQA Guidelines states that "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur: (1) substantially degrade the quality of the environment; (2) substantially reduce the habitat of a fish or wildlife species; (3) cause a fish or wildlife population to drop below self-sustaining levels; (4) threaten to eliminate a plant or animal community; (4) substantially reduce the number or restrict the range of an endangered, rare or threatened species; (5) or eliminate important examples of the major periods of California history or prehistory." The Project would have significant impacts to biological resources, although these impacts are mitigated to less than significant levels. Section 4.3, *Biological Resources*, of this EIR fully addresses any impacts that might relate to the reduction of fish or wildlife habitat or populations and the reduction or restriction of the range of special status species as a result of Project implementation. Note that the Project includes over 600 acres of natural open space that is proposed for dedication to the RCA.

SHORT-TERM VS. LONG TERM GOALS

Section 15065(a)(2) of the CEQA Guidelines states that "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur: the project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals." The Project designates over 600 acres of natural open space, preserving important natural resources. Section 6.1, *Significant Irreversible Environmental Changes*, of this document addresses the short-term and irretrievable commitment of natural resources to ensure that the consumption is justified on a long-term basis. In addition, Section 1.0, *Executive Summary*, identifies all significant and unavoidable impacts that could occur that would result in a long-term impact on the environment. Lastly, Section 6.2, *Growth-Inducing Impacts of the Proposed Action*, identifies any long-term environmental impacts associated with economic and population growth that are associated with the Project.

CUMULATIVELY CONSIDERABLE IMPACTS

Section 15065(a)(3) of the CEQA Guidelines states that "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur: the project has potential environmental effects that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." This EIR provides a cumulative impact analysis only for those thresholds that result in a less than significant impact, a potentially significant impact unless mitigated, or a significant and unavoidable impact. Cumulative impacts are addressed for each of the environmental topics listed above and are provided in Sections 4.1 through 4.16 of this EIR.

SUBSTANTIAL ADVERSE EFFECTS ON HUMAN BEINGS

As required by Section 15065(a)(4) of the CEQA Guidelines, "A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur: the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." Under this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This standard relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could directly or indirectly affect human beings would be possible in all of the CEQA issue areas previously listed, those that could directly affect human beings include aesthetics, air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, land use and planning, public services and utilities, transportation/traffic, water resources, wildfire hazards, and climate change, all of which are addressed in the appropriate sections of this EIR; refer to Table of Contents for specific section numbers. Note that the Project land use plan has been redesigned to eliminate residential units within 500 feet of I-215 to reduce potential health hazards associated with diesel particular matter. The following topic areas were determined to be significant and unavoidable with respect to adverse effects on human beings:

VISUAL CHARACTER

Despite strategic Project Design Features, the Project site is located in a non-urbanized area and will substantially degrade the existing visual character or quality of public views of the site and its surroundings. No mitigation measures were identified to reduce these impacts to less than significant. Each planning area within the MHSPA area will be required to comply with the development guidelines set forth within the MHSPA, the goals and policies within the Murrieta GP, and the sections within the Murrieta MC. Each planning area shall be evaluated to showcase conformance with these regulatory standards to ensure minimal impacts will occur to the visual character or quality of the site and its surroundings.

PROJECT-RELATED OPERATIONAL EMISSIONS

Emissions generated by vehicle traffic associated with the Project will exceed established SCAQMD regional threshold for NO_X. Area source emissions from the Project will not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$. When mobile emissions are combined with area source emissions, ROG emissions will be significant. Area source emissions will be significant due to the magnitude of the development associated with Project implementation. Further, energy source emissions from the Project will not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Despite implementation of mitigation measures, the Project's operational emissions will remain above SCAQMD thresholds for ROG and NO_X resulting in a significant and unavoidable impact.

AQMP CONSISTENCY

Although the Project's long-term influence will be consistent with the 2016 AQMP and SCAG's goals and policies, the Projects exceedance of operation ROG and NO_X thresholds will potentially result in a long-term impact on the region's ability to meet state and federal air quality standards. Although construction

emissions will not exceed SCAQMD thresholds, impacts associated with AQMP compliance will be significant and unavoidable due to Project implementation.

CUMULATIVE EMISSIONS

Operational activities will create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for NO_x and ROG. Implementation of MM AQ-1 will reduce impacts; however, a significant and unavoidable impact will remain.

PROJECT-RELATED GHG EMISSIONS

Despite implementation of MM GHG-1, the Project's GHG emissions would remain above SCAQMD thresholds, resulting in a significant and unavoidable impact.

GHG PLAN CONSISTENCY

Despite implementation of MM GHG-1, the Project's GHG emissions would potentially conflict with the City's ability to meet the emissions reductions targets established in the CAP, resulting in a significant and unavoidable impact.

CUMULATIVE GHG EMISSIONS

Despite implementation of MM GHG-1, Project emissions would potentially conflict with the emission reduction targets set by the CAP and other statewide plans for reducing GHG emissions. Therefore, the Project's contribution of GHG emissions would be cumulatively considerable.

CONSTRUCTION BLASTING

Despite implementation of MM NOI-1 through MM NOI-3 and MM NOI-7, noise levels from blasting activities would still impact nearby residential communities and MSHCP conversation areas. Therefore, construction blasting would have a significant and unavoidable impact in the surrounding areas.

OFF-SITE OPERATIONAL NOISE

Project implementation would result in increased traffic and roadway noise. Specifically, noise levels would result in a maximum increase of 11.0 dBA along McElwain Road (Keller Road to Project Access) as a result of the Project. Mitigation was determined to be infeasible to reduce mobile traffic noise to "acceptable" or "conditionally acceptable" levels in accordance with the Land Use Compatibility standards.

CONSTRUCTION GROUNDBORNE VIBRATION IMPACTS

Groundborne vibration impacts from Project construction would meet the FTA's 0.20 in/sec PPV architectural damage threshold. However, the City's more stringent vibration threshold of 0.01 in/sec PPV vibration perception threshold outlined in Murrieta MC Section 16.30.130.K would be exceeded. Even with implementation of MM NOI-7, impacts would still be significant. Furthermore, off-site construction vibration levels would impact residential land uses on Zeiders Road between Keller Road and Scott Road. Impacts associated with groundborne vibration would be significant and unavoidable throughout the construction period.

CUMULATIVE NOISE AND VIBRATION IMPACTS

The Project's cumulative contribution to construction noise and vibration (blasting) and off-site traffic noise would be significant and unavoidable despite implementation of MM NOI-1 through MM NOI-7.

TRAFFIC RELATED IMPACTS

With implementation of the Project, significant unavoidable impacts would occur where Project-related mitigation measures propose transportation improvements in other jurisdictions. Those improvements are either not fully funded, or otherwise are outside the control of the Project Applicant and City of Murrieta, the Lead Agency. Despite implementation of MM TRAN-1 through MM TRAN-11, impacts would remain significant and unavoidable.

6.4 REFERENCES

City of Murrieta. (2011). *Murrieta General Plan 2035 Final EIR, Section 5.2: Population, Employment, and Housing*. Page 5.2-4. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/784/05-02---Population-Employment-and-Housing-PDF.

City of Murrieta. (2013). *Murrieta General Plan 2035, Chapter 13: 2014-2021 Housing Element*. Retrieved from City of Murrieta Website: https://www.murrietaca.gov/DocumentCenter/View/724/13---Housing-Element-PDF.

SCAG. (2016). *2016-2040 RTP/SCS, Demographics and Growth Forecast Appendix*. Retrieved from SCAG Website: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_DemographicsGrowthForecast.pdf.

State of California DOF. (2019). *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2019*. Sacramento, CA: DOF. Retrieved from DOF Website: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

7.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

7.1 INTRODUCTION

During this evaluation, certain impacts of the Project were found to have "no impact" or a "less than significant" impact because of the absence of project characteristics producing the effects which are the subject of inquiry. This section briefly describes effects found to have no impact or a less than significant impact based on the analysis conducted during the Draft EIR preparation process. Several issues indicated as having no impact or less than significant impact are nonetheless addressed in Sections 4.1 through 4.16 of this Draft EIR as a matter of clarification or convenience for the reader.

7.2 AGRICULTURE AND FORESTRY RESOURCES

Impact 7.1-1: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Level of Significance: Less Than Significant Impact

The northeast portion of the Project site has been previously disturbed by past and present farming operations. The site is bisected by several dirt roads and areas disturbed by unauthorized off-road vehicle activity and illegal dumping. No farming occurs adjacent to the Project site. Most of the Project site is designated as Other Land with some areas in the central and northeast corner of the site designated as Farmland of Local Importance. One pocket of land in the center of the Project site is designated as Unique Farmland and surrounded by Farmland of Local Importance. However, due to the site's steepness and rough topography, farming is not viable at that location.

According to the Riverside County Important Farmland 2016 (Sheet 1 of 3) map[1], Unique Farmland is defined as consisting of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Upon review of historic aerial imagery using Google Earth, the land designated as Unique Farmland was previously used as a plant nursery. It appears that nursery operations ceased in 2012. Because 'cropping' activities ceased prior to 2013 (map publication date of 2017 minus four years), the Unique Farmland designation should be reconsidered.

The Project site does not contain land designated as Prime Farmland or Farmland of Statewide Importance, as mapped on the Important Farmland Finder maintained by the California Department of Conservation[2]. The closest Prime Farmland and Farmland of Statewide Importance to the Project site is located approximately 3.3-miles northeast. Therefore, impacts to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be less than significant.

[1] California Department of Conservation. 2017. *Riverside County Important Farmland 2016, Sheet 1 of 3.* Available at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/riv16_w.pdf, accessed April 1, 2019.

[2] California Department of Conservation 2019. *California Important Farmland: 1984-2016.* Available at https://maps.conservation.ca.gov/dlrp/ciftimeseries/, accessed January 31, 2019.

Impact 7.1-2: Would the Project Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Level of Significance: No Impact

The California Land Conservation Act, also known as the 'Williamson Act,' of 1965, is a voluntary program that allows property owners to have their property assessed based on its agricultural production value rather than at the current market value. The property owner is thus relieved of having to pay higher property taxes, as long as the land remains in agricultural production.

Refer to Response 7.1-1. Due to the site's natural rocky topography and slope steepness, farming is not viable and agricultural activities on-site are limited to the northeast corner of the site. The parcels on which limited dry-farming activities occur are not zoned for under agricultural designations nor do they have an agricultural land use designation according to the County's General Plan. Current on-site agricultural activities are based on an informal lease agreement between the Project Applicant and an area farmer and can be terminated at any time.

No Williamson Act contracts exist for any of the parcels on the Project site[3]. No impact is anticipated to occur because the existing zoning assumes the property is to be developed for potential residential, commercial, open space and conservation uses and does not require that any land be set aside for agricultural purposes. Because the Project would not impact agricultural uses or any Williamson Act contracts, no impacts would occur.

Impact 7.1-3: Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Level of Significance: No Impact

The Project site does not include areas zoned as forestland, timberland or timberland designated as Timberland Production as those classifications are defined in the cited code sections. In fact, the Project site contains a limited number of stands of trees (Google Earth 2019).

Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production. No impact would occur.

Impact 7.1-4: Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

Level of Significance: No Impact

Refer to 7.1-3. The Project would not result in the loss of forestland or the conversion of forestland to non-forest use. No parcels within or adjacent to the Project site are designated as forest land. No impact would occur.

[3] DOC. 2016. *Riverside County Williamson Act FY 2015/2016, Sheet 1 of 3.* Sacramento, CA.

Impact 7.1-5: Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Level of Significance: No Impact

Refer to Responses 7.1-1 through 7.1-4. Limited areas of the Project site are currently used for agricultural operations but none of those areas meet the definition of Farmland as set forth in applicable laws. None of the Project site is designated as Farmland, as mapped on the Important Farmland Finder maintained by the California Department of Conservation (2019).

Therefore, while the Project will impact the limited agricultural operations occurring on the Project site, the Project does not result in an effect as outlined in the above-referenced impact statement. No impact would occur.

7.3 MINERAL RESOURCES

Impact 7.2-1: Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Level of Significance: No Impact

The Project site is categorized as a Mineral Resource (MR) Zone-3, known as having an undetermined significance for mineral deposits[4]. Additionally, the Department of Conservation does not identify the Project site as a mineral resources area.[5] No mineral resources have been identified in or around the Project site. No impact to mineral resources would occur.

Impact 7.2-2: Would the 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?

Level of Significance: No Impact

Refer to Response 7.2-1. The Project's construction and operation would not be located on a locally-important mineral resource recovery site and no such sites are delineated on a local general plan, specific plan or other land use plan. No impact would occur.

7.4 POPULATION AND HOUSING

This section discusses the potential impacts associated with implementation of the Project in the context of existing and forecasted population and housing for the City and County. Demographic information in this analysis include data from the City of Murrieta GP EIR, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the California Department of Finance (DOF). The Project's potential for growth-inducing impacts is discussed in Section 6.2, *Growth-Inducing Impacts of the Proposed Action*.

[4] County of Riverside. 2015. *Draft Environmental Impact Report No 521, Section 4.14 – Mineral Resources.* Available at https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/04-14_MineralResources.pdf, accessed February 1, 2019.
[5] DOC. 2018. *Mineral Land Classification.* Available at https://maps.conservation.ca.gov/mineralresources/, accessed February 1, 2019.

Impact 7.3-1: Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Level of Significance: No Impact

Refer to Section 3.0, *Project Description* and Section 6.2, *Growth-Inducing Impacts of the Proposed Action*. The Project would not result in the displacement of existing people or housing on the Project site, because the Project site is vacant and no structures exist on-site. Thus, the construction of replacement housing would not be required. No Impact regarding the displacement of existing people or housing would occur.

7.5 REFERENCES

County of Riverside. 2015. *Draft Environmental Impact Report No 521, Section 4.14 – Mineral Resources*. Available at https://planning.rctlma.org/Portals/14/genplan/general_plan_2015/DEIR%20521/04-14_MineralResources.pdf, accessed February 1, 2019.

DOC. 2019. *California Important Farmland: 1984-2016*. Available at https://maps.conservation.ca.gov/dlrp/ciftimeseries/, accessed January 31, 2019.

DOC. 2016. *Riverside County Williamson Act FY 2015/2016, Sheet 1 of 3.* Sacramento, CA.

DOC. 2018. *Mineral Land Classification.* Available at https://maps.conservation.ca.gov/mineralresources/, accessed February 1, 2019.

8.0 EIR CONSULTATION AND PREPARATION

This section is consistent with the requirements set forth in §21153 of the PRC and §15129 of the CEQA Guidelines, which states: "The EIR shall identify all federal, state, or local agencies, other organizations, and private individuals consulted in preparing the draft EIR, and the persons, firm, or agency preparing the draft EIR, by contract or other authorization." Refer to Section 2.3, *Notice of Preparation/Early Consultation* for a summary of public notification and stakeholder consultation.

The NOP and NOP comment letters are provided in Appendix 9.1, *Notice of Preparation & Scoping Meeting Materials*. The City provided multiple opportunities for public input, both as part of the CEQA process and as part of Project scoping. In addition to required public notifications under CEQA, the City has engaged in extensive consultation with the Pechanga Band of Luiseño Mission Indians pursuant to SB 18, as discussed further in Section 4.4, *Cultural Resources* and Section 4.14, *Tribal Cultural Resources*.

8.1 PERSONS AND ORGANIZATIONS CONSULTED

8.8.1 LEAD AGENCY

City of Murrieta

1 Town Square
Murrieta, California 92562
Contacts: *Ron Goldman, Contract Project Planner*
James Atkins, Associate Planner

8.8.2 PUBLIC AGENCIES/ORGANIZATIONS

Federal Agencies

United States Army Corps of Engineers
United States Fish and Wildlife Service

State Agencies

California Native American Heritage Commission
California Department of Fish and Wildlife
California Department of Transportation

Regional/Local Agencies

Eastern Municipal Water District
Pechanga Band of Luiseño Mission Indians
Riverside Local Agency Formation Commission
Western Riverside County Regional Conservation Authority
Western Science Center

8.8.3 INTERESTED PARTIES AND ORGANIZATIONS

Notice of Preparation Commenters

Board of Forestry and Fire Protection	*Edith Hannigan, Board Staff*
City of Menifee Community Development Department	*Lisa Gordon, Planning Manager*
City of Moreno Valley	*Raymond W. Johnson*
Department of Fish and Wildlife	*Jeff Brandt, Senior Environmental Scientist*
Department of Transportation, District 8	*Daniel Kopulsky, Office Chief*
Endangered Habitats League	*Dan Silver, Executive Director*
Pechanga Band of Luiseño Indians	*Anna Hoover, Cultural Analyst*
Riverside County Airport Land Use Commission	*John Guerin*
South Coast Air Quality Management District	*Ian MacMillan, Program Supervisor*
Southern California Association of Governments	*Jonathan Nadler, Manager*
URGE	*Raymond W. Johnson*

8.2 LIST OF PREPARERS

8.8.4 ENVIRONMENTAL CONSULTANT

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Contacts: *Kevin Thomas, CEP, ENV-SP, Project Manager*
Karina Fidler, Senior Environmental Manager/Biologist
Rita Garcia, Senior Environmental Manager
Kari Cano, Environmental Analyst
Geoff Bishop, Environmental Analyst
John Fyne-Nsofor, Environmental Analyst
Brian Leung, Environmental Analyst
Meghan D. Karadimos, Environmental Analyst
Achilles Malisos, Air Quality/Greenhouse Gas/Noise
Amanda McCallum, Document Production
Kao Saeteurn, Graphic Designer
Peter Salindong, Graphic Designer

8.8.5 TECHNICAL SUBCONSULTANTS

Atkins

(Draft Cultural Resources Assessment)
(Phase II Test and Evaluation – Confidential Draft)

Chang Consultants

(Project Specific Water Quality Management Plan)
(Preliminary Drainage Study for Tentative Tract Map No. 35853)
P.O. Box 9496
Rancho Santa Fe, California 92067
Contact: Wayne W. Chang, MS, PE

Dudek

(Accepted Draft - Murrieta Hills Fire Protection Technical Report)
605 Third Street
Encinitas, California 92024
Contact: Michael Huff, Principal

Helix Environmental Planning, Inc.

(Murrieta Hills Project General Biological Resources Assessment)
(Murrieta Hills Project Determination of Biologically Superior or Equivalent Preservation)
(Murrieta Hills Project Habitat Evaluation and Acquisition Negotiation Strategy Biological Analysis)
(Minor Amendment Request for Inclusion of Warm Springs Parkway and McElwain Road as Covered Activities Under the Multiple Species Habitat Conservation Plan)
(Murrieta Hills Fuel Modification Clearing Adjacent to Riverine Resources memo)
(Murrieta Hills Fuel Modification Clearing Within and Adjacent to Riverine Resources memo)
7578 El Cajon Boulevard
La Mesa, California 91942
Contact: Barry Jones, Principal Biologist

IWS Environmental, Inc.

(Phase 1 Environmental Site Assessment)
(Environmental Site Inspection memo)
5211 Hartford Way
Westminster, California 92683
Contact: Jim Bunck, R.E.A., Principal

Leighton and Associates, Inc.

(Update Geotechnical Report Tentative Tract Map No. 35853 Murrieta Hills Specific Plan Southwest of Keller Road and I-215, Murrieta, California)
(Geotechnical/Geologic Review Portion of Tentative Tract Map No. 35853 Murrieta Hills Specific Plan, McElwain Roadway, City of Murrieta, California)
41715 Enterprise Circle North, Suite 103
Temecula, California 92590
Contact: Robert F. Riha, Vice President/Senior Principal Geologist
Simon I. Saiid, Principal Engineer

Michael Baker International

(Acoustical Assessment for the Murrieta Hills Specific Plan Amendment)
(Air Quality/Greenhouse Gas Assessment for the Murrieta Hills Specific Plan Amendment)
5 Hutton Centre Dr., Suite 500
Santa Ana, California 92707
Contact: Eddie Torres, Environmental Sciences Manager

(Murrieta Hills Specific Plan Traffic Impact Analysis)
(Vehicle Miles Traveled Analysis for the Murrieta Hills Specific Plan Project memo)
5050 Avenida Encinas, Suite 260
Carlsbad, California 92008
Contact: Robert Davis
Dawn Wilson, PE, TE

(Murrieta Hills Specific Plan – Project Phase 1 Without Keller Road / I-215 Interchange memo)
9755 Claremont Mesa Blvd.
San Diego, California 92124
Contact: Robert Davis

(Technical Memorandum Murrieta Hills Master Water and Wastewater Plan of Service)
40810 County Center Drive, Suite 100
Temecula, California 92591
Contact: Michael J. Boeck, PE, Project Manager

WSP USA, Inc.

(Cultural Resource Summary)
(Traditional Cultural Properties Management Summary - Confidential)
1600 Broadway #1100
Denver, Colorado 80202
Contact: Jason Bright