INITIAL STUDY
Promontory Point Apartment Project
MHS 98, LLC

Prepared for:

CITY OF MURRIETA
1 Town Square
Murrieta, California 92562
Contact: Aaron Rintamäki, Associate Planner
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TABLE OF CONTENTS

FIGURES (at end of document)

APPENDICES (on CD)

Appendix A: *Map My County*

Appendix B: *MHSR Apartments Air Quality and Greenhouse Gas Impact Study*, prepared by MD Acoustics, LLC, 1-14-2019

Appendix C: *General Biological Assessment and Western Riverside County MSHCP Consistency Analysis for Promontory Point APN 913-210-005, 006, 007, 010, 011, 012, 013, 032, 033, 034 & 035 County of Riverside, California,* prepared by Hernandez Environmental Services, 1-2019

Appendix D1: *Phase 1 Cultural Resources Assessment for the Multi-Family Housing Project on 8.37 Acres in the City of Murrieta, Riverside County, California*, prepared by Bio Cultural, 10-2019

Appendix D2: *Tribal Cultural Resources Letters*, prepared by City of Murrieta, 2-21-2019 (with Tribal responses)

Appendix D3: *Paleontological Resources Assessment Report*, prepared by CRMTech, 3-11- 2019

Appendix E1: *Preliminary Geotechnical Investigation Proposed Multi-Family Residential Development – MHS-98, LLC,* prepared by South Shore Testing and Environmental, 2-8-2018

Appendix E2: *Onsite Stormwater Infiltration System Investigation Proposed Multi-Family Residential Development – MHS-98, LLC,* prepared by South Shore Testing and Environmental, 2-8-2018

Appendix E3: *Response to Rising Hill MHS 98, 3rd REVIEW CYCLE COMMENTS, CASE /VO. GP-2018-1762; ZC-2018-1763, DP-2018-1761, City of Murrieta Development Services Department*, prepared by LGC – GEO Environmental, Inc., 9-18-19

Appendix F: *Phase I Environmental Site Assessment of a Proposed Multi-Family Residential Development,* prepared by South Shore Testing and Environmental, 4-3-2018

Appendix G1: *Project Specific Water Quality Management Plan, Murrieta Apartments,* prepared by JLC Engineering and Consulting, Inc., 8-21-2019

Appendix G2: *Preliminary Drainage Study for Murrieta Apartments,* prepared by JLC Engineering and Consulting, Inc., 10-11-2019

Appendix H: *MHSR Apartments Noise Impact Study*, prepared by MD Acoustics, LLC, 1-15-2019

Appendix I: *MHSR Apartments Traffic Impact Analysis,* prepared by TJW Engineering, Inc., 11-22-2019

Appendix J: *Water Availability Multi-Family Residential Complex*, prepared by Rancho California Water District, 9-20-2018

Appendix K: *SAN 53 - Will Serve - Rising Hill Apartments,* prepared by Eastern Municipal Water District, 12-10-2018

Appendix L: *Project Plans*, 10-2019

Appendix M: *MHSR 235 Townhome Multifamily Residential Development – CEQA Energy Review,* prepared by MD Acoustics, LLC, 3-7-2019

Appendix N: *Fire Hydrant Map and Flow Request*, prepared by Rancho California Water District, 1-9-19

Appendix O: *Airport Land Use Commission Riverside County Agenda*, 7-11-19

CITY OF MURRIETA
COMMUNITY DEVELOPMENT DEPARTMENT
INITIAL STUDY

BACKGROUND INFORMATION

1. **Project Title:** **Promontory Point Apartment Project** Development Plan 2018-1761 (DP 2018-1761); General Plan Amendment 2018-1762 (GP 2018-1762); and 1762, Change of Zone 2018-1763 (ZC-2018-1763)

2. **Lead Agency:** City of Murrieta
   Address: 1 Town Square
   Murrieta, California 92562

3. **Contact Person:** Aaron Rintamäki, Associate Planner
   Phone Number: (951) 461-6060

4. **Project Location:** The project site is located at the southeast corner of Delhaven Street and Date Street, west of Winchester Road and north of Rising Hill Drive, in the City of Murrieta (City), Riverside County, California (**Figure 1, *Regional Location Map*** and **Figure 2, *Vicinity Map***). The Project is mapped on Assessor's Parcel Numbers (APN) 913-210-005, 006, 007, 010-013, 033, 034, 035 and portions of 913-210-032.

5. **Project Sponsor:** MHS 98, LLC
   Address: 31938 Temecula Parkway Suite A369
   Temecula, CA 92592
   Attn: Steve Galvez

PROJECT ASSESSMENT

1. **Project Description:** The Project proposes a General Plan Amendment (GPA), Zone Change (ZC), and Development Plan (DP) to change the existing Commercial General Plan land use, Single-Family land use, and Neighborhood Commercial zoning to Multifamily Residential General Plan land use, Multi-Family 3 zoning, and to develop multi-family housing totaling 234 units on an 8.37 acre site. The Project will provide a recreation area with pool and covered picnic area, near the Date Street entry, that will have benches and grills/counters, and there will be a tot lot play area, near building 5, with covered picnic area that will also have benches and grills/counters. **Reference Figure 3, *Site Plan***.

The primary entry driveway is proposed off Date Street at the northwestern side of the Project. This entry is gated and will provide the main ingress and egress from the Project site. A secondary access off Rising Hill Drive (southwestern side of the Project) will provide an emergency only access. The Project will incorporate 382 off-street parking spaces, 98 spaces will be covered, 172 open/uncovered parking spaces, and 112 garage spaces. The City requires a 50% shade requirement for parking spaces, this is achieved with covered spaces and by shade from trees. The required shade for the Project is 15,471 square feet (S.F.) and total shade provided is 19,558 S.F. Approximately 27% percent of the Project site will be landscaped with a water-efficient plant palate; the City's minimum landscaping requirement for the Multi-Family 3 Zone is 10%. Reference **Figure 4, *Landscape Plan***.

The site will be mass graded with approximately 53,000 cubic yards of cut and 53,000 cubic yards of fill, resulting in a balanced site with no soils being exported off site. The proposed Project will connect into an existing 12 inch Eastern Municipal Water District sewer line located in (old) Date Street, currently serving existing development in the vicinity of the Project site.

2. **Description of the Project Site:** The Project site is undeveloped. The Project site is disturbed and appears to be routinely maintained for weed abatement purposes. The site is relatively flat with a gentle slope from northwest to southeast. Reference **Figure 5, *Aerial Photo***.

The elevation on the Project site ranges from 1,118 feet above mean sea-level (AMSL) to 1,223 AMSL. The Project area is located on irregular and semi-steep slopes that partially flatten on the highest portion of the property boundary. The Project area slopes down and flattens on the northwest portion of the Project area. The Project site contains three different habitat types: ruderal/disturbed, disturbed coastal sage scrub, and coastal sage scrub. The current runoff is a sheet flow condition that flows over terrain that is sparsely covered with natural vegetation. The natural terrain slopes from approximately 10% to a maximum of 50%. The existing terrain flows into the adjacent communities and properties and will eventually surface flow into the existing Winchester Road Storm Drain. The Winchester Road Storm Drain is a 54-inch concrete pipe that extends along Winchester Road and ultimately terminates into the existing golf course north of Murrieta Hot Springs Road. The 54-inch storm drain will ultimately discharge flows into Tucalota Creek.

3. **Land Uses:** The proposed Project site is vacant/undeveloped.

   North: Commercial (C)
   South: Single Family Residential (SFR) and Multiple Family Residential (MFR)
   East: Commercial Retail (CR) in the County of Riverside
   West: Commercial (C)

4. **General Plan Designation:**

   Existing: Commercial (C)
   Proposed: Multiple Family Residential (MFR)
   Reference **Figure 6, *GPA Exhibit***

5. **Zoning:**

   Existing: Neighborhood Commercial (NC), Single Family Residential (SFR)
   Proposed: Multi-Family 3 (MF-3)
   Reference **Figure 7, *ZC Exhibit***

6. **Other Agencies whose approval may be required:** The developer must file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) to be enforced by the San Diego Regional Water Quality Control Board (SDRWQCB) for a Construction General Permit to comply with the National Pollution Discharge Elimination System (NPDES) requirements.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

DETERMINATION

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Aaron Rintamaki Signature	11-27-19 Date
Aaron Rintamäki Project Planner	

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance.
10) Initial Study Source List

    Numbers that precede the sources below are used in the answers to the CEQA checklist questions in the following section of the Initial Study to represent the sources.

    1) City of Murrieta, *Murrieta General Plan 2035*, adopted July 19, 2011 https://www.murrietaca.gov/departments/planning/general.asp (Accessed February 2019)
    2) City of Murrieta, *Final Environmental Impact Report Murrieta General Plan 2035,* certified July 19, 2011 https://www.murrietaca.gov/departments/planning/general.asp (Accessed February 2019)
    3) *General Biological Assessment and Western Riverside County MSHCP Consistency Analysis for Promontory Point APN 913-210-005, 006, 007, 010, 011, 012, 013, 032, 033, 034 & 035 County of Riverside, California,* prepared by Hernandez Environmental Services, 1-2019 (**Appendix C**)
    4) City of Murrieta Zoning Map. Adopted June 17, 2014 http://www.murrietaca.gov/civicax/filebank/blobdload.aspx?BlobID=6702 (Accessed February 2019)
    5) City of Murrieta General Plan Map. Adopted July 19, 2011 http://www.murrietaca.gov/civicax/filebank/blobdload.aspx?BlobID=6702 (Accessed February 2019)

6) Google Maps www.google.com/maps (Accessed February 2019)
7) *Project Plans,* 1-2019 (**Appendix L**)
8) City of Murrieta, Municipal Code http://library.amlegal.com/nxt/gateway.dll/California/murrieta_ca/murrietacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:murrieta_ca (Accessed February 2019)
9) *Map My County* (**Appendix A**)
10) California Codes https://leginfo.legislature.ca.gov/faces/codes.xhtml (Accessed February 2019)
11) MHSR Apartments Air Quality and Greenhouse Gas Impact Study, City of Murrieta, CA prepared by MD Acoustics, LLC, dated February 26, 2019 (*AQ/GHG Impact Study*, **Appendix B**)
12) *CEQA Guidelines* http://resources.ca.gov/ceqa/ (Accessed February 2019)
13) *Phase 1 Cultural Resources Assessment for the Multi-Family Housing Project on 8.37 Acres in the City of Murrieta, Riverside County, California*, prepared by Bio Cultural, 10-2019 (**Appendix D1**)
14) *MHSR 235 Townhome Multifamily Residential Development – CEQA Energy Review, City of Murrieta, CA*, prepared by MD Acoustics, March 9, 2019 (*Energy Report*, **Appendix M**)
15) *Revised Preliminary Geotechnical Investigation - Proposed Multi-Family Residential Development, Northeast of Rising Hill Drive and Bahama Way, City of Murrieta,* prepared by South Shore Testing & Environmental, January 29, 2019 (*Geo Investigation*, **Appendix E1**)
16) *Paleontological Resources Assessment Report*, prepared by CRMTech, March 11, 2019 (*PRA*, **Appendix D3**)
17) *Phase I Environmental Site Assessment of a Proposed Multi-Family Residential Development Northeast of Rising Hill Drive and Bahama Way, Murrieta,* prepared by South Shore Testing & Environmental, April 3, 2018 (*Phase I ESA*, **Appendix F**)
18) Murrieta Valley Unified School District website https://www.murrieta.k12.ca.us/ (Accessed January 2019)
19) Temecula Valley Unified School District website https://www.tvusd.k12.ca.us/ (Accessed January 2019)
20) California Environmental Protection Agency. *Cortese List Data Resources.* 2017. https://calepa.ca.gov/sitecleanup/corteselist/ (Accessed February 2019)
21) California State Water Resources Control Board. *GeoTracker.* 2015. https://geotracker.waterboards.ca.gov/ (Accessed February 2019)
22) Riverside County Airport Land Use Commission, *French Valley Airport Land Use Compatibility Plan*, amended 2011 http://www.rcaluc.org/Portals/0/15%20-%20Vol.%201%20French%20Valley%20Amd%202011.pdf?ver=2016-08-15-151151-090 (Accessed February 2019)
23) California Building Code https://up.codes/viewer/california/ca-building-code-2016-v1 (Accessed January 2019)
24) California Fire Code https://archive.org/details/gov.ca.bsc.title24.2016.09 (Accessed January 2019)
25) *Project Specific Water Quality Management Plan, Murrieta Apartments,* prepared by JLC Engineering and Consulting, Inc., 8-21-2019 (**Appendix G1**)
26) Preliminary Drainage Study for Murrieta Apartments, prepared by JLC Engineering and Consulting, Inc., 10-11-2019 (**Appendix G2**)
27) FEMA https://msc.fema.gov/portal/home (Accessed January 2019)
28) Rancho California Water District's 2015 Urban Water Management Plan https://www.ranchowater.com/DocumentCenter/View/2023/2015-UWMP---June-2016?bidId= (Accessed February 2019)
29) Eastern Municipal Water District's 2015 Urban Water Management Plan https://www.emwd.org/home/showdocument?id=1506 (Accessed January 2019)
30) *MHSR Apartments Noise Impact Study, City of Murrieta*, prepared by MD Acoustics, LLC, dated 1-15-19 (**Appendix H**)
31) State of California Department of Finance http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/ (Accessed February 2019)
32) Phone conversation with Lori Noorigian, Coordinator of Facilities, Murrieta Valley Unified School District (MVUSD), 951-696-1600 ext. 1080, January 31, 2019
33) Murrieta Valley Unified School District, *Residential Development School Fee Justification Study*, dated March 30, 2018
34) *MHSR Apartments Traffic Impact Analysis, City of Murrieta, California*, prepared by TJW Engineering, Inc., dated 11-22-19 (**Appendix I**)

35) Senate Bill 743 https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743 (Accessed January 2019)
36) *Tribal Cultural Resources Letters*, prepared by City of Murrieta, 2-21-2019 (with Tribal responses) (**Appendix D2**)
37) Assembly Bill 52 http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB52 (Accessed February 2019)
38) Senate Bill 18 http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200320040SB18 (Accessed February 2019)
39) *Water Availability Multi-Family Residential Complex*, prepared by Rancho California Water District, 9-20-2018 (**Appendix J**)
40) *SAN 53 - Will Serve - Rising Hill Apartments,* prepared by Eastern Municipal Water District, 12-10-2018 (**Appendix K**)
41) *Fire Hydrant Map and Flow Request*, prepared by Rancho California Water District, 1-9-19 (**Appendix N**)
42) Southern California Edison https://www.edison.com/content/dam/eix/documents/investors/events-presentations/eix-february-2018-business-update.pdf (Accessed March 2019)
43) Energy.ca.gov Website https://efiling.energy.ca.gov/getdocument.aspx?tn=223244 (Accessed March 2019)
44) CalRecycle – El Sobrante Landfill https://www2.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Document/ (Accessed March 2019)
45) *Onsite Stormwater Infiltration System Investigation Proposed Multi-Family Residential Development – MHS-98, LLC,* prepared by South Shore Testing and Environmental, 2-8-2018 (**Appendix E2**)
46) *ALUC Agenda*, prepared by Airport Land Use Commission, 7-11-19 (**Appendix O**)
47) *Response to Rising Hill MHS 98, 3rd REVIEW CYCLE COMMENTS, CASE /VO. GP-2018-1762; ZC-2018-1763, DP-2018-1761, City of Murrieta Development Services Department*, prepared by LGC – GEO Environmental, Inc., 9-18-19 (**Appendix E3**)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
1. AESTHETICS: Except as provided in Public Resources Code Section 21099, would the Project:				
a) Have a substantial adverse effect on a scenic vista? (References 1, 2, 3, 4, 5, 6)				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (References 1, 2, 6)				**X**
c) 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? (References 7)			**X**	
d) Create a new source of substantial light or glare, which would adversely affect daytime or nighttime views in the area? (References 6, 7, 8)			**X**	

a) *No Impact or Does Not Apply.* The City defines scenic vistas generally as views of undisturbed natural lands exhibiting a unique or unusual feature that comprises an important or dominant portion of the view shed. The Santa Ana Mountains and the Santa Rosa Plateau located west of the City are the most dominant visual features in the area. To a lesser extent, the Sedco Hills along the northern portion of the City can be seen, as well as the Agua Tibia Mountain to the southeast can be seen (in the far distance).

The Project site is located southwesterly of the intersection of Winchester Road and Murrieta Hot Springs Road. The Project site and is currently undeveloped and zoned for commercial and single-family use. The Project site is bordered by a construction site to the north, a construction site to the east, a commercial development to the south, and a multi-family residential development to the west. The Project site is disturbed and has been routinely maintained for weed abatement purposes. The Project site is relatively flat with a gentle slope from northwest to southeast. The elevation on the Project site ranges from 1,118 feet above mean sea-level (AMSL) to 1,223 AMSL.

The Project site contains three different habitat types: ruderal/disturbed, disturbed coastal sage scrub, and coastal sage scrub.

Based upon the General Plan definition of scenic vista, the Project does not display any of the characteristics of a scenic vista. The Project will not have a substantial adverse effect on a scenic vista. **No impact** will occur.

b) *No Impact or Does Not Apply.* There are no officially-designated State Scenic Highways traversing the City, but Interstate 15 (I-15) is defined as an *Eligible* State Scenic Highway. This means I-15 has a potential to become officially-designated by the California Department of Transportation (Caltrans). However, the City would be required to apply for designation, adopt a Corridor Protection Plan, and be approved by the State for I-15 to receive official State Scenic Highway designation. The Project site is located 1.9 miles northeast of I-15 and is separated from the interstate by urban development. Therefore, the Project site is neither visible from nor offers views to I-15.

Interstate 215 (I-215) is designated by Riverside County as an Eligible County Scenic Highway, but the Project site is located more than two miles east of I-215 and is separated from the interstate by urban development. Therefore, the Project site is neither visible from nor offers views to I-215. In the absence of any officially-designated State Scenic Highways in the City, the proposed Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. **No impact** will occur.

c) *Less Than Significant Impact.* There will be a common architectural theme throughout the Project which will be reflected in the use of colors, materials, roof elements, massing, detailing, and lighting. Buildings will range in height from approximately 37' to 48'. The Project will utilize stucco, stone veneer, decorative tiles, shutters, lighting fixtures, and wrought iron.

The proposed improvements will change the visual character of the Project site. However, the proposed improvements would be compatible in scale with the existing development in the vicinity of the Project site. The Project site is vacant and bordered by Commercial uses to the north, Single Family Residential and Multiple Family Residential uses to the south, Commercial Retail uses to the east, and Commercial uses to the west. The proposed Project consists of the development of a multi-family residential use within and adjacent to areas already developed and/or zoned for commercial and residential uses and would continue the existing pattern of development. Therefore, the proposed Project would integrate uniformly with the established and planned commercial and residential uses. General Plan designation for the Project site is "Commercial," and the site is zoned Community Commercial (CC) and Single Family Residential (SFR). The Project proposes to change the General Plan Land Use designation of the site to MFR (Multiple-Family Residential) and the zoning classification to MF3 (Multi-Family Residential)

The Project site consists of both man-made and natural slopes. Man-made slopes occur on the southerly, westerly and easterly portions of the Project site. Approximately 5.09 acres of the site are man-made and 3.28 acres of the site are natural slope. The very steep portion of the property (50%) is actually a deep erosional gully, which is a result of prior motorcycling activity.

An in depth analysis of the Project's relationship to applicable portions of Section 16.24 (Hillside Development) of the City's Development Code is contained in Section 11.b (Land Use and Planning) of this Initial Study. Based on the analysis in this Section, any impacts pertaining to the Hillside Ordinance are considered **less than significant**.

The Project would not introduce structures or other built environment elements that would contrast with the existing development of the vicinity of the Project site. Furthermore, the design of the Project complies with all zoning requirements, as amended (i.e. height restrictions, setbacks, lot coverage, etc.).

Therefore, the Project will not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Lastly, the Project is not located in an urbanized area. The area could be classified as "urbanizing" or even more of a "suburban" land pattern. Therefore, the Project will not conflict with applicable zoning and other regulations governing scenic quality. Any impacts will be **less than significant**.

d) *Less Than Significant Impact.* Currently, no lighting sources are located within the Project limits. New development would result in new lighting sources such as parking lot lighting, interior and exterior building lighting (included for safety purposes), vehicle headlights, and illuminated signage. These new sources of light would be visible from neighboring development and along adjacent roadways. Adherence to provisions of *Title 16*, *Section 16.18.100-Lighting* of the Murrieta Development Code (MDC), which requires that exterior lighting be directed downward, shielded, and confined to the subject parcel, is required for all development in the City. Additionally, the selection of building materials and colors, subject to City design review, would reduce the potential for architectural glare. Furthermore, incorporation of Project site perimeter and streetscape landscaping would serve to further shield surrounding properties from light and/or glare generated on site.

The Project site is located approximately 20.5 miles northwest of the Mount Palomar Observatory. The intent of the City's Mount Palomar Lighting Standards (*Title 16*, *Section 16.18.110*) is to restrict the use of certain light fixtures emitting into the night sky undesirable light rays that have a detrimental effect on astronomical observation and research. All development within 30 miles of Palomar Observatory is required to comply with the general, lamp source, and shielding requirements cited in the MDC. The Project site is located in an area that is developed with commercial and residential uses. The amount and level of lighting would generally be similar to that which currently exists in the Project vicinity. Because Project lighting would be designed, installed, and operated consistent with the provisions detailed in the MDC, the proposed Project would have a **less than significant impact** on daytime or nighttime views in the Project area.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact or Does Not Apply**
2. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (References 5, 9)				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? (References 2, 4, 5)				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (References 10)				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use? (References 10)				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (Reference 2, 4, 5, 9, 10)				**X**

a) *No Impact or Does Not Apply.* The Project site is undeveloped land that is covered in sparse ruderal (weedy) vegetation with patches of bare ground and is designated Farmland of Local Importance and Urban-Built Up Land. Therefore, the proposed Project would not affect any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. **No impacts** will occur.

b) *No Impact or Does Not Apply.* The Project site is currently undeveloped and zoned Neighborhood Commercial and Single Family Residential. The surrounding land has a land use designation of Commercial Retail and is developed with commercial, multi-family residential and single family residential uses. The Project site and the land that surrounds it is not intended for agricultural uses. Additionally, there are no Williamson Act contracts in the City. **No impact** related to agricultural zoning or agricultural resources will occur.

c) *No Impact or Does Not Apply.* The Project site is not located in forest land, timberland or timberland zoned for Timberland Production. Public Resources Code Section 12220(g) identifies forest land as *land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.* The Project site and the land that surrounds it is not currently being defined, managed, or used as forest land as identified in Public Resources Code Section 12220(g). Therefore, **no impacts** will occur.

d) *No Impact or Does Not Apply.* The Project site will not result in the loss of forest land or in the conversion of forest land to non-forest use. See response to Checklist Question 2(c). **No impacts** will occur.

e) *No Impact or Does Not Apply.* As outlined in the response to Checklist Questions 2(a) through 2(c) above, the proposed Project site is not currently used for agricultural or farmland purposes, nor is it an area zoned or planned for agricultural uses. Development of the proposed Project would not result in the conversion of farmland or timberland to a non-agricultural or non-forest use. **No impacts** will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
3. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan? (References 11)			**X**	
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			**X**	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
quality standard? (References 11)				
c) Expose sensitive receptors to substantial pollutant concentrations? (References 11)			**X**	
d) Result in other emissions (such as those leading to odors) affecting a substantial number of people? (References 11)			**X**	

All the Tables in this Section are from the *Air Quality and Greenhouse Gas Impact Analysis*, unless stated otherwise.

a) *Less Than Significant Impact*. The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed Project includes the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed Project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed Project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed Project is inconsistent, the lead agency may consider Project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed Project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

1. Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2. Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following analysis.

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

Based on the air quality modeling analysis contained in the *AQ/GHG Impact Study*, neither short-term construction impacts, nor long-term operations will result in significant impacts based on the SCAQMD regional and local thresholds of significance.

Therefore, the proposed Project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

- Criterion 2 - Exceed Assumptions in the AQMP.

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed Project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed Project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy, prepared by SCAG, 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road

to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this Project, the City of Murrieta Land Use Plan defines the assumptions that are represented in the AQMP.

The proposed Project is currently zoned as Neighborhood Commercial and Single Family Residential and classified as General Commercial in the City of Murrieta General Plan. The Project includes a Change of Zone to Multi-family Residential 3 and a General Plan Amendment to Multi-family Residential. The Project proposes to construct 234 multiple-family detached residential units, which would generate less vehicle trips than if the Project were to propose commercial land uses consistent to the existing commercial land use designations. With the general plan amendment, the proposed development would be consistent with the General Plan land use designation. Therefore, with the general plan amendment, the proposed Project would not result in an inconsistency with the land use designation in the City's General Plan. Therefore, the proposed Project is not anticipated to exceed the AQMP assumptions for the Project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed Project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a **less than significant impact** will occur.

b) *Less Than Significant Impact.* The Project site is located in the South Coast Air Basin (Basin). State and federal air quality standards are often exceeded in many parts of the Basin. A discussion of the Project's potential short-term construction impacts, and long-term operational impacts is provided below.

Construction

Typical emission rates from construction activities were obtained from CalEEMod Version 2016.3.2 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2011 are computer programs generated by California Air Resources Board (CARB) that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using CalEEMod, the peak daily air pollutant emissions were calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions.

The proposed Project is to be operational in 2020; therefore, construction is estimated to start no sooner than July 2019 and end by mid-December 2019. The phases of the construction activities which have been analyzed below are: 1) grading, 2) building, 3) paving, and 4) architectural coating.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as:

- Application of water or chemical stabilizers to disturbed soils;
- Managing haul road dust by application of water;
- Covering haul vehicles;
- Restricting vehicle speeds on unpaved roads to 15 mph;
- Sweeping loose dirt from paved site access roadways;
- Cessation of construction activity when winds exceed 25 mph and establishing a permanent; and
- Stabilizing ground cover on finished sites.

In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 8.37 gross acres (7.8 net acres)).

The Project will not export more than 5,000 cubic yards of material a day; therefore, a Fugitive Dust Control Plan or Large Operation Notification will not be required.

Lastly, SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures is used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 is required.

Regional Construction Emissions

The following CEQA significance thresholds for construction emissions are established for the Basin:

- 75 pounds per day (lbs./day) of Volatile organic compounds (VOC);
- 100 lbs./day of Nitrogen Oxides (NO_x);
- 550 lbs./day of Carbon monoxide (CO);
- 150 lbs./day of Particles that are less than 10 micrometers in diameter (PM_{10});
- 55 lbs./day of Particles that are less than 2.5 micrometers in diameter ($PM_{2.5}$); and
- 150 lbs./day of Sulfur dioxide (SO_2).

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under SCAQMD guidelines.

The latest version of CalEEMod was used to estimate the onsite and offsite construction emissions. The emissions incorporate Rule 402 and 403. Rule 402 and 403 (fugitive dust) are not considered mitigation measures as the Project by default is required to incorporate these rules during construction.

The construction emissions for the Project would not exceed the SCAQMD's daily emission thresholds at the regional level as demonstrated in **Table 3-1, *Regional Significance – Construction Emissions (pounds/day)***, and therefore would be considered less than significant.

Table 3-1
Regional Significance - Construction Emissions (pounds/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Grading						
On-Site[1]	2.58	28.35	16.29	0.03	3.95	2.60
Off-Site[2]	0.08	0.05	0.67	0.00	0.17	0.05
Total	**2.66**	**28.40**	**16.96**	**0.03**	**4.12**	**2.64**
Building Construction						
On-Site[1]	2.36	21.08	17.16	0.03	1.29	1.21
Off-Site[2]	1.78	8.71	13.98	0.05	3.67	1.04
Total	**4.14**	**29.79**	**31.14**	**0.08**	**4.96**	**2.25**
Paving						
On-Site[1]	1.61	14.07	14.65	0.02	0.75	0.69
Off-Site[2]	0.08	0.05	0.60	0.00	0.17	0.05
Total	**1.69**	**14.11**	**15.26**	**0.02**	**0.92**	**0.74**
Architectural Coating						
On-Site[1]	58.10	1.68	1.83	0.00	0.11	0.11
Off-Site[2]	0.29	0.17	2.26	0.01	0.63	0.17
Total	**58.39**	**1.86**	**4.09**	**0.01**	**0.74**	**0.28**
Total of overlapping phases[3]	**64.22**	**45.76**	**50.49**	**0.11**	**6.62**	**3.27**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2.
[1] On-site emissions from equipment operated on-site that is not operated on public roads.
[2] Off-site emissions from equipment operated on public roads.
[3] Construction, architectural coatings and paving phases may overlap.

Operations

Operational or long-term emissions occur over the life of the Project. Both mobile and area sources generate operational emissions. Area source emissions arise from consumer product usage, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile source emissions from motor vehicles are the largest single long-term source of air pollutants from the operation of the Project. Small amounts of emissions would also occur from area sources such as the consumption of natural gas for heating, hearths, from landscaping emissions, and consumer product usage. The operational emissions were estimated using the latest version of CalEEMod.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed Project. The vehicle trips associated with the proposed Project are based upon the trip generation rates give in the Project-specific Traffic Impact Analysis (*TIA,* **Appendix I**) which uses the ITE 10th Trip Generation Manual trip generation rate of 7.32 trips per dwelling unit.

The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less and the CalEEMod model default was utilized as the new model takes this rule into account.

Energy Usage

2016.3.2 CalEEMod defaults were utilized.

Regional Operational Emissions

The daily operational emissions significance thresholds for the Basin are as follows:

- 55 lbs./day of VOC;
- 55 lbs./day of NO_x;
- 550 lbs./day of CO;
- 150 lbs./day of PM_{10};
- 55 lbs./day of $PM_{2.5}$; and
- 150 lbs./day of SO_2.

The operations-related criteria air quality impacts created by the proposed Project have been analyzed through the use of CalEEMod model. The operating emissions were based on year 2020, which is the anticipated opening year for the Project. The summer and winter emissions created by the proposed Project's long-term operations were calculated and the highest emissions from either summer or winter are summarized in **Table 3-2, *Regional Significance – Unmitigated Operational Emissions (pounds/day)***.

Table 3-2
Regional Significance - Unmitigated Operational Emissions (pounds/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	**NOx**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area Sources[1]	6.25	3.78	21.21	0.02	0.40	0.40
Energy Usage[2]	0.11	0.94	0.40	0.01	0.08	0.08
Mobile Sources[3]	3.82	27.45	46.10	0.18	12.86	3.55
Total Emissions	**10.18**	**32.17**	**67.71**	**0.21**	**13.33**	**4.02**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consists of emissions from on-site natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust.

Table 3-2 provides the Project's unmitigated operational emissions. **Table 3-2** shows that the Project does not exceed the SCAQMD daily emission threshold and regional operational emissions are considered to be less than significant.

Based on this analysis, implementation of the Project will not 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. Any impacts will be **less than significant**.

c) *Less Than Significant Impact*. In order to determine if the proposed Project would expose sensitive receptors to substantial pollutant concentrations, an analysis of localized emissions should be conducted. The following includes an analysis of localized significance thresholds (localized construction emissions, operational emissions), construction-related toxic air contaminant impact, and CO Hot Spot Emissions.

Localized Significance Thresholds (LST)

SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds." CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain, in its project design features or its mitigation measures, the following parameters:

- The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
- The maximum number of acres disturbed on the peak day.
- Any emission control devices added onto off-road equipment.
- Specific dust suppression techniques used on the day of construction activity with maximum emissions.

Construction LST

The construction equipment showing the equipment associated with the maximum area of disturbance is shown in **Table 3-3, *Construction Equipment Assumptions***.

Table 3-3
Construction Equipment Assumptions

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Excavators	1	0.5	0.5
	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Tractors/Loaders/Backhoes	3	0.5	1.5
Total Per Phase				3.0

As shown in **Table 3-3**, the maximum number of acres disturbed in a day would be 3 acres.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NO_x, PM_{10}, and $PM_{2.5}$ from the proposed Project could result in a significant impact to the local air quality. The emission thresholds were based on the Temecula Valley source receptor area (SRA 26) and a disturbance of 2 acres per day (to be conservative) at a distance of 25 meters (82 feet). According to LST methodology, any receptor located closer than 25 meters should be based on the 25 meter threshold. The closest receptors are adjacent to the south and west of the site.

The data provided in **Table 3-4, *Localized Significance – Construction***, shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, local air quality impacts occurring from construction of the proposed Project would be less than significant.

Table 3-4
Localized Significance – Construction

Phase	On-Site Pollutant Emissions (pounds/day)			
	NO_x	**CO**	**PM_{10}**	**$PM_{2.5}$**
Grading	28.35	16.29	3.95	2.60
Building Construction	21.08	17.16	1.29	1.21
Paving	14.07	14.65	0.75	0.69
Architectural Coating	1.68	1.83	0.11	0.11
Total of overlapping phases	36.83	33.65	2.15	2.02
SCAQMD Threshold for 25 meters (82 feet) or less[1]	**234**	**1,100**	**7**	**4**
Exceeds Threshold?	No	No	No	No

Notes:
[1] The nearest sensitive receptors are located adjacent to the south of the Project site, however according to LST methodology any receptor located closer than 25 meters should be based on the 25 meter threshold.

Operational LST

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed Project is a residential project and does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted. No operational LST impacts will occur.

Construction-Related Toxic Air Contaminant Impact

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed Project. The Office of Environmental Health Hazard Assessment (OEHHA) has issued the Air Toxic Hot Spots Program Risk Assessment Guidelines and Guidance Manual for the Preparation of Health Risk Assessments, February 2015 to provide a description of the algorithms, recommended exposure variates, cancer and noncancer health values, and the air modeling protocols needed to perform a health risk assessment (HRA) under the Air Toxics Hot Spots Information and Assessment Act of 1987. All substances that are evaluated for cancer risk and/or noncancer acute, 8-hour, and chronic health impacts. In addition, identify any multipathway substances that present a cancer risk or chronic noncancer hazard via noninhalation routes of exposure.

Given the relatively limited number of heavy-duty construction equipment and construction schedule, the proposed Project would not result in a long-term substantial source of toxic air containment emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed Project.

CO Hot Spot Emissions

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards.

To determine if the proposed Project could cause emission levels in excess of the CO standards, a sensitivity analysis is typically conducted to determine the potential for CO “hot spots” at a number of intersections in the general Project vicinity. Because of reduced speeds and vehicle queuing, “hot spots” potentially can occur at high traffic volume intersections with a Level of Service E or worse.

Micro-scale air quality emissions have traditionally been analyzed in environmental documents where the air basin was a non-attainment area for CO. However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no “hot spots” anywhere in the Basin, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in Riverside County. If the worst-case intersections in the Basin have no “hot spot” potential, any local impacts will be below thresholds.

The traffic study showed that the highest peak hour intersection volume is 2,180 trips per day for the existing plus ambient plus Project plus cumulative project PM scenario. The 1992 Federal Attainment Plan for Carbon Monoxide showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. The volume of traffic at Project buildout with cumulative projects would be well below 100,000 vehicles and below the necessary volume to even get close to causing a violation of the CO standard. Therefore, no CO “hot spot” modeling was performed, and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed Project.

Based on this analysis, implementation of the Project will not expose sensitive receptors to substantial pollutant concentrations. Any impacts will be **less than significant**.

d) *Less Than Significant Impact.* Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Diesel exhaust and VOCs would be emitted during construction of the Project, which are objectionable to some; however, emissions would disperse rapidly from the Project site and therefore should not reach an objectionable level at the nearest sensitive receptors. Due to the short-term nature and limited

amounts of odor producing materials being utilized, impacts related to odors would occur during construction of the proposed Project will be considered less than significant.

SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the Project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Potential sources that may emit odors during the on-going operations of the proposed Project would include odor emissions from trash storage areas. Due to the distance of the nearest receptors from the Project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed Project.

Based on this analysis, implementation of the Project will not result in other emissions (such as those leading to odors) affecting a substantial number of people. Any impacts will be **less than significant**.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact or Does Not Apply**
4. BIOLOGICAL RESOURCES: Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any identified candidate, sensitive, listed, or special status species in local or regional plans or policies? (References 3)		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (References 3)		**X**		
c) 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? (References 3)				**X**
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (References 3)		**X**		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (References 2, 3, 8)		**X**		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (References 3)		**X**		

a) *Less Than Significant with Mitigation Incorporated.* Based on a Project-specific *General Biological Assessment and Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis* (*BRA/MSHCP*, **Appendix C**), the Project site is bordered by a construction

site to the north, a construction site to the east, a commercial development to the south, and a multi-family residential development to the west. The Project site is disturbed and has been routinely maintained for weed abatement purposes. The Project site is relatively flat with a gentle slope from northwest to southeast. The elevation on the Project site ranges from 1,118 feet above mean sea-level (AMSL) to 1,223 AMSL.

The Project site contains three different habitat types: ruderal/disturbed, disturbed coastal sage scrub, and coastal sage scrub.

Ruderal/Disturbed

The Project site contains approximately 2.97 acres of ruderal/disturbed areas. Ruderal habitat is found in heavily disturbed areas. These habitat types are dominated by mostly non-native species of plants; however, some native species are present. These areas include roadsides, graded or disked fields, and manufactured slope areas on in-fill. Dominant vegetation observed in this habitat type includes slim oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), foxtail chess (*Bromus madritensis*) foxtail barely (*Hordeum murinum*), mustard (*Brassica tournefortii*), black mustard (*Brassica nigra*), common fiddleneck (*Amsinckia intermedia*), red maids (*Calandrinia menziesii*), California sun cup (*Camissoniopsis bistorta*), tocalote (*Centaurea melitensis*), lambs quarters (*Chenopodium album*), heron bill (*Erodium cicutarium*), crown daisy (*Glebionis coronaria*), sunflower (*Helianthus annus*), stink net (*Oncosiphon piluliferum*), desert bells (*Phacelia campanularia*), Russian thistle (*Salsola tragus*), and London rocket (*Sisymbrium irio*).

Disturbed Coastal Sage Scrub

The Project site contains approximately 2.66 acres of disturbed coastal sage scrub. This habitat has plant species associated with coastal sage scrub but has been so heavily disturbed by human activities, that the coastal sage scrub species are not dominant. This habitat contains a high density of non-native vegetation mixed with coastal sage scrub. Species observed in this habitat type include California buckwheat (*Eriogonum fasiculatum*), brittlebush (*Encelia fairnosa*), California sage (*Artemisia californica*), tree tobacco, mustard, brome, foxtail barely, stink net, sunflower, and black mustard.

Coastal Sage Scrub

The Project site contains approximately 2.74 acre of areas dominated by coastal sage scrub. Dominant species observed in this habitat type include California buckwheat, California sage, brittlebush, and white sage (*Salva apiana*).

General wildlife species documented on the Project site or within the vicinity of the site include red-tailed hawk (*Buteo jamaicensis),* house finch (*Carpodacus mexicanus),* turkey vulture (*Cathartes aura),* American crow (*Corvus brachyrhynchos),* black-tailed jackrabbit (*Lepus californicus),* racoon (*Procyon lotor),* western fence lizard (*Sceloporus occidentalis*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), Anna's hummingbird (*Calypte anna*), and western kingbird (*Tyrannus verticalis*).

According to the CNDDB, a total of 66 sensitive species of plants and 58 sensitive species of animals have the potential to occur on or within the vicinity of the Project area. These include those species listed or candidates for listing by the U. S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS). All habitats with the potential to be used by sensitive species were evaluated during the site visit and a determination has been made for the presence or probability of presence within this report. This section will address those species listed as Candidate, Rare, Threatened, or Endangered under the state and federal endangered species laws or directed to be evaluated under the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP).

According to the *BRA/MSHCP*, the following sensitive plant resources have the potential to be located on the Project site:

- Plummer's mariposa-lily (*Calochortus plummerae*); and
- Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*).

According to the *BRA/MSHCP*, the following sensitive animal resources have the potential to be located on the Project site:

- The Cooper's hawk (*Accipiter cooperii*);
- California glossy snake (*Arizona elegans occidentalis);*
- Bell's sage sparrow (*Artemisiospiza belli belli*);
- Orange-throated whiptail (*Aspidoscelis hyperythra*);
- Coastal whiptail (*Aspidoscelis tigris stejnegeri);*
- Coast horned lizard (*Phrynosoma blainvillii); and*
- Coastal California gnatcatcher (*Polioptila californica californica*).

According to the *BRA/MSHCP*, this species is covered by the Western Riverside MSHCP and is considered adequately conserved. The Project site is not located within designated federal critical habitat.

To reduce impacts related to the removal of coastal sage scrub and/or the above referenced sensitive plant and animal resources from the Project site, the MSHCP includes a Local Development Mitigation Fee to assist in providing revenue to acquire and preserve vegetation communities and natural areas within Riverside County which are known to support populations of threatened, endangered or key sensitive populations of plant and wildlife species, as detailed in **Mitigation Measure MM BIO-1**. In addition, **Mitigation Measure MM BIO-2** requires a preconstruction survey prior to any ground disturbing activities or vegetation removal.

MM BIO-1 ***Prior to issuance of grading permits, the Project proponent shall provide evidence to the City that payment of the Western Riverside County Multiple Species Habitat Conservation Plan Mitigation Fee has been made for the development of the Project or portions thereof to be constructed within the City and County (per Riverside County Ordinance 810.2). This measure shall be implemented to the satisfaction of the City Planning Department.***

MM BIO-2 ***Three days prior to any ground disturbing activities or vegetation removal, a qualified biological monitor should conduct a preconstruction survey to identify any sensitive biological resources to flag for avoidance. Any reptile species that may be present within the Project area shall be relocated outside of the impact areas. In addition, any plant species that may be present within the Project area shall be relocated outside of the impact areas.***

The Project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Project site is 'Not A Part' of cell criteria under the MSHCP. It is not located within a Cell, Cell Group or Sub Unit of the Southwest Area Plan. Therefore, conservation has not been prescribed for this site. Additionally, the Project site is not located within the Narrow Endemic Plant Species Survey Area (NEPSSA). Based on Figures 6-2 (Criteria Area Species Survey Area), 6-3, (Amphibian Species Survey Area) and 6-5 (Mammal Species Survey Area) of the MSHCP, the site is not located in an area where additional surveys are needed for certain species and/or in conjunction with MSHCP implementation in order to achieve coverage for these species. Although the site is located within the Burrowing Owl Survey Area (Figure 6-4) of the MSHCP, an independent assessment was made of the presence of burrowing owl habitat on the Project site, including a 150-meter (approximately 500 foot) buffer zone around the Project boundary based on the Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (March 29, 2006). The methodology used to prepare the burrowing owl habitat assessment involved conducting a complete visual and walk-over field survey to determine if the site contained either suitable habitat or was occupied.

The Project site is not occupied by the burrowing owl (*Athene cunicularia*) and also does not provide suitable or required habitats for this species. For these reasons, focused burrowing owl surveys are not recommended at this site. However, in accordance with the MSHCP 30-day Pre-Construction Burrowing Owl Survey Guidelines (revised August 17, 2006), an additional pre-construction survey for burrowing owl is required within 30 days prior to beginning of site grading to determine if site conditions change (e.g., establishment of ground squirrel burrows) and result in suitable habitat. **Mitigation Measure MM BIO-3** requires that a pre-construction burrowing owl survey is conducted prior to any ground-disturbing activities.

MM BIO-3 ***Prior to the issuance of any grading permit, a qualified biologist shall conduct a pre-construction burrowing owl/Initial Take and Avoidance Survey within 30 days prior to the beginning of Project construction to determine if the Project site contains suitable burrowing owl habitat and to avoid any potential impacts to the species. The survey shall include 100 percent coverage of the Project site. If the survey reveals no suitable habitat for burrowing owl is present, no further work in this regard is required.***

If active burrowing owl burrows are determined to be present, the burrow(s) shall be flagged and a 160-foot buffer will be created around the burrow(s) during the non-breeding season (September 1 to January 30) and a 250-foot buffer shall be created during the breeding season (February 1 to August 31). As determined by the City, the buffer limits may vary depending on burrow location and burrowing owl sensitivity to human activity. The buffer shall be sufficient to ensure that nesting behavior is not adversely affected by the construction activity. A monitoring report shall be prepared and submitted to the City for review and approval prior to reinitiating construction activities within the buffer area, and construction within the designated buffer area shall not proceed until written authorization is received from California Department of Fish and Wildlife (CDFW). The monitoring report shall summarize the results of the owl monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of the owl(s). Any relocation efforts must be coordinated with the CDFW. This measure shall be implemented to the satisfaction of the City Planning Department and the CDFW.

Implementation of **Mitigation Measure MM BIO-3** would reduce impacts to burrowing owls to **less than significant** levels.

Site development is expected to remove approximately 2.66 acres of disturbed coastal sage scrub and approximately 2.74 acre of areas dominated by coastal sage scrub. Development of the Project would not eliminate significant amounts of habitat for potentially occurring special-status plant or wildlife species, nor would it reduce population size of sensitive plant and/or wildlife species below self-sustaining levels on a local or regional basis. However, perimeter fencing and the on-site coastal sage scrub vegetation, could provide potential nesting sites for common native bird species protected under the Migratory Bird Treaty Act (MBTA) or the California Fish and Game Code (Sections 3503, 3503.5, and 3515), so removal of these on-site features could result in a significant impact to habitat of species protected by regulation. **Mitigation Measure MM BIO-4** requires that a pre-construction nesting bird survey be conducted prior to any ground-disturbing activities.

MM BIO-4 ***Vegetation removal shall be conducted during the non-nesting season for migratory birds to avoid direct impacts. The nesting season is between February 1 and September 15. A qualified biologist shall conduct a pre-construction nesting bird survey within three days prior to vegetation- or ground-disturbing activities if such activities are proposed during the nesting season (February 1 through September 15). The survey shall***

include 100 percent coverage of the Project site. If no active avian nests are found during survey, no further work in this regard is required.

If an active avian nest is discovered during survey, they shall be flagged and a 200-foot buffer shall be fenced around the nests. A biological monitor shall visit the site once a week during ground disturbing activities to ensure all fencing is in place and no sensitive species are being impacted. If such activities are delayed or suspended for more than seven days after the survey, the site shall be resurveyed. Should eggs or fledglings be discovered in any native nest, these resources cannot be disturbed until the young have hatched and fledged (matured to a stage that they can leave the nest on their own). Once the qualified biologist has determined that young birds have successfully fledged or the nest has otherwise become inactive, a monitoring report shall be prepared and submitted to the City for review and approval prior to reinitiating vegetation- and/or ground-disturbing activities within the buffer area. The monitoring report shall summarize the results of the nest monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of the young birds. This measure shall be implemented to the satisfaction of the City Planning Department.

Implementation of **Mitigation Measure MM BIO-4** will result in a **less than significant impact** to migratory birds in accordance with the MBTA and the California Fish and Game Code (Sections 3503, 3503.5, and 3515). With implementation of **Mitigation Measures MM BIO-1** through **MM BIO-4**, the proposed Project would have a **less than significant impact** on burrowing owls, nesting birds, and any other species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

b) *Less Than Significant with Mitigation Incorporated.* No natural watercourses or riparian vegetation/habitat of any kind are present on the Project site. As detailed in the Project-specific *BRA/MSHCP*, the Project site contains 2.66 acres of disturbed coastal sage scrub and 2.74 acre of areas dominated by coastal sage scrub. To reduce impacts related to the removal of coastal sage scrub from the Project site, the MSHCP includes a Local Development Mitigation Fee to assist in providing revenue to acquire and preserve vegetation communities and natural areas within Riverside County which are known to support populations of threatened, endangered or key sensitive populations of plant and wildlife species, as detailed in **Mitigation Measure MM BIO-1**. In addition, **Mitigation Measure MM BIO-2** requires a preconstruction survey prior to any ground disturbing activities or vegetation removal.

With implementation of **Mitigation Measure MM BIO-1** and **Mitigation Measure MM BIO-2**, impacts related to riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS would be reduced to **less than significant** levels.

c) *No Impact or Does Not Apply*. The Project site is disturbed and has been routinely maintained for weed abatement purposes. The Project site is relatively flat with a gentle slope from northwest to southeast. The Project site is characterized by upland vegetation. No riparian habitat occurs on the Project site. The Project site does not contain any hydrologic features or channels that would be considered state or federal jurisdictional waters. Further, the site does not contain Western Riverside MSHCP riparian/riverine resources, which are defined as “any habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.” In addition, no depressions or areas where water would pool were observed within the Project site. The Project does not contain obligate hydrophytes and facultative wetlands plant species. No hydric soils occur on the Project site. No vernal pools or suitable habitat for fairy shrimp occur on the site. The Project will not 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. **No impact** would occur.

d) *Less Than Significant with Mitigation Incorporated.* The City General Plan identifies multiple creeks within the City limits as wildlife corridors, including Murrieta Creek and Warm Springs Creek, approximately 3 miles southwest of the Project site. However, the Project site does not serve as a wildlife corridor or linkage. Wildlife movement corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbances. The Project area was evaluated for its function as a wildlife corridor that species use to move between wildlife habitat zones. The Project area is surrounded by human activity in the form of residences, commercial use, and roadways. No wildlife movement corridors were found to be present on the Project site. The Project site does not contain any water features and therefore will not affect any movement of migratory fish. Although the Project does have potential to affect migratory birds, this impact would be mitigated to levels below significance through implementation of **Mitigation Measures MM BIO-3** and **MM BIO-4**. Through implementation of these mitigation measures, development of the Project site is not expected to impact wildlife movement. Therefore, impacts to wildlife corridors or linkages would be reduced to **less than significant** levels.

e) *Less Than Significant with Mitigation Incorporated.* The City of Murrieta and Riverside County land use-based conservation goals and policies are in place to protect:

- The ecological and lifecycle needs of threatened, endangered, or otherwise sensitive species and their associated habitats;
- The groundwater aquifer, water bodies, and water courses, including reservoirs, rivers, streams, and the watersheds located throughout the region, and to conserve and efficiently use water;
- Floodplain and riparian areas, wetlands, forest, vegetation, and environmentally sensitive lands; and,
- Native trees, specimen trees and trees with historical significance (heritage).

As detailed in response to Checklist Question 4(a), impacts to threatened, endangered, or otherwise sensitive species. Would be reduced to a less than significant level with the implementation of **Mitigation Measure MM BIO-1** and **Mitigation Measure MM BIO-2**.

As detailed in response to Checklist Questions 4(b) and 4(c), the Project site does not contain any riparian areas or wetlands. As stated above, the Project site contains 2.66 acres of disturbed coastal sage scrub and 2.74 acre of areas dominated by coastal sage scrub. Implementation of **Mitigation Measure MM BIO-1** and **Mitigation Measure MM BIO-2** would reduce impacts to this habitat to **less than significant** levels.

The City's Tree Preservation Section of the Development Code (*Title 16, Section 16.42*) defines "Mature Tree" as "a living tree with a total circumference of thirty (30) inches or more (9.5 inches in diameter) of all major stems, as measured 4.5 feet above the root crown (diameter at breast height - DBH). A major stem shall measure at least 12.5 inches in circumference (four inches in diameter). Mature trees shall not include stump regrowth." There are no mature trees on the Project site that meet that definition. **No impact** would occur.

f) *Less Than Significant with Mitigation Incorporated.* The Project site is located within the Southwest Area Plan of the Western Riverside County MSHCP. However, the Project site is not located within a Criteria Cell or Subunit. A discussion of the applicable Western Riverside County MSHCP requirements follows:

Section 6.1.2 Species Associated with Riparian/Riverine Habitat and Vernal Pools

The Project site is disturbed and appears to be routinely maintained for weed abatement purposes. The Project site does not contain any hydrologic features or channels that would be considered state or federal jurisdictional waters. The Project site is relatively flat with a gentle slope from northwest to southeast. The Project site is characterized by upland vegetation. No riparian habitat occurs on the Project site. The Project site does not contain Western Riverside MSHCP

riparian/riverine resources. The proposed Project site does not contain any drainage features or associated riparian/wetland habitat that would be considered Western Riverside MSHCP riparian/riverine resources. In addition, none of the riparian/riverine bird species listed in Section 6.1.2 of the MSHCP were found within the Project site. Therefore, due to the lack of suitable riparian habitat on the Project site and the fact that these species were not found onsite, focused surveys for riparian/riverine bird species listed in Section 6.1.2 of the MSHCP are not warranted.

Vernal pools are seasonal depressional wetlands that occur under Mediterranean climate conditions of the west coast and in glaciated conditions of northeastern and midwestern states. They are covered by shallow water for variable periods from winter to spring but may be completely dry most of the summer and fall. Vernal pools are usually associated with hard clay layers or bedrock, which helps keep water in the pools. Vernal pools and seasonal depressions usually are dominated by hydrophytic plants, hydric soils, and evidence of hydrology.

The entire site was evaluated for the presence of habitat capable of supporting branchiopods. Habitat was evaluated as described in the USFWS *Survey Guidelines for the Listed Large Branchiopods* (May 31, 2016). The Project area is comprised of loams and fine sandy loams that have slopes ranging from 8 to 50 percent. This does not allow for water pooling on the Project site for any significant length of time after rain events. The entire Project site was evaluated for vernal pools, swales, or venal pool mimics such as ditches, borrow pits, cattle troughs, or cement culverts that has signs of pooling water. None were found. In addition, the site did not contain areas that showed signs of ponding water, hydrophytic vegetation, or soils typical of vernal pools that would be suitable for large branchiopods.

Section 6.1.3 Sensitive Plant Species

The Project site is not located within the Western Riverside County MSHCP Narrow Endemic Plant Species Survey Area (NEPSSA) pursuant to Section 6.1.3 of the MSHCP. Therefore, the NEPSSA requirements are not applicable to the Project and the Project is consistent with the Western Riverside County MSHCP narrow endemic plant species policies.

Section 6.1.4 Urban/Wildlands Interface Guidelines

The Project site is not located within or adjacent to a Western Riverside County MSHCP Conservation Area; therefore, the Project site is not required to address Section 6.1.4 of the Western Riverside County MSHCP.

Section 6.3.2 Additional Surveys and Procedures

The Project site is not located within the Western Riverside County MSHCP Criteria Area Plant Species Survey Area (CAPSSA) pursuant to Section 6.3.2 of the Western Riverside County MSHCP; therefore, the CAPSSA requirements are not applicable to the Project.

In addition, the Project site is not located within the Western Riverside County MSHCP Additional survey areas for amphibians, survey areas for mammals, or any special linkage areas; however, the Project site is located within the Western Riverside County MSHCP burrowing owl survey area. A habitat assessment has determined that the Project site provides suitable habitat for burrowing owl. Focused surveys for this species were conducted on the Project site**.** Despite systematic surveys, no burrowing owl or evidence (i.e., including scat, pellets, feathers, tracks, and prey remains) were found which would suggest recent or historical use of the site by burrowing owl. In accordance with the MSHCP 30-day Pre-Construction Burrowing Owl Survey Guidelines (revised August 17, 2006), an additional pre-construction survey for burrowing owl is required within 30 days prior to beginning of Project site grading to determine if site conditions change (e.g., establishment of ground squirrel burrows) and result in suitable habitat. **Mitigation Measure MM BIO-3** requires that a pre-construction burrowing owl survey is conducted prior to any ground-disturbing activities.

The MSHCP includes a Local Development Mitigation Fee to assist in providing revenue to acquire and preserve vegetation communities and natural areas within Riverside County which are known to support populations of threatened, endangered or key sensitive populations of plant and wildlife

species. Implementation of **Mitigation Measure MM BIO-1** requires the Project proponent to pay the MSHCP Mitigation Fee for the development of the Project per Riverside County Ordinance 810.2. **Mitigation Measure MM BIO-2** requires a preconstruction survey prior to any ground disturbing activities or vegetation removal.

In addition to the MSHCP, the Project site is within the Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan (HCP) fee boundary, but is not located within an SKR reserve, nor is the site located in an area requiring focused SKR surveys. Therefore, the Project proponent will be required to pay SKR HCP fees, as detailed in **Mitigation Measure MM BIO-5.**

MM BIO-5 ***Prior to issuance of grading permits, the Project proponent shall provide evidence to the City that payment of the Stephens' Kangaroo Rat Habitat Conservation Plan Mitigation Fee has been made for the development of the Project or portions thereof to be constructed within the City and County (per Riverside County Ordinance 663). This measure shall be implemented to the satisfaction of the City Planning Department.***

With implementation of **Mitigation Measures MM BIO-1** through **MM BIO-3** and **MM BIO-5,** impacts related to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would be reduced to **less than significant** levels.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
5. CULTURAL RESOURCES: Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? (References 10, 12, 13)		**X**		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (References 10, 13)		**X**		
c) Disturb any human remains, including those interred outside of formal cemeteries? (References 10)		**X**		

a) *Less Than Significant with Mitigation Incorporated.* When a project will impact a cultural resources site, a lead agency shall first determine whether the site is an historical resource. CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in *Public Resources Code* (*PRC*) Section 5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (*PRC* Section 21084.1 and *CEQA Guidelines* Section 15064.5[a]).

PRC section 5020.1(j), defines a historical resource as including but not limited to "any object, building, structure site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural engineering scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. And PRC section 5024.1 lists the properties that are eligible for inclusion in the California Register.

Pursuant to *CEQA Guidelines* section 15064.5[c][4], regarding effects on archaeological sites, if a cultural resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall

be sufficient that both the resource and the effect on it are noted in the Initial Study, but they need not be considered further in the CEQA process.

A "substantial adverse change" to a historical resource, according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

The Project site is currently vacant and subject to disking for weed abatement. No improvements exist on the Project site. A Cultural Resources Records Search (CHRIS), a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), and an intensive pedestrian field survey were conducted for the Project site as part of the CRA for the Project.

Cultural Resources Records Search (CHRIS): On March 8, 2018, the Cultural Resources Consultant conducted a CHRIS search on the campus of University of California Riverside, to identify previously documented cultural resources within a 1-mile radius of the Project site. The Eastern Information Center (EIC) maintains records of previously documented cultural resources (including those that meet the definition of a tribal cultural resource) and technical studies.

The Cultural Resources Records Search at the EIC revealed one previously recorded small cobble mano stone located within 0.5 mile of the Project site and four cultural resources located within one mile of the Project site. The cultural resources include: two lithic flakes of gray basalt, one unifacially flaked core, and two archaeological sites encountered during a project in 1972. The two archaeological sites consist of a small scatter of seed milling tools (manos and metates) (P-33-001012) and a possible milling stone site composed of manos, metates, chipped debitage and scraper planes (P-33-001011). The two archaeological sites belong to a larger site (P- 33-7455) designated as a National Register of Historic Places (NRHP) Status 5.

According to the CHRIS Record Search Records, nine cultural resource studies have been conducted within 0.5 mile of the Project site and thirteen cultural resource studies have been conducted within 1 mile of the Project site.

The CHRIS records search did not reveal any previously recorded cultural resources within the Project site or within a 1-mile radius of the Project site.

Sacred Lands File (SLF) Search: Additional background on the general vicinity of the Project site was also conducted through a search of the NAHC SLF to determine if known cultural resources are present, and to evaluate the potential for undocumented cultural resources not listed at the EIC. The NRHP, Archaeological Determinations of Eligibility, the Office of Historic Preservation (OHP), and the Directory of Properties in the Historic Property Data File were also reviewed for historic properties within the area surrounding the Project site. The NAHC's SLF search did not identify any specific information with respect to tribal lands or sites for the area surrounding the Project site. However, the presence of deeply buried archaeological material below the disturbed sediments cannot be ruled out.

The Cultural Resources Consultant also initiated a Native American consultation by contacting the NAHC to request a review of their SLF on April 2, 2018, to obtain a list of Native American groups or individuals listed by the NAHC for Riverside County, determine if known cultural resources are present within the vicinity of the Project, and evaluate the potential for undocumented cultural resources not listed at the EIC. The NAHC responded on April 2, 2018, noting that the negative results of the SLF search may not indicate the absence of Native American cultural resources in the Project area and provided a contact list of 38 Native American individuals or tribal organizations that may have knowledge of cultural resources in or near the Project area.

The Cultural Resources Consultant for the Project mailed letters to each of the NAHC-listed contacts on May 20, 2018, to inform them of the Project and inquire if they were aware of any cultural resources with the Project area or the immediate vicinity. Six responses have been received, including emails and letters from Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Mission Indians, Pechanga Band of Mission Indians, Rincon Band of Mission Indians, Soboba Band of Luiseño Indians and Viejas Band of Kumeyaay Indians.

The Pechanga Band of Mission Indians indicated that the Project area is not located within reservation lands although it is located within their ancestral territory. The Project site is also positioned near a culturally significant Luiseño area, as well as surrounded by an extensive Luiseño artifact record. The Pechanga Tribe asked to be notified when Project entitlements begin, to receive copies of all Archaeological reports for the Project, site records, proposed grading plans and environmental documents, to participate in a government-to-government consultation with the City and asked that a qualified Archaeologist and a professional Pechanga Tribe Monitor be present during any ground disturbing activities.

The Rincon Band of Mission Indians indicated that the Project site is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest. However, Rincon does not have knowledge of any cultural resources on Project site.

Therefore, the Rincon Tribe is not requesting further consultation at this time.

The Soboba Band of Luiseño Indians indicated that the Project site is located within their Tribal Traditional Use Areas and in proximity to known sites. Further, the Project site is considered to be culturally sensitive by the people of Soboba. The Soboba Band of Luiseño Indians asked for consultation with the Project proponent and the Lead Agency, for the transfer of information regarding the progress of the Project, to act as a consulting tribal entity for the Project, for a Native American Monitor from the Soboba Band of Luiseño Indians to be present during any ground disturbance, and that the proper procedure be taken and the request(s) of the Soboba Tribe be honored with regards to the discovery of cultural items and human remains as outlined in their response letter. Further discussion regarding consultation with Native American Tribes, the Soboba Band of Luiseño Indians, Tribal Traditional Use Areas, and Cultural Resource Monitor(s) as they relate to the Soboba Band of Luiseño Indians' request is discussed in Section 18, Tribal Cultural Resources.

Pedestrian Field Survey: On March 9, 2018, the Project's Archaeological Consultant conducted an intensive pedestrian survey of the irregularly shaped eleven-parcel Project area. All three parcels in the Project site were inspected in their entirety for archaeological artifacts as well as evidence of historic build environmental features. No prehistoric or historic artifacts or built environment features were recorded. The Project site contained a high amount of evidence of modern refuse deposits and disturbances throughout. The scattered modern refuse deposits were predominantly located on the southeastern portion of the Project site, which borders a carwash, restaurants, and residential development. It appears that the Project site serves as an informal trash dump location. Several active walking paths were observed throughout the entire Project site and two homeless camps were also observed (identified as homeless camp one and two. Homeless camp one was located on the southeastern portion of the Project site and homeless camp two was located on the north portion of the Project site. No one was observed on the Property site when the pedestrian survey was conducted.

The modern refuse deposits include construction debris (e.g., concrete, brick, wood fragments, dirt piles, etc.) and household trash (including modern metal cans, carpets, plastic bags, tables, chairs, stove, plastic containers, etc.). Homeless camp one was made out of branches, wood pieces, concrete fragments and parts of a refrigerator and appeared to be active as many pill bottles and cigarette butts were observed in proximity to the camp. Homeless camp two consists of a camping tent and larger pieces of plywood located on a natural drainage and appears to be no longer active.

The northwestern portion of the Project area has a higher amount of ground disturbance as it has been modified to serve as an informal bicycle and motorcycle track with ramps. Many bicycle and motorcycle tire tracks can be seen throughout the entire Project site. This same area has been previously disturbed when the erosion control concrete drainage channels were installed on the north portion of the Project site, most likely to avoid floods into Date Street during rain events.

No cultural resources were observed within the Project area and no further field work is necessary. Despite the apparent lack of cultural resources that could be defined as historical resources pursuant to PRC section 15064.5, due to the proximity of previously recorded archaeological sites

within a 0.5 of a mile radius from the Project site, the NAHC considers the Project site to have a high sensitivity for the presence of undocumented/buried resources. Therefore, **Mitigation Measure MM CUL-1** through **Mitigation Measure MM CUL-4** are required in the event unanticipated cultural resources are unearthed.

MM CUL-1 ***The Project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown cultural resources. Prior to grading, the Project permittee/owner shall provide to the City verification that a certified archaeological monitor has been retained. Any newly discovered cultural resource deposits shall be subject to a cultural resources evaluation.***

MM CUL-2 ***Archaeological Monitoring: At least 30-days prior to grading permit issuance and before any grading, excavation, and/or ground-disturbing activities on the site take place, the Project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources.***

1. ***The Project Archaeologist, in consultation with consulting tribes, the permittee/owner, and the City, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the Project site. Details in the plan shall include:***

    a. ***Project grading and development scheduling;***

    b. ***The development of a schedule in coordination with the permittee/owner and the Project Archeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation and ground-disturbing activities on the site: including the scheduling, safety requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all Project archaeologists; and,***

    c. ***The protocols and stipulations that the permittee/owner, City, tribes, and Project Archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resource evaluation.***

2. ***A final report documenting the monitoring activity and disposition of any recovered cultural resources shall be submitted to the City of Murrieta, Eastern Information Center and the consulting tribes within 60 days of completion of monitoring.***

MM CUL-3 ***Native American Monitoring: Native American Tribal monitors shall also participate in monitoring of ground-disturbing activity. At least 30 days prior to issuance of grading permits, agreements between the permittee/owner and a Native American Monitor shall be developed regarding prehistoric cultural resources and shall identify any monitoring requirements and treatment of Tribal Cultural Resources so as to meet the requirements of CEQA. The monitoring agreement shall address the treatment of known Tribal Cultural Resources; the designation, responsibilities, and participation of professional Native American Tribal monitors during grading, excavation, and ground-disturbing activities; Project grading and development scheduling.***

MM CUL-4 ***Disposition of Cultural Resources: In the event that Native American cultural resources are inadvertently discovered during the course of grading for this Project, one or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be submitted to the City of Murrieta Planning Department:***

1. ***Preservation-in-place means avoiding the resources, leaving them in the place where they were found with no development affecting the integrity of the resource.***

2. ***On-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to Mitigation Measure CUL-2. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.***

3. ***The permittee/owner shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:***

    a. ***A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and,***

    b. ***At the completion of grading, excavation, and ground disturbing activities on-site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project Archaeologist and Native American Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the Property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City of Murrieta, Eastern Information Center and consulting tribes.***

Implementation of **Mitigation Measure MM CUL-1** through **Mitigation Measure MM CUL-4** would reduce impacts on known, unknown, or potential cultural resources, including potential historical resources that may be located within the Project site to a level of **less than significant**.

b) *Less Than Significant with Mitigation Incorporated.* No on-site archaeological resources were identified during the archaeological records search or during the intensive pedestrian survey. The NAHC's SLF search also did not identify any site information with respect to tribal lands or sites for the area surrounding the Project site. However, the presence of deeply buried archaeological material below the disturbed sediments cannot be ruled out.

Since the Project includes earthmoving activities, the potential exists for the discovery of buried archaeological resources. To reduce the impact of any such discovery to **less than significant**

levels, **Mitigation Measure MM CUL-1** through **Mitigation Measure MM CUL-5** shall be implemented.

c) *Less Than Significant with Mitigation Incorporated.* No known human remains are present on the Project site, and there are no facts or evidence to support the idea that Native Americans or people of other descent are buried on the Project site. In the unlikely event that human remains are encountered during Project grading, the proper authorities would be notified, and standard procedures for the respectful handling of human remains during the earthmoving activities would be followed. Construction contractors are required to adhere to CCR Section 15064.5(e), PRC Section 5097, and Health and Safety Code Section 7050.5. To ensure proper treatment of burials, in the event of an unanticipated discovery of a burial, human bone, or suspected human bone, the law requires that all excavation or grading in the vicinity of the find halt immediately, the area of the find be protected, and the contractor immediately notify the County Coroner of the find. The Coroner must then determine whether the remains are human, and if such remains are human, the Coroner must determine whether the remains are or appear to be of a Native American. If deemed potential Native American remains, the Coroner shall contact the NAHC to identify the *most likely descendant* and to initiate appropriate recovery of such remains. The construction contractor, developer, and the County Coroner are required to comply with the provisions of CCR Section 15064.5(e), PRC Section 5097.98, and Health and Safety Code Section 7050.5. To ensure compliance with these regulatory policies, **Mitigation Measure MM CUL-5** is required.

MM CUL-5 ***Human remains: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately identify the "most likely descendants(s)" for purposes of receiving notification of discovery. The most likely descendant(s) shall then make recommendations within 48 hours and engage in consultation concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.***

Implementation of **Mitigation Measure MM CUL-5** and compliance with the provisions of CCR Section 15064.5(e), PRC Section 5097.98, and Section 7050.5 of the State Health and Safety Code would reduce impacts on human remains to a level of **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
6. ENERGY: Would the Project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation? (References 14)			**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (References 14)			**X**	

a) *Less Than Significant Impact.* Construction of the proposed Project would require the typical use of energy resources. Energy would be consumed during site clearing, excavation, grading, and construction. The construction process would be typical. No site conditions or Project features would require an inefficient or unnecessary consumption of energy. The Project has been designed

in compliance with California's Energy Efficiency Standards and 2016 CALGreen Standards. These measures include the use of water conserving plumbing, installation of bicycle racks, pre-plumbing of car charging ports for at least 3% of all parking space, installation of solar panels on the canopy roof that covers at least 15% of each roof area, the use of Light Emitting Device (LED) lighting, and water reclamation for irrigation systems.

Operation of the proposed Project would involve the use of energy for heating, cooling and equipment operation. These facilities would comply with all applicable California Energy Efficiency Standards and 2016 CALGreen Standards.

The largest source of operational energy use would be vehicle operation of customers. The site's location in an urbanized area at the intersection of a Multi-Modal Transportation Corridor (Murrieta Hot Springs Road) and an Expressway (Winchester Road) roadways. The traffic study compares the currently approved commercially zoned land use to the proposed Project and demonstrates that the Project would result in fewer trips than the currently allowable land use designation which would yield a net reduction in overall energy and emissions.

Furthermore, there are existing transit services, provided by Riverside Transit Agency (RTA), within a one-quarter mile walking distance of the proposed Project site. The nearest transit service is Riverside Transit Route 23, with a stop along Murrieta Hot Springs opposite side of the Eagle Glen Apartment units. In addition, Riverside Transit Route 79 travels between Hemet and Winchester. In the vicinity of the proposed Project, Route 79 runs along Winchester Road with a stop at the Murrieta Hot Springs Road/Winchester Road intersection.

Neither construction or operation of the Project would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. Therefore, impacts related to wasteful energy use would be **less than significant**.

b) *Less Than Significant Impact.* The Project has been designed in compliance with California's Energy Efficiency Standards and 2016 CALGreen Standards. These include the use of water conserving plumbing, installation of bicycle racks, pre-plumbing of car charging ports for at least 3% of all parking space, installation of solar panels on the canopy roof that covers at least 15% of each roof area, the use of LED lighting, and water reclamation for irrigation systems. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts would be **less than significant**.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact or Does Not Apply**
7. GEOLOGY AND SOILS: Would the Project:				
a.i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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. (References 1, 2, 15)			**X**	
a.ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking? (References 1, 2, 15)		**X**		
a.iii) Directly or indirectly cause potential substantial adverse effects, including the risk			**X**	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
of loss, injury, or death involving: Seismic-related ground failure, including liquefaction? (References 1, 2, 15)				
a.iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides? (References 1, 2, 15)			**X**	
b) Result in substantial soil erosion or the loss of topsoil? (References 1, 2, 15)			**X**	
c) Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (References 1, 2, 15, 47)		**X**		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (References 1, 2, 15)				**X**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (References 1, 2, 15)				**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (References 1, 2, 15, 16)			**X**	

a.i) *Less Than Significant Impact*. The City of Murrieta along with the greater Southern California area is located in a seismically active region. Active fault zones regional to the Project site include the Murrieta Hot Springs fault, the Elsinore fault (Glen Ivy segment), the San Jacinto fault (Anza segment), the Newport-Inglewood fault, and the San Andreas fault. **Table 7-1, *Closest Known Active Faults*** lists the known faults that would have the most significant impact on the Project site:

Table 7-1
Closest Known Active Faults

Fault Name	Distance/Direction from Project Site		Maximum Event	Slip Rate (mm./yr.)	Fault Type
	Kilometers	Miles			
Elsinore (Glen Ivy Segment)	5.7 SW	3.5 SW	6.8	5	A
San Jacinto (Anza Segment)	30.0 NE	18.6 NE	6.6	12	A
San Andreas (Southern Segment)	50.0 NE	31.1 NE	7.2	25	A

Source: *Geo Investigation* (**Appendix E**)

Surface rupture occurs where displacement or fissuring occurs along a fault zone. Although primary ground damage due to earthquake fault rupture typically results in a relatively small percentage of the total damage in an earthquake, the location of structures or facilities too close to a rupturing fault can cause significant damage. It is difficult to reduce the hazards of surface rupture through structural design. The primary method to avoid this hazard is to either set structures and facilities away from active faults, or avoid their construction in close proximity to an active fault.

Faults throughout Southern California have formed over millions of years. Some of these faults are considered inactive under present geologic conditions and other faults are known to be active.[1] Such faults have either generated earthquakes in historic times (200 years) or show geologic and geomorphic indications of movement within the last 11,000 years. Faults that have moved in the relatively recent geological past are generally presumed to be the most likely candidates to generate damaging earthquakes in the lifetimes of residents, buildings, or communities.

As set forth in the *Geo Investigation,* there are no known active or potentially active faults transecting the Project site, and the Project site is not located within the presently defined boundaries of either an Alquist-Priolo Earthquake Fault Zone or a County of Riverside fault hazard zone.

Based on the above, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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. Impacts will be **less than significant**.

a.ii) *Less Than Significant with Mitigation Incorporated.* The vast majority of earthquake damage is caused by ground shaking. The extent of shaking is a result of the size of the earthquake and distance from the epicenter. The exact way that rocks and other earth materials move along the fault can also influence shaking, as can the subsurface orientation of the fault.

The primary threat associated with nearby faults is the intensity of potential ground shaking at the Project site. As stated previously, the most significant earthquake event to potentially affect the Project site is a 6.8 Richter magnitude earthquake on the Elsinore fault zone (Glen Ivy segment). Based on Section 1803.5.12 of the 2016 California Building Code (CBC), peak ground accelerations modified for site class effects (PGAM) of approximately 0.732g are possible for the design earthquake. Adherence to the 2016 CBC is a standard condition that applies to all development in the City of Murrieta and is not considered unique mitigation under CEQA.

In addition, the *Geo Investigation* identifies grading and building recommendations for the Project site that would reduce the impact of geotechnical, geologic, or soil-related hazards that may occur during the grading, construction, or occupation of the proposed Project. The Project will be required to implement **Mitigation Measure MM GEO-1**.

MM GEO-1 ***Prior to issuance of a grading or building permits, the developer shall provide evidence to the City that all Project plans comply with the Project-specific geotechnical requirements outlined on pages 7 through 15 of the geotechnical investigation prepared for the proposed Project. The Project plans shall incorporate all applicable design requirements regarding site-specific geologic, seismic, or soil-related hazards or constraints on the Project site. All structures shall meet the seismic and other geologically-related requirements of the California Building Code (in effect at the time the Project is built) in the seismic zone applicable to the Project site. Implementation of these specific measures would address all of the identified geotechnical constraints at the Project site, including future ground shaking effects, liquefaction, and landslides. This measure shall be implemented to the satisfaction of the City Engineer.***

Therefore, with implementation of **Mitigation Measure MM GEO-1**, the Project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Impacts will be reduced to a **less than significant** level.

1 The Alquist-Priolo Earthquake Fault Zoning Act defines active faults as those showing proven displacement of the ground surface within the last 11,000 years. Potentially active faults are those showing evidence of movement within the last 1.6 million years.

a.iii) *Less Than Significant Impact.* Liquefaction is a phenomenon that occurs when strong seismic ground shaking causes soils to collapse from a sudden loss of cohesion and undergo a transformation from a solid to a liquefied state.

There are three basic factors that must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relatively shallow groundwater table (within approx. 50 feet below ground surface) or completely saturated soil conditions that would allow positive pore pressure generation.

The *Geo Investigation* states: "The site is not within a State of California (California Geologic Survey, 2018) or County of Riverside designated or mapped liquefaction hazard zone. Therefore, coupled with the absence of shallow groundwater (less than 50-ft bgs) and the medium to dense to dense nature of the subsurface sedimentary bedrock units, it is our opinion that liquefaction is not anticipated, and further analysis appears to be unwarranted at this time. Liquefaction potential is negligible."

The Project will be required to comply with the CBC. Adherence to the CBC is a standard condition that applies to all development in the City of Murrieta and is not considered unique mitigation under CEQA. Based on the above, impacts to the Project site related to seismic-related ground failure, including liquefaction, will be **less than significant**.

a.iv) *Less Than Significant Impact.* The Project site is in an area of low rolling to moderately steep terrain and no landslides have been mapped in the area, according to the *Geo Investigation*. The *Geo Investigation* further states: "The subject site is not located in an area of earthquake-induced landslide zones (California Geologic Survey, 2019). The risk of seismically induced landsliding to affect the proposed development is low."

Additionally, on-site settlement is expected to occur primarily during construction as structural loads are being applied. The proposed structural footings are anticipated to be founded in medium-dense to dense engineered fill overlying dense bedrock. Therefore, the settlement potential under seismic loading conditions for these on-site materials is low.

The Project will be required to comply with the CBC. Adherence to the CBC is a standard condition that applies to all development in the City of Murrieta and is not considered unique mitigation under CEQA. Based on the above, direct or indirect impacts from the Project that could cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides, will be **less than significant**.

b) *Less Than Significant Impact.* Development of the proposed Project will require significant grading to prepare the pad for building construction in accordance with the 2016 CBC. The development plan proposes a single mass graded pad to accommodate eight multi-family residential buildings, garages, parking and driveway areas, retaining walls, club house, pool-spa, and barbecue area.

The grading plan indicates that the proposed mass graded multi-family residential pad will be constructed as a cut/fill transition pad. Fill and fill-over-cut slopes will be constructed along the north, east and west boundaries of the Project site and are proposed at a 2:1 (h:v) slope ratio with a maximum vertical height of 25 feet.

As set forth in the *Geo Investigation*, the Project grading effort is expected to balance. On-site excavation of the cut portion of the Project site is anticipated to be used as fill in conjunction with creation of the pad and supporting slopes. No soil import or export is anticipated.

The *Geo Investigation* further indicates: a) The Project site provides suitable material for support of fill and/or structures near the surface of the site and that earth materials on the site are also suitable for use as compacted structural fill, b) Near surface soils have a very low expansion potential (EI =

3 & 8) consisting of low plastic silty Sand (SM) and sandy Silt (ML), and c) Sedimentary bedrock units underlie the Project site both at shallow depths and at the ground surface and extended to the total depth explored of 6.0-ft bgs.

Project grading would expose topsoil to potential erosion by wind and water. In order to prevent any negative impacts during grading of the site, a sediment basin would be built. Furthermore, upon completion of the grading and building efforts, on-site storm water flows would be captured by planned detention facilities and by landscaping for pre-treatment prior to discharge to the City storm drain system during Project operation.

The Project would require detailed evaluations of water quality impacts and consistency with the City's grading standards and typical best management practices (BMPs) for multi-family residential development. The City would also require the Project to prepare a Storm Water Pollution Prevention Plan (SWPPP) to address potential short-term water quality impacts (including erosion) during construction, and a Water Quality Management Plan (WQMP) to address potential long-term water quality impacts (including erosion) during Project operation. These items are incorporated into **Standard Conditions SC HYD-1** through **SC HYD-3** in Section 10, *Hydrology and Water Quality*. With implementation of these conditions of approval, potential short- and long-term erosion impacts would be **less than significant**.

c) *Less Than Significant with Mitigation Incorporated.* As discussed above, risk of potential instability associated with slope stability, liquefaction, and settlement was determined to be low, and implementation of **Mitigation Measure MM GEO-1** would ensure impacts related to these risks will be reduced to a **less than significant** level.

Field work conducted in conjunction with the *Geo Investigation* included review of available literature, and observation and logging of seven (7) exploratory trenches to a maximum depth of 6-feet below ground surface (bgs). The subsurface exploration of the Project site was conducted on January 3, 2018. The approximate locations of the exploratory trenches are included in **Figure 7-1, *Geotechnical Map***.

Observation and sampling of the exploratory trenches were performed by South Shore Testing and Environmental who logged numerous undocumented fill stockpiles, undifferentiated alluvial/colluvial soils overlying medium dense to dense sedimentary bedrock of the late Pleistocene-age Pauba formation. This unit was exposed both at the ground surface and shallow depths and extended to the total depth explored of 6.0-feet below ground surface (bgs).

Vegetation on the Project site consists of moderate low growth chaparral and a sparse dry growth of annual weeds and grasses. Man-made development is generally limited to numerous undocumented soil stockpiles, several dirt access roads, and partial fencing along the southeast portion of the site. The Project site topography consists of low rolling terrain with natural gradients of approximately 8 to 20 percent to the north-northeast. Drainage is by sheet flow north-northeast toward Date Street. Overall relief on the Project site, in the vicinity of the proposed development, is approximately 50-feet, with elevations varying from 1,122 to 1,722 above mean sea level (AMSL).

Subsurface soils underlying the Project site are identified as late Pleistocene age sedimentary units (Qpfs). A brief description of the geologic units underlying the Project site considered pertinent to the proposed Project development plan are included below:

- Undocumented Soils Stockpiles (Quss): Onsite undocumented soil stockpiles are generally limited to the westerly portion of the Project site. This unit, for the most part, consists of dark brown sandy Silt (Unified Soils Classification – ML) that can be described as dry, sandy, in part, loose to medium dense with minor construction debris and were generally placed on the site for previous use as moto-cross related motorcycle jumps and track on the westerly portion of the site.
- Undifferentiated Alluvial/Colluvial Soils (Qal): Undifferentiated Alluvial/Colluvial Soils were observed overlying the sedimentary bedrock units within the moderately incised drainage courses on the lower elevations of the Project site. This unit consisted of yellow brown silty

Sand (SM) that can generally be described as fine to medium grained, moderately graded, dry and loose.

- Sedimentary Bedrock (Qpfs): Late Pleistocene-age sedimentary bedrock units of the Pauba formation underlie the Project site both at the ground surface and shallow depths throughout the site. This unit, for the most part, consisted of silty Sand (SM) that can be described as brown, fine to medium grained, minor coarse, moderately sorted, medium dense to dense, and slightly moist.

Although the risk of seismic surface rupture is considered negligible due to the absence of known faulting on, or projecting toward the Project site, minor ground cracks may appear on the site as a result of seismic shaking, imperfections in subsurface strata (either man-made or natural), and the expansive nature of some soils near the ground surface. Therefore, the possibility of minor cracks at the ground surface for the life of the Project cannot be fully eliminated.

As set forth in Section a.iv above, the Project site is in an area of low rolling to moderately steep terrain and no landslides have been mapped in the area. It is not in an area of earthquake-induced landslide zones and the risk of seismically induced landsliding, both onsite and off-site, is considered low. Similarly, as set forth in Section a.iii, the risk of material subsidence, lateral spreading, liquefaction and/or collapse is negligible given the soil composition and groundwater depth. Additionally, LGC – Geo Environmental, Inc. provided the following information on subsidence:

> *"The project site is located within susceptible subsidence zone designated by Riverside County. Unfavorable ground subsidence is not anticipated because the project site is underlain by Pauba formation bedrock, and the depth to groundwater is estimated to be 70 feet below ground surface, based on nearby well. In addition, recommended over-excavation and recompaction associated with proposed grading, structures and improvements will remove subsurface earth materials, including undocumented soil stockpiles, alluvial/colluvial soil and weathered bedrock, which might be prone to subsidence. Accordingly, subsidence is not considered to be a potential concern regarding the proposed development of the project site."*

Based on the above, the Project site is not located on a geologic unit or soil that is unstable or would become unstable as a result of the Project. Furthermore, implementation of **Mitigation Measure MM GEO 1** would ensure impacts related to these risks would be **less than significant**.

d) *No Impact or Does Not Apply*. The *Geo Investigation* indicates near surface soils at the Project site have a very low expansion potential (EI = 3 & 8) consisting of low plastic silty Sand (SM) and sandy Silt (ML). Furthermore, the Project site provides suitable material for support of fill and/or structures near the surface of the site and that earth materials on the site are also suitable for use as compacted structural fill, and Sedimentary bedrock units underlie the Project site.

The Project site is not located on expansive soil, as defined in Table 18-1-B of the UBC (1994), that would create substantial risk to life or property. Therefore, this issue **does not apply**, there will be **no impact**.

e) *No Impact or Does Not Apply.* The Project development plan proposes connection to existing wastewater collection and conveyance facilities located proximate to the Project site. No portion of the proposed Project proposes the use of septic tanks or alternative waste water disposal systems. Because the proposed Project would not include the installation of septic tanks or alternative wastewater disposal systems, **no impact** would occur.

f) *Less Than Significant with Mitigation Incorporated.* In order to identify any paleontological resource localities that may exist in or near the Project area and to assess the possibility for such resources to be encountered during the project, a Paleontological Resources Assessment (*PRA*, **Appendix D3**) was conducted. The *PRA* initiated records searches at the appropriate repositories, conducted a literature review, and carried out a systematic field survey of the Project area. The results of these research procedures indicate that the proposed Project's potential to impact

paleontological resources appears to be high, especially for vertebrate fossils in the older Pauba Formation deposits that are present below but near the ground surface within the Project area.

Based on the finding that the Project site has "a high sensitivity" for paleontological resources, **Mitigation Measure MM GEO-2** shall be implemented during site ground disturbing activities to ensure impacts are reduced to a less than significant level. The mitigation program shall be developed in accordance with the provisions of CEQA (Scott and Springer 2003) as well as the proposed guidelines of the Society of Vertebrate Paleontology (2010):

MM GEO-2 ***Prior to the issuance of grading permits, the project proponent shall retain a paleontologist listed on the County of Riverside Paleontology Consultant List to develop and implement a Paleontological Resource Impact Mitigation Program (PRIMP) for this Project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the Project site beginning on the ground surface with the Pauba Formation. The PRIMP shall include procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report of findings at the conclusion of active ground disturbance. Monitoring may be scaled back or suspended, at the discretion of the paleontological monitor and approval of City Planning Department, if it is determined that the paleontological sensitivity of the Project site no longer warrants monitoring.***

If paleontological resources are encountered during the course of ground disturbance, the monitor shall have the authority to temporarily redirect construction up to 50 feet away from the area of the find in order to assess its significance under CEQA. Collected resources shall be prepared to the point of curation, identified to the lowest taxonomic level possible, catalogued, and curated into the permanent collections of an accredited scientific institution. At the conclusion of the monitoring program, a report of findings shall be prepared to document the results of the monitoring program.

In the event that paleontological resources are encountered when a paleontological monitor is not on site, work in the immediate area of the find shall be redirected, and a paleontologist shall be contacted to assess the find for significance. If the find is determined to be significant, it shall be collected from the field, and the paleontologist shall make recommendations for monitoring, curation, and reporting.

This measure shall be implemented to the satisfaction of the City Planning Department. Implementation of **Mitigation Measure MM GEO-2** will reduce impacts on paleontological resources to **less than significant** levels.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
8. GREENHOUSE GAS EMISSIONS: Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (References 11)		**X**		
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (References 11)		**X**		

All the Tables in this Section are from the *Air Quality and Greenhouse Gas Impact Analysis*, unless stated otherwise.

a) *Less Than Significant with Mitigation Incorporated.* Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NO_2) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean.

The South Coast Air Quality Management District (SCAQMD) has established recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"). SCAQMD has published a five-tiered draft GHG threshold which includes a 10,000 metric ton of CO_2e per year for stationary/industrial sources and 3,000 metric tons of CO_2e per year significance threshold for residential/commercial projects. Tier 3 is anticipated to be the primary tier by which the SCAQMD will determine significance for projects. The Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90-precent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to CEQA analysis. The 90-percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the SCAQMD's annual Emissions Reporting Program.

The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether or not the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose but must be consistent. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 $MTCO_2e$ per year
  - Based on land use types: residential is 3,500 $MTCO_2e$ per year; commercial is 1,400 $MTCO_2e$ per year; and mixed use is 3,000 $MTCO_2e$ per year
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual by a certain percentage; this percentage is currently undefined
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
  - Option 3: Year 2020 target for service populations (SP), which includes residents and employees: 4.8 $MTCO_2e$/SP/year for projects and 6.6 $MTCO_2e$/SP/year for plans
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The City of Murrieta adopted a Climate Action Plan (CAP) as part of the City's General Plan 2035 in 2011. The City's CAP provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. 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 General Plan. The CAP recommends GHG emission targets that are consistent with the reduction targets of the state and presents a number of strategies that will make it possible for the City to meet the recommended targets. The City's CAP also suggests best practices for implementation and makes recommendations for measuring progress. The purpose of the City's CAP is to guide the development, enhancement, and implementation of actions that would reduce the City's GHG emissions by 15 percent below baseline (year 2009) levels by 2020.

Therefore, to determine whether the Project's GHG emissions are significant, the *AQ/GHG Impact Study* initially used the SCAQMD draft local agency tier 3 screening threshold of 3,000 $MTCO_2e$ per year for all land use types for the Project.

Construction Greenhouse Gas Emissions Impact

The greenhouse gas emissions from Project construction equipment and worker vehicles are shown in **Table 8-1, *Construction Greenhouse Gas Emissions***. The emissions are from all phases of construction. The total construction emissions amortized over a period of 30 years are estimated at 36.04 metric tons of CO_2e per year.

Table 8-1
Construction Greenhouse Gas Emissions

Activity	Emissions ($MTCO_2e$)[1]		
	Onsite	Offsite	Total
Grading	36.3	1.9	38.2
Building Construction[2]	353.7	649.9	1,003.6
Paving	27.3	1.9	29.1
Coating	3.5	7.0	10.4
Total	420.7	660.6	1,081.3
Averaged over 30 years[3]	14	22	36.04

Notes:
[1] $MTCO_2e$=metric tons of carbon dioxide equivalents (includes carbon dioxide, methane and nitrous oxide).
[2] Building construction is estimated to last less than a year.
[3] The emissions are averaged over 30 years because the average is added to the operational emissions, pursuant to SCAQMD.

Operational Greenhouse Gas Emissions Impact

Operational emissions occur over the life of the Project. The unmitigated operational emissions for the Project are 3,685.05 metric tons of CO_2e per year resulting in 5.41 $MTCO_2e$/SP/year as shown in **Table 8-2, *Opening Year Unmitigated Project-Related Greenhouse Gas Emissions***. The service population was estimated to be 681 future residents (based on the estimated CalEEMod population for the proposed Project). Therefore, the Project's GHG emissions exceed both the SCAQMD draft threshold of 3,000 metric tons CO_2e per year for all land uses and the SCAQMD 2020 Target Service Population threshold of 4.8 $MTCO_2e$/SP/year.

Table 8-2
Opening Year Unmitigated Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO_2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	55.45	55.45	0.00	0.00	55.85
Energy Usage[3]	0.00	566.37	566.37	0.02	0.01	568.86
Mobile Sources[4]	0.00	2,845.12	2,845.12	0.15	0.00	2,848.84
Solid Waste[5]	22.22	0.00	22.22	1.31	0.00	55.06
Water[6]	4.92	98.94	103.86	0.51	0.01	120.40
Construction[7]	0.00	22.75	22.75	0.00	0.00	36.04
Total Emissions	27.14	3,588.62	3,615.76	2.00	0.02	**3,685.05**

SCAQMD Draft Screening Threshold	**3,000**
Exceeds Threshold?	**Yes**
SCAQMD 2020 Target Service Population Threshold 4.8 MTCO2e/SP/Year for projects	**5.41**
Exceeds Threshold?	**Yes**

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30 year amortization rate.

The data provided in **Table 8-3, *Opening Year Mitigated Project-Related Greenhouse Gas Emissions*** shows that the proposed Project's mitigated emissions would be reduced to 2,978.99 $MTCO_2e$ per year resulting in 4.37 $MTCO_2e$/SP/year.

Table 8-3
Opening Year Mitigated Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO_2	**NonBio-CO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[2]	0.00	55.45	55.45	0.00	0.00	55.85
Energy Usage[3]	0.00	545.47	545.47	0.02	0.01	547.89
Mobile Sources[4]	0.00	2,218.89	2,218.89	0.13	0.00	2,222.17
Solid Waste[5]	5.56	0.00	5.56	0.33	0.00	13.76
Water[6]	3.94	86.07	90.01	0.41	0.01	103.27
Construction[7]	0.00	22.75	22.75	0.00	0.00	36.04
Total Emissions	9.49	2,928.64	2,938.13	0.89	0.02	**2,978.99**
SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**No**
SCAQMD 2020 Target Service Population Threshold 4.8 MTCO2e/SP/Year for projects						**4.37**
Exceeds Threshold?						**No**

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30 year amortization rate.

The Project will be subject to the latest requirements of the California Green Building and Title 24 Energy Efficiency Standards (currently 2016) which would reduce Project-related greenhouse gas emissions. In addition, **Mitigation Measures MM GHG-1** through **MM GHG-3** will be required.

MM GHG-1 ***During Project construction, the Project applicant shall require that: all faucets, toilets and showers installed in the proposed structures utilize low-flow fixtures that would reduce indoor water demand by 20% per CalGreen Standards, water-efficient landscaping practices are employed on-site.***

MM GHG-2 ***During Project construction and operations, the Project applicant shall require recycling programs that reduces waste to landfills by a minimum of 75 percent (per AB 341).***

MM GHG-3 ***During Project construction and operations, the Project applicant shall require that high-efficiency lighting (such as LED lighting that is 34 percent more efficient than fluorescent lighting) be installed on-site.***

As shown in **Table 8-3**, with incorporation of **Mitigation Measures MM GHG-1** through **MM GHG-3**, which require the Project to use high-efficiency lighting as well as comply Cal Green Standards and AB 341, and incorporation of the CAPCOA-based land use and site enhancement reduction measures: LUT-1 Increased Density and LUT-5 Increase Transit Accessibility, the proposed Project's emissions would no longer exceed the SCAQMD draft threshold of 3,000 metric tons CO_2e per year for all land uses or the tier 4 SCAQMD 2020 Target Service Population Threshold of 4.8 $MTCO_2e$/SP/year.

Therefore, with incorporation of **Mitigation Measures MM GHG-1** through **MM GHG-3**, the proposed Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Impacts will be reduced to a **less than significant** level.

b) *Less Than Significant with Mitigation Incorporated.* The City of Murrieta has a Climate Action Plan (CAP); therefore, the Project and its GHG emissions have been compared to the goals of the CAP. The CAP includes the emission target to reduce the City's GHG emissions by 15 percent below baseline (year 2009) levels by 2020.

SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which was phased in starting in 2012.

Therefore, as the Project's mitigated emissions meet the threshold for compliance with Executive Order S-3-05, the Project's emissions also comply with the goals of AB 32 and the CAP. Additionally, as the Project meets the current interim emissions targets/thresholds established by SCAQMD, the Project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the Project will be required to comply with these regulations as they come into effect.

At a mitigated level of 2,978.99 $MTCO_2e$ per year, the Project's GHG emissions do not exceed the SCAQMD draft threshold and is in compliance with the reduction goals of the CAP, AB-32 and SB-32. Furthermore, with incorporation of **Mitigation Measures MM GHG-1** through **MM GHG-3**, the Project will comply with applicable Green Building Standards and City of Murrieta's policies regarding sustainability (as dictated by the City's General Plan and CAP). Therefore, the proposed Project will not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Impacts will be reduced to a **less than significant** level.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact or Does Not Apply**
9. HAZARDS AND HAZARDOUS MATERIALS: Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (References 1, 2, 10)			**X**	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (References 2, 7, 17)			**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (References 6, 18, 19)			**X**	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (References 10, 17, 20, 21)				**X**
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? (References 6, 22, 46)			**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (References 1, 2, 7)			**X**	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (References 1, 8, 23, 24)			**X**	

a) *Less Than Significant Impact.* The proposed Project would result in the construction and operation of a multi-family residential development. Potential hazardous materials such as fuel, paint products, lubricants, solvents, and cleaning products may be used and/or stored on site during the construction and/or occupancy of the proposed Project. However, due to the limited quantities of these materials to be used by the proposed Project, they are not considered hazardous to the public at large. In accordance with the City's Hazardous Materials Policy, the transport, use, and storage of hazardous materials during the construction and operation of the site will be conducted pursuant to all applicable local, State and federal laws, and in cooperation with the Murrieta Fire Department in partnership with Riverside County Department of Environmental Health Hazardous Materials Branch.

Title 49 of the Code of Federal Regulations, implemented by Title 13 of the CCR, describes strict regulations for the safe transportation of hazardous materials. Compliance with all applicable federal, State, and local laws related to the transportation, use and storage of hazardous materials would reduce the likelihood and severity of accidents during transit, use, and storage.

As required by California Health and Safety Code Section 25507, a business shall establish and implement a Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to Section 25503 if the business handles a hazardous material or a mixture containing a hazardous material that has a quantity at any one time above the thresholds described in Section 25507(a) (1) through (6).

Compliance with all applicable local, State, and federal laws, including but not limited to Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, as well as Health and Safety Code Section 25507, would ensure a **less than significant** impact from the routine transport, use, or disposal of hazardous materials.

b) *Less Than Significant Impact.* There are no recognized environmental conditions on or proximate to the Project site. As set forth the *Phase I ESA*:

> "*Based upon the site reconnaissance, historical review, regulatory records review, and other information detailed within this report, this Assessment identified no obvious evidence of recognized environmental conditions (RECs) in connection with the subject property. No further investigation is recommended*."

During construction there is a potential for accidental release of petroleum products in sufficient quantity to pose a significant hazard to people and the environment. Such an occurrence shall be managed pursuant to a project-specific Storm Water Pollution Prevention Plan (SWPPP) to be implemented as part of the mandated National Pollution Discharge Elimination System (NPDES) permit requirements. As stated in the permit, during and after construction, best management practices (BMPs) shall be implemented to reduce/eliminate accidental release of hazardous materials resulting from development.

The Project site development plan proposes multi-family residential use, only. Hazardous materials anticipated during operations are anticipated to be those most commonly associated with multi-family residences and landscaping, which include cleaning products, petroleum products, etc. These types of hazardous materials are not potentially hazardous to large numbers of people, especially at the scale they would be stored and used in conjunction with a residential use. Therefore, the Project will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Based on this information, any impacts are considered **less than significant**.

c) *Less Than Significant Impact*. The school nearest the Project site is the Warm Springs Middle School (39245 Calle de Fortuna), approximately 0.18 mile northwest of the Project site. The next two closest schools are the Heritage Classical Charter School of America (29970 Technology Drive) and Chaparral High School (27215 Nicolas Rd), approximately 0.70 mile north and 0.75 mile south of the Project site. There are no schools proposed within 0.25 mile of the Project site.

It is noted, while the Warm Springs Middle School is located within one-quarter mile of the Project site, the Project site's proposed multi-family residential use does not pose a significant risk of hazardous materials exposure given the residential use property type. Any impacts are considered **less than significant**.

d) *No Impact or Does Not Apply.* The Project site is undeveloped but is surrounded by roads and residential, commercial, and parks and open space uses. The City's General Plan EIR does not identify the Project site or surrounding areas as sources of hazardous materials. A search of the Department of Toxic Substances Control EnviroStor data base, which includes all hazardous sites pursuant to Government Code Section 65962.5, and the California Environmental Protection Agency "Cortese List," completed in conjunction with the *Phase I ESA*, indicates there are no sites of concern regarding hazardous materials on the Project site or in the immediate vicinity of the Project site. Since the Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, **no impact** related to this issue would occur.

e) *Less Than Significant Impact.* The Project site is located approximately 1.3 miles south/southwest of the French Valley Airport and is identified as being within the airport's land use Compatibility Zone D. Compatibility Zone D allows residential land use at densities based on the "net" rather than the "gross" land area. The Project site is not located near any private airstrip. Since the proposed Project would be designed and constructed subject to applicable provisions of Compatibility Zone D of the French Valley Airport Masterplan, and *Title 16*, *Section 16.08.040* -

Multi-family Residential Design Standards of the MDC, it has little potential to adversely affect or be affected by any existing airport operations.

Additionally, the Project was determined to be consistent with the Airport Land Use Plan by the Riverside County Airport Land Use Commission (ALUC) Director on July 11, 2019 (Case No. ZAP1089FV19). It was determined that the Project is consistent with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Four (4) conditions of approval were added to the Project, which pertain to outdoor lighting, prohibited uses, notice to all potential tenant/lessees of buildings, and a 48-hour detention basin design. Any impacts are considered **less than significant**.

f) *Less Than Significant Impact*. The Project site is located along the south/southwest side of the future extension of Date Street adjacent northeast of Rising Hill Drive. The proposed Project would be required to design, construct, and maintain structures, roadways, and facilities in accordance with the City's *Comprehensive Emergency Management Program* to ensure a coordinated and effective planned response by the City Police and Fire Departments to extraordinary emergency situations and disasters and also to ensure the provision of adequate vehicular access. Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any temporary road closures. Primary access (ingress/egress) will be provided via a private driveway connection along Date Street. Secondary fire access will be provided via a 38' wide driveway located adjacent to the knuckle intersection of Rising Hill Drive and Bahama Way. These construction and design elements are standard conditions of approval for the City pursuant to *Title 10, Vehicles and Traffic* of the MDC and thus would not require separate mitigation measures. Adherence to these City conditions would result in **less than significant** impacts related to emergency access for the Project site.

g) *Less Than Significant Impact.* According to the City's General Plan Safety Element, the Project site is not located in a High Fire Zone. Due to past disturbances at the Project site, it presently has a low fuel load, and it is surrounded by existing development and roadways. The Project would be constructed in accordance with the 2016 CBC, including Chapter 7 of the code, which requires all on-site structures to incorporate construction techniques and materials such as roofs, eaves, exterior walls, vents, appendages, windows, and doors hardened to provide resistance to and/or to perform at high levels against ignition during the exposure to burning vegetation from wildfires. The City reviews all proposed development to ensure compliance with applicable provisions of its Development Code, the Uniform Fire Code, California Fire Code, and California Uniform Building Code requirements. The City's Fire Department shall review the Project and require the necessary code requirements in order to reduce any potential wildland fire hazard impacts to a less than significant level. This is a standard condition and not considered unique mitigation under CEQA. Any impacts are considered **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
10. HYDROLOGY AND WATER QUALITY: Would the Project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (References 6, 25, 26, 27, 45)			**X**	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (References 2, 15, 25, 26, 28, 2945)			**X**	
c.i) Substantially alter the existing			**X**	

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? (References 6, 25)				
c.ii) 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? (References 6, 25, 27)			**X**	
c.iii) 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 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? (References 6, 25)			**X**	
c.iv) 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 impede or redirect flood flows? (References 6, 25, 27)			**X**	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (References 6, 25, 27)				**X**
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (References 2, 25)				**X**

a) *Less Than Significant Impact.* The federal Clean Water Act (CWA) establishes the framework for regulating municipal storm water discharges (construction and operational impacts) via the National Pollutant Discharge Elimination System (NPDES) program.

A project would have an impact on surface water quality if discharges associated with the project would create pollution, contamination, or nuisance as defined in Water Code Section 13050, or that cause regulatory standards to be violated as defined in the applicable NPDES storm water permit or Water Quality Control Plan for a receiving water body.

For the purpose of this specific issue, a significant impact could occur if the Project would discharge water that does not meet the quality standards of the agencies which regulate surface water quality and water discharge into storm water drainage systems. Significant impacts could also occur if the project does not comply with all applicable regulations with regard to surface water quality as governed by the State Water Resources Control Board (SWRCB). These regulations include

preparation of a Water Quality Management Plan (WQMP) to reduce potential post-construction water quality impacts.

All new development in the City of Murrieta is required to comply with provisions of the NPDES program, including Waste Discharge Requirements (WDR), and the City's Municipal Separate Sewer Permit (MS4), as enforced by the San Diego Regional Water Quality Board (SDRWQCB).

The Project site along with the entire City of Murrieta is located in the Santa Margarita Watershed, which drains to the Santa Margarita River and into the Pacific Ocean as it extends through the Camp Pendleton Marine Corps Base in northern San Diego County.

Currently, the Project site consists of 8.37 gross acres (5.92 acre proposed pad area) of vacant, undeveloped land with a 100 percent (100%) pervious earthen surface. In the existing condition, the Project site topography includes a moderate on-site ridgeline that extends through the northwest and southeast portions of the site with slopes varying between 10% to a maximum 50%. Drainage run-off currently sheet flows off of the ridgeline in multiple directions generally to the north/northeast, south/southwest, and east/southeast across adjacent properties and eventually flowing into the existing Winchester Road Storm Drain in Date Street constructed in conjunction with Assessment District 161.

The Project site clearing and grading phases would disturb surface soils along with a minimal amount of brush and vegetation, potentially resulting in erosion and sedimentation. If left exposed and with no vegetative cover, the Project site's bare soil would be subject to wind and water erosion.

Since the Project involves more than one acre of ground disturbance, it is subject to NPDES permit requirements for the preparation and implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP). Adherence to NPDES permit requirements and the measures established in the SWPPP are routine actions conditioned by the City and will ensure applicable water quality standards are appropriately maintained during construction of the proposed Project.

Accordingly, City **Standard Conditions SC HYD-1** and **SC HYD-2** are required for the proposed Project:

SC HYD-1 ***Prior to issuance of a grading permit or other construction activities, the Project proponent shall provide the following to City staff: A copy of the Notice of Intent (NOI) and Waste Discharge Identification (WDID) number from the State Water Resources Control Board. The NOI shall address the potential for an extended and discontinuous construction period based on funding availability. This measure shall be implemented to the satisfaction of the City Engineer.***

SC HYD -2 ***Prior to issuance of a grading permit, the Project proponent shall submit to and receive approval from the City of Murrieta of a project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. In addition, the SWPPP shall emphasize structural and nonstructural best management practices (BMPs) to control sediment and non-visible discharges from the site. The SWPPP shall address the potential for an extended and discontinuous construction period based on funding availability. The Project proponent shall be responsible for implementation, monitoring, operation and maintenance of the SWPPP until all improvements have been accepted by the City or construction is complete, whichever is later. A Notice of Termination (NOT) can then be filed with the State Water Resources Control Board. Grading during the wet season should identify additional BMPs for rain events that may occur as necessary for compliance with the Santa Margarita Region MS4 Permit. This document must minimize the disturbed area, label the maximum disturbed area, and identify equipment and material storage areas. The SWPPP shall be kept on site for***

the entire duration of project construction and shall be available to the Regional Water Quality Control Board and City Inspectors at all times. This measure shall be implemented to the satisfaction of the City Engineer.

The proposed Project is proposing a subsurface water quality basin that will promote infiltration of the water quality runoff and will mitigate hydromodifications. All runoff generated by the Project site will be collected and conveyed into the Winchester Road Storm Drain which has been designed to collect runoff from the Project area.

The Winchester Road Storm Drain is a 54-inch concrete pipe that extends along Winchester Road and ultimately terminates into the existing golf course north of Murrieta Hot Springs Road. The 54-inch storm drain will ultimately discharge flows into Tucalota Creek. Riverside County Flood Control and Water Conservation District currently owns and maintains the 54-inch diameter storm drain pipeline in Old Date Street. This facility (Assessment District No. 161 Winchester Road Storm Drain) currently collects storm runoff from the Project site and surrounding properties and conveys accumulated flows downstream to Tucalota Creek. Currently, this storm drain collects local flows from the Project site further downstream than is being proposed by the Project design.

In order to determine if moving the inflows to a point further upstream in the storm drain will have a detrimental effect, the following steps were taken. Please reference **Figure 10-1, *Hydrology Map, Murrieta Apartment*** for the location of "nodes" listed below.

- Attempts were made to obtain copies of the hydrology report for the Winchester Road Storm Drain, however the report and associated computations could not be located;
- The watershed upstream of Murrieta Hot Springs Road was then analyzed to determine the time of concentration, which was established as 32.2 minutes the intersection of Old Date Street and Del Haven Avenue. According to the storm drain plans, the accepted Q100 at that location is 166.4 cubic feet per second (cfs). The main purpose of this step was to model the time of concentration for the longest flow path in order to develop a time of concentration that could be used for the confluence analyses;
- Flows from the Project site and the adjacent 2.6 acres were confluenced with flows from the upper watershed using a time of concentration of 32.2 minutes (Node 6);
- Flows from the two commercial developments on both sides of Old Date Street were then confluenced with the cumulative upstream runoff (Node 9);
- Street flows from Old Date Street were confluenced in at the end of the existing cul-de-sac (Node 11);
- Street flows from Winchester Road were confluence; at the existing catch basin (Node 14);
- Flows from the two existing commercial developments on Winchester Road were confluenced at Nodes 16 and 18;
- The cumulative Q100 at Node 18 was calculated to be 196 cfs versus 203.4 cfs shown on the storm drain plans, a difference of about 3 and a half percent;
- Hydraulic grade line (HGL) computations were performed using the newly computed runoff values and plotted on the storm drain plans. These HGL computations show that the storm drain is expected to function in an acceptable manner if flows from the Project site enter the storm drain at the proposed location.

Tucalota Creek is tributary to Santa Gertrudis Creek which extends approximately 2½ miles southwest to Murrieta Creek. From there, storm water flows southeast approximately 7¼ miles within Murrieta Creek along the eastern foothills of the Santa Ana Mountains to the Santa Margarita River, through the Santa Ana Mountain Range (aka the "Rainbow Gap") and Camp Pendleton before discharging into the Pacific Ocean.

The Project site flow rates in the pre-project condition are higher than the post-project condition. This is attributed to the natural terrain being steep in comparison to the proposed post-project graded condition. The sloping natural terrain is resulting in low time of concentration values that produce higher flow rates due to the higher rainfall intensity. The pre-project condition is tributary to the existing Winchester Road Storm Drain System. The proposed Project will continue to

discharge the flows into the Winchester Road Storm Drain system. Reference **Figure *10-1, Pre-Project Hydrology Map*** and **Figure 10-2, *Post-Project Hydrology Map***.

The Project site development plan will construct subsurface storm drain to convey the peak 100-year flow rates emanating from the project site to a proposed subsurface basin that has been sized for to mitigate hydromodifications. The Project will use a total of 3 catch basins and 2 grate inlets. The proposed catch basins are located in sump conditions.

In addition to the catch basins, the Project will implement the use of a trench drain at the Project entrance from Date Street. Before leaving the Project site, the trench drain will capture the front entrance flow rate and filter it through a modular wetlands. The proposed Project is proposing a total of 4 storm drain systems, as shown on **Figure 10-2**.

- **Line A** is a proposed 24-inch storm drain system that will convey flows from the subsurface basin to the existing Winchester Road Storm Drain. Additionally, the Line A system will include two connector pipes that will connect the proposed grate inlets to the storm drain system. The minimum slope of Line A shall be 2%.
- **Line A1** is a storm drain system that collects flows from Area A2 at a sump location at the most easterly point of the project. The Line A1 system will also confluence with the Line A2 System. The flow rate for Line A1 will range from 4.6 ft^3/s to 8.4 ft^3/s. The Line A1 system downstream of the confluence point shall be a 24-inch storm drain with a minimum slope of 0.5%. Upstream of the confluence point the storm drain will be an 18-inch storm drain.
- **Line A2** is a storm drain that collects flows from Area A1 at a sump location. The flows for the 100 year storm event are 4.3 ft^3/s. The Line A2 system from the confluence point to the proposed catch basin will be an 18-inch storm drain.
- **Line A3** is a storm drain that collects flows from Area A3 and A4 at a sump location. The flows for the 100 year storm event are 8.4 ft^3/s. The proposed storm drain will be a 24-inch storm drain.

Pursuant to the United States Environmental Protection Agency (USEPA) - approved 303(d) listed impairments for these receiving waters, the Project's pollutants of concern include various pesticides, bacteria, and nutrients listed below in **Table 10-1, *Project Site Receiving Waters and USEPA Approved 303(d) List Impairments***.

Table 10-1
Project Site Receiving Waters and USEPA Approved 303(d) List Impairments

Receiving Waters	USEPA Approved 303(d) List Impairments
Winchester Road Storm Drain	N/A
Santa Gertrudis Creek	Pesticides (Chlorpyrifos); Metals (Copper, Iron, Manganese), Bacteria & Viruses (Indicator Bacteria); Nutrients (Nitrogen, Phosphorus) Toxicity (Toxicity).
Murrieta Creek (HSA 2.32)	Nutrients (Nitrogen, Phosphorus), Metals (Copper, Iron, Manganese), Pesticides (Chlorpyrifos, Toxicity)
Santa Margarita River – Upper Portion (HSA 2.22, 2.21)	Bacteria & Viruses (Indicator Bacteria), Toxicity (Toxicity); Nutrients (Phosphorus, Nitrogen); Metals (Iron, Manganese)
Santa Margarita River – Lower Portion (HSA 2.13, 2.12, 2.11)	Bacteria & Viruses (Indicator Bacteria), Pesticides (Chlorpyrifos); Toxicity (Toxicity); Nutrients (Phosphorus, Nitrogen); Miscellaneous (Benthic Community Effects)
Santa Margarita Lagoon	Nutrients (Eutrophic)
Pacific Ocean	None

Source: *Murrieta Apartments WQMP* (**Appendix G1**)

The Project site's development plan proposes 234 multi-family residential apartment units in eight freestanding buildings, along with garages, parking and driveway areas, retaining walls, club house, pool-spa, and barbecue area. The Project site development would result in approximately 237,867 square feet (5.46 acres) of impervious surface area.

The Project site will convey onsite flows to a subsurface system where the flows will be treated for water quality purposes and mitigate for increased runoff. The Project site will ultimately discharge into the existing Winchester Road Storm Drain located within Date Street.

To address potential water contaminants, the proposed Project is required to comply with applicable federal, state, and local water quality regulations. In order to generally maintain the existing drainage pattern toward Date Street, development of the proposed project would include two (2) drainage management areas (DMAs), as detailed in **Table 10-2, *Proposed Project Runoff Characteristics***.

DMA A consists of building roof tops, asphalt paving and concrete walkways, and landscaping which would direct storm water flows through on-site storm drains and gutters constructed within the proposed parking lot and drive aisles into Subsurface Infiltration Basin "A," located in the north/northwest portion of the Project site between the proposed Club House and proposed Building 1, designed to capture storm water runoff before discharging into the existing City storm drain in Date Street. DMA B consists primarily of impervious, vegetated sloping landscape surfaces at the north, south and east perimeter of the Project site and are therefore considered self-treating. DMA C comprises the 10,454-square foot driveway entry off of Date Street consisting primarily of porous paver materials and a limited amount of concrete.

Table 10-2
Proposed Project Runoff Characteristics

Drainage Management Area	Area (sq. ft.)	Proposed BMP	Required Design Capture Volume (ft^3)	Proposed Capture Volume (ft^3)	Minimum Design Capture Volume (ft^3) Met?
DMA A	277,477	Subsurface Infiltration Basin A	11,779	20,203	Yes
DMA B	52,208	Landscaping (self-treating)	N/A (minimal impervious area)	N/A	N/A
DMA C	10,454	Modular Wetlands	N/A (flow based BMP)	N/A	N/A

Sq. ft. = Square feet
ft^3 = cubic feet
BMP = Best Management Practice
DMA = Drainage Management Area
N/A = Not applicable
Source: Tables C-1, C-2, C-3, C4, C-5, and D-8, *Murrieta Apartments WQMP* (**Appendix G1**)

The proposed DMAs were analyzed to determine if their conveyance of storm water runoff would create a Hydrologic Condition of Concern (HCOC). A HCOC occurs when post-development runoff conditions exceed pre-development runoff conditions, and discharge from the Project site has a flow rate greater than 110 percent of the pre-development two-year peak flow.

According to the project-specific *WQMP*, conversion of pervious surface to impervious surface on-site would require DMA A, to capture 11,779 cubic feet of storm water runoff in order to ensure post-development storm water runoff does not exceed pre-development storm water runoff.

Accordingly, **Standard Condition SC HYD-3** is proposed to ensure post-development runoff does not exceed pre-development runoff conditions.

SC HYD-3 ***Prior to issuance of a grading permit or other construction activities, the Project proponent shall provide the following to City staff: A Final Project-***

specific Water Quality Management Plan (WQMP) shall be submitted to the City for approval with the grading plan check application and approved by the Engineering Department prior to issuance of a grading permit. It shall incorporate, but not be limited to, the following: site design Best Management Practices (BMPs), applicable source control BMPs, treatment control BMPs, long term operation and maintenance requirements, inspection and maintenance checklist; record a restrictive covenant to ensure operation, maintenance, funding, and transfer of requirements. The post-construction BMPs outlined in the approved Final project-specific WQMP shall be incorporated in the improvement plans and shall be designed such that post-construction storm water runoff volumes do not exceed the pre-construction condition. This measure shall be implemented to the satisfaction of the City Engineer.

Adherence to the measures identified in the project-specific *WQMP* and other requirements identified and required by the City would ensure that the proposed Subsurface Infiltration Basin A servicing DMA A capture 20,203 cubic feet of storm water runoff, as designed, which would exceed the required design capture volume (DCV) of 11,779 cubic feet by approximately 175 percent, and would satisfy the estimated detention volume needed post-development for the proposed Project.

Therefore, proper engineering design and construction in conformance with the requirements of the City, the intent of the NPDES Permit for Riverside County and the City's Municipal Separate Sewer Permit within the Santa Margareta Watershed (MS4 permit), the measures established in the SWPPP, and project-specific recommendations outlined in the *WQMP* (**Standard Conditions SC HYD-1** through **SC HYD-3**) would ensure that impacts related to water quality standards or waste discharge requirements would be **less than significant**. Reference **Figure 10-3, *WQMP Site Plan***.

b) *Less Than Significant Impact.* The City of Murrieta is served by four water districts, namely:

1) Rancho California Water District (RCWD);
2) Elsinore Valley Municipal Water District (EVMWD);
3) Western Municipal Water District (WMWD); and
4) Eastern Municipal Water District (EMWD).

The Project site is located within the water service boundary of the Rancho California Water District (RCWD) and within the wastewater/sewer service boundary of the Eastern Municipal Water District (EMWD).

Projected domestic water demand in the City is expected to increase from 39,179 acre-feet per year in 2011 to 54,811 acre-feet per at buildout in the year 2035. According to the City's General Plan EIR, buildout of the City's General Plan would require only 2.36 percent of the 2030 combined water supply of the four water districts serving the City.

RCWD would provide water service for the Project site's proposed development plan. RCWD gets its water from a variety of sources. The natural sources include precipitation, untreated import water recharge basins, and regional groundwater (aquifers). RCWD also purchases treated water from the Metropolitan Water District of Southern California (MWD). MWD imports water from Northern California and the Colorado River.

Water delivered to homes and businesses within the RCWD service area is a blend of well water (50%) and imported water (45%).

The RCWD-managed groundwater basins are estimated to hold over 2 million acre-feet of water. The annual safe yield of these basins is approximately 30,000 acre-feet per year, which meets nearly half of RCWD's needs.

Surface water from Vail Lake and Lake Skinner is used to help replenish RCWD groundwater supplies through recharge operations. All aquifers managed by RCWD are located in the Santa

Margarita Watershed. Oversight of all groundwater production within the Santa Margarita Watershed falls under the continuing jurisdiction of the United States District Court, San Diego and is administered under the auspices of a court appointed water master (the "Santa Margarita Water Master"). Most of the remaining water demands are met with imported water purchased from MWD.

According to RCWD's 2015 Urban Water Management Plan (UWMP), over 90 percent of the groundwater used in MWD's service area is produced from adjudicated or managed groundwater basins.

Infiltration testing conducted January 3, 2018 on the Project site in conjunction with the *Infiltration Study*, indicated infiltration rates of 6.4 (6.4 inches per hour) and 7.0 (7.0 inches per hour) at the two test locations. Test No. 1, located in the easterly portion of the Project site, was taken at an elevation of 1136 feet above mean sea level (AMSL) and indicated an infiltration rate of 6.4; Test No. 2, located at the northwest portion of the Project site, was taken at an elevation of 1140 feet AMSL and indicated an infiltration rate of 7.0. The two tests were taken within the native soils and the results were fairly consistent. Reference **Figure 10-4, *Infiltration Test Location Map***.

As set forth in the *Geo Investigatio*n, groundwater was not encountered in either of the two exploratory trenches conducted on the Project site which were advanced to a maximum depth of 6.0 feet below ground surface on the lower elevation of the site. The Project site is located at the northerly end of the Santa Gertrudis Groundwater Unit. Historic high groundwater is anticipated to be at least 50-feet below the ground surface in the vicinity of the Project site.

Based on the above, there is no potential to directly intercept the groundwater table during development of the proposed Project that would result from Project grading and creation of the mass graded pad.

Additionally, as discussed previously in Section 10.a, to mitigate the substantial increase in impervious area associated with the proposed Project development plan, a subsurface infiltration basin has been designed (Subsurface Infiltration Basin A) in conjunction with **Standard Condition SC HYD-3** to capture 20,203 cubic feet of storm water runoff, which exceeds the required design capture volume (DCV) of 11,779 cubic feet by approximately 175 percent, thus resulting in a greater infiltration volume post-development for the proposed Project than currently exists.

Therefore, with implementation of **Standard Condition SC HYD-3,** post-development storm water runoff volume or time of concentration will not exceed pre-development conditions. Furthermore, since RCWD's 2015 UWMP concludes available water supplies would meet projected demands for normal year, single dry year, and multiple dry year scenarios through the year 2040, impacts related to the substantial decrease of groundwater supplies or interference with groundwater recharge activities are not applicable.

No component of the proposed Project would substantially decrease groundwater supplies. The Project design, as depicted on the Project plans and Project-specific WQMP, will allow for water to percolate back into the ground and allow for groundwater recharge. This will offset any impacts from the other non-pervious elements contained in the proposed Project. This standard condition is applicable to all development; therefore, it is not considered mitigation for CEQA implementation purposes.

Therefore, implementation of the proposed Project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. Any impacts will be **less than significant**.

c.i) *Less Than Significant Impact.* Please reference the discussion set forth in Section 10.a, relative to the Project design which will not substantially alter the existing drainage pattern of the site or the area.

There are no streams or rivers within, contiguous to, or adjacent to the Project site. As depicted on the Topography Map, there is a blue line stream located approximately one-quarter (¼) mile east of

the Project site, and east of Winchester Road (SR 79), that drains to the San Gertrudis Creek south/southeast of the Project site and extending west/southwest to Murrieta Creek. Reference **Figure 10-5, *Topography Map***.

Furthermore, implementation of the *WQMP* ensures that the post-Project development of the site, which substantially increases the impervious area of the Project site, does not cause or result in substantial on- or off-site erosion or siltation. Any impacts will be **less than significant**.

c.ii) *Less Than Significant Impact.* As discussed in the previous section (Sec 10.a), to mitigate the substantial increase in impervious area associated with the proposed Project development plan, a subsurface infiltration basin has been designed (Subsurface Infiltration Basin A) in conjunction with **SC HYD-3** to capture 20,203 cubic feet of storm water runoff, which exceeds the required design capture volume (DCV) of 11,779 cubic feet by approximately 175 percent, thus resulting in a greater infiltration volume post-development for the proposed Project than currently exists.

Therefore, with implementation of **Standard Condition SC HYD-3,** post-development storm water runoff volume or time of concentration will not exceed pre-development conditions. Any impacts will be **less than significant**.

c.iii) *Less Than Significant Impact.* The Project site will convey onsite flows to a subsurface system where the flows will be treated for water quality purposes and mitigate for increased runoff. The Project site will ultimately discharge into the existing Winchester Road Storm Drain located within Date Street. As discussed in Section 10.b, the design and implementation of Subsurface Infiltration Basin A will result in less runoff from the Project site than currently exists in the undeveloped condition. Any impacts will be **less than significant**.

c.iv) Less Than Significant Impact. In the existing undeveloped condition, storm water runoff at the Project site sheet flows generally north/northeast towards the existing Winchester Road Storm Drain located within Date Street. Upon completion of the Project site development plan in accordance with the *WQMP* which provides for three drainage management areas (DMA A, DMA B, & DMA C), and a subsurface infiltration basin (Subsurface Infiltration Basin A), post-development storm water run-off does not exceed pre-development storm water runoff, nor does it impede or redirect flood flows as Project flows will ultimately discharge into the existing Winchester Road Storm Drain located in Date Street. Any impacts will be **less than significant**.

d) No Impact or Does Not Apply. The Project site is not located within a FEMA designated flood hazard area or a local City/County designated "Flood Hazard Area." The Project site is located approximately 26 miles east of the nearest coastline (Pacific Ocean); therefore, the risk associated with tsunamis is negligible. Similarly, the Project site not located adjacent to a body of water; therefore, the risk associated with a seiche is negligible. Reference **Figure 10-6, *FEMA Firmette Map***.

Based on the above, the risk of pollutant release due to Project inundation caused by a flood, tsunami, or seiche is not applicable. There will be **no impact**.

e) No Impact or Does Not Apply. The Project *WQMP* has been prepared specifically to comply with the Municipal Separate Stormwater Sewer System (MS4) Permit for the Santa Margarita Region (SMR), Order No. R9-2010-0016, NPDES No. CAS0108766, Waste Discharge Requirements for Discharges from the MS4 Draining the County of Riverside, the Incorporated Cities of Riverside County, and the Riverside County Flood Control and Water Conservation District within the San Diego Region, California Regional Water Quality Control Board, November 10, 2010. With adherence to, and implementation of the conclusions and recommendations set forth in the WQMP the Project site development plan will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. There will be **no impact**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
11. LAND USE AND PLANNING: Would the Project:				
a) Physically divide an established community? (References 4, 5, 7)			**X**	
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction-adopted for the purpose of avoiding or mitigating an environmental effect? (References 4, 5, 7, 8)			**X**	

a) *Less Than Significant Impact.* The Project site is vacant and bordered by Commercial uses to the north, Single Family Residential and Multiple Family Residential uses to the south, Commercial Retail uses to the east, and Commercial uses to the west. The proposed Project consists of the development of a multi-family residential use within and adjacent to areas already developed and/or zoned for commercial and residential uses and would continue the existing pattern of development. Therefore, the proposed Project would integrate uniformly with the established and planned commercial and residential uses. General Plan designation for the Project site is "Commercial," and the site is zoned Community Commercial (CC) and Single Family Residential (SFR). The Project proposes to change the General Plan Land Use designation of the site to MFR (Multiple-Family Residential) and the zoning classification to MF3 (Multi-Family Residential).

The proposed Project would be served by fully improved public streets and other infrastructure and does not involve the subdivision of land or the creation of streets that could alter the existing surrounding pattern of development or established community. Furthermore, proposed improvements to the Project site frontage will be consistent with City standards. Therefore, a **less than significant** impact would occur to established communities from the proposed Project.

b) *Less Than Significant Impact.* The General Plan designation for the Project site is "Commercial," and the site is zoned Community Commercial (CC) and Single Family Residential (SFR). The Project proposes to change the General Plan Land Use designation of the site to MFR (Multiple-Family Residential) and the zoning classification to MF3 (Multi-Family Residential). The proposed Project will be developed in accordance with the existing land use and zoning designations, as amended.

The Project site consists of both man-made and natural slopes. Man-made slopes occur on the southerly, westerly and easterly portions of the Project site. Approximately 5.09 acres of the site are man-made and 3.28 acres of the site are natural slope. The following analysis addresses the Project's relationship to applicable portions of Section 16.24 (Hillside Development) of the City's Development Code.

Section 16.24.020.A (Hillside Area) states: "The standards contained in this chapter apply to uses and structures within areas that have slopes of twenty (20) percent or greater and/or are designated on the significant features map on file with the department.

According to Chapter 16.24 – Hillside Development, Section 16.24.020 (B. Basis for Slope Determinations) of the City's Municipal Code**,** slope shall be computed on the natural slope of the land before grading is commenced, as determined from a topographic map having a scale of not less than one inch equals one hundred (100) feet and a contour interval of not more than five feet.

The average slope on the "hillside" area is calculated to be slightly over 18%. A formula for computing average slope is contained in Section 16.24.030 (Definitions), and is presented below:

AVERAGE SLOPE COMPUTATION (NATURAL AREAS)
Contour Interval 1 Foot

Area of Natural Slope	3.28 Acres
Length of Contours	25,723 Linear Feet

Average Slope = (CI*CL*0.0023)/Acres = (1*25723*0.0023)/3.28 = 18.04%

Reference **Figure 11-1, *Average Slope Computation for Natural Areas***

The Project site is not identified on the significant features map that is on file with the City (see **Figure 11-2, *Hillside Overlay Zone***).

Section 16.24.020.D states: "The development standards, guidelines and provisions of this chapter shall be applied to those portions of land with a predominance of significant natural slopes exceeding twenty-five (25) percent and areas that are integrally contiguous, or slopes determined as significant by the director." As will be shown below, the Project does not contain a predominance of significant natural slopes exceeding twenty-five (25) percent, and/or areas that are integrally contiguous. It should be noted that natural slopes in excess of 25% constitute only 8.6% of the Project site.

This is supported by a view of the site from Google Maps (**Figure 5, *Aerial Photo***). As the "hillside" portion of the site is adjacent to Date Street and commercial development to the north. Natural slope areas exceeding 25% consists of non-contiguous small pockets, which cumulatively amount to less than 10% of the property.

Natural vs. disturbed (man-made) portions of the slopes were segregated and further analyzed and tabulated, as follows:

SLOPE RANGES

Man-Made Areas	5.09 Acres	60.8% of Property
Natural Slopes (0-25%)	2.56 Acres	30.6% of Property
Natural Slopes (25-50%)	0.67 Acres	8.0% of Property
Natural Slopes (>50%)	0.05 Acres	0.6% of Property
TOTAL SITE	8.37 Acres	100.0% of Property

Section 16.24.030 (Hillside definition) states: "Land with an average rise or fall of twenty-five (25) percent or greater or a vertical rise of thirty (30) feet or more." As stated above, the average slope on the "hillside" area is calculated to be slightly over 18%. There is a portion of this area which does have a vertical rise of over 30 feet, but the majority of this area is below that criterion. The Project will encroach into the area which does have a vertical rise of over 30 feet. As depicted on **Figure 11-3, *Site Cross Sections***, Sections A'-A' and B'-B' depicts the areas which have a vertical rise of over 30 feet. Grading needed within this area, to support the Project, is consistent with other projects of this nature and consistent with other existing projects in the Project vicinity.

Section 16.24.020.B (Structures on Sloping Parcels) states: "Where the average slope of a parcel is greater than one foot rise or fall in 7 feet of distance from the street elevation at the property line, structure height shall be measured in compliance with Chapter 16.24 (Hillside Development)." The Project does not meet two of the requirements (the 30' max building height and exceeding the building envelope limit at the western building). The City can make findings waiving or modifying these requirements pursuant to 16.24.050 C:

> "**C. Modification of Requirements.** The commission may modify or waive a development standard when an improved or more sensitive design will result. Further, where it can be demonstrated that imposing hillside development standards would either render a parcel unbuildable and create a loss of its reasonable economic use, or place an undue restriction on the improvement of the property, development consistent with the general plan shall be allowed subject to approval by the commission, if the following findings can be made:
> a. The site is physically suitable for the design and siting of the proposed development. The proposed development will result in minimum disturbance of environmentally sensitive areas;

b. The grading proposed in connection with the development will not result in soil erosion, silting of lower slopes, flooding, severe scarring or other geological instability or fire hazard that would affect health, safety and general welfare as determined by the city engineer;
c. The proposed development retains the visual quality of the site, the aesthetic qualities of the area and the neighborhood characteristics by utilizing proper structural scale and character, varied architectural treatments, and appropriate plant materials; and
d. The proposed development is in conformance with the qualitative development standards and guidelines as established in this chapter and is conformance with the goals, objectives and policies of the general plan."

In addition, Section 16.18.010B indicates that where there is a conflict between Development Code Section 16.18 and zoning, zoning will prevail. Therefore, building height limit of 100' per MF3 zoning would be applicable and would overrides the 30' max in Development Code.

Lastly, it should be noted that the very steep portion of the property (50%) is actually a deep erosional gully, which is a result of prior motorcycling activity.

Based on all of these factors, any impacts pertaining to the Hillside Ordinance are considered **less than significant**.

The proposed Project uses are consistent with uses permitted under the General Plan land use and zoning designations for the Project site, as amended, and, as detailed throughout this Initial Study, all impacts to the environment resulting from the proposed Project are subject to applicable mitigation and local, State and/or federal regulations which would reduce those impacts to less than significant levels. Therefore, the Project will not cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction adopted for the purpose of avoiding or mitigating an environmental effect. Impacts will be **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
12. MINERAL RESOURCES: Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (References 2)			**X**	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (References 2)				**X**

a) *Less Than Significant Impact.* Per the General Plan EIR, the Project site is classified as MRZ-3a (an area containing known mineral occurrences of undetermined mineral resource significance). The MRZ-3a designation in Murrieta contains two types of potential deposits: sand and gravel, and crushed stone. However, no mineral resources are known to occur on the Project site, nor has the Project site been previously used for mineral extraction. The Project site has minimal potential to be mined in the future because it is surrounded by commercial and residential development and is not considered a state designated mineral resource extraction zone. Therefore, development of the Project site would not result in the loss of a known mineral resource that would be of value to the region and residents of the State. Impacts will be **less than significant**.

b) *No Impact or Does Not Apply.* Exhibit 5.12-1 of the General Plan EIR depicts local mineral resource recovery sites. The Project site is not located within or adjacent to any such site;

therefore, the proposed Project would not result in the loss of any locally important mineral resources. **No impacts** will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
13. NOISE/VIBRATION: Would the Project result in:				
a) 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? (References 2 30)		**X**		
b) Generation of excessive groundborne vibration or groundborne noise levels? (References 2, 30)			**X**	
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? (References 2, 6, 30)				**X**

Any tables or figures in this section are from the *Noise Impact Study*, unless otherwise noted.

a) *Less than Significant with Mitigation Incorporated.* A project would normally have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. Regarding noise-related environmental impacts, the closest sensitive receptors to the Project site are the single-family residences approximately 80 feet south of the Project. These nearby sensitive uses could potentially be subject to noise-related environmental impacts from construction and operation at the Project site.

Fundamentals of Noise

- ***Sound, Noise, and Acoustics***

The sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. The sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

- ***Frequency and Hertz***

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

- ***Sound Pressure Levels and Decibels***

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases, as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or Lp) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels and abbreviated as dB.

- ***Addition of Decibels***

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two (2) sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3dB increase. If two (2) sounds differ by approximately 10 dB the higher sound level is the predominant sound.

- ***Human Response to Changes in Noise Levels***

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. The A-scale weighing is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in the noise level of 3 dB. A change in 5 dB isreadily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway), would result in a barely perceptible change in sound level.

- ***Noise Descriptors***

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels. Following are the most commonly used noise descriptors along with brief definitions.

A-Weighted Sound Level

The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level

The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL)

The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB)

A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A)

A-weighted sound level (see definitionabove).

Equivalent Sound Level (LEQ)

The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sampleperiod.

Habitable Room

Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n)

The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly, L50, L90, and L99, etc.

Noise

Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area

Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yardareas).

Percent Noise Levels

See L(n).

Sound Level (Noise Level)

The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.
Sound Level Meter

An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL)

The dBA level which, if it lasted for one (1) second, would produce the same A-weighted sound energy as the actual event.

- Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors:

(1) Volume of traffic;
(2) Speed of traffic;
(3) Auto, medium truck (2 – 3 wheels) and heavy truck percentage (4 axles and greater); and
(4) Sound propagation.

The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume of noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

- ***Sound Propagation***

As sound propagates from a source it spreads geometrically. The sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use the hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at an additional rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 6.0 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity, and turbulence can further impact how far sound can travel.

City of Murrieta Noise Regulations

The City of Murrieta outlines their noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code.

- *City of Murrieta General Plan*

Applicable policies and standards governing environmental noise in the City are set forth in the General Plan Noise Element. Table 11-2 of the Murrieta Noise Element outlines the land use compatibility matrix for community noise environments. According to the matrix for multifamily residential land uses noise levels ranging from 50 - 65 dBA CNEL are normally acceptable while levels from 60 – 70 dBA CNEL are conditionally acceptable. The Project will be compared to these noise ranges.

- *City of Murrieta Noise Ordinance*

1. Construction Noise Regulations

Section 16.30.130(A) of the City of Murrieta Noise Ordinance regulates construction noise. The Noise Ordinance prohibits noise generated by construction activities between the hours of 7:00 p.m. and 7:00 a.m. and on Sundays and holidays. Construction activities shall be conducted in a manner that the maximum noise levels at the affected structures will not exceed those listed in **Table 13-1, *City of Murrieta Construction Noise Standards***.

Table 13-1
City of Murrieta Construction Noise Standards

Equipment Type	Single-Family Residential	Multi-Family Residential	Commercial
Mobile Equipment			
Daily, except Sundays and holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, except Sundays and holidays, 8:00 p.m. to 7:00 a.m.	60 dBA	64 dBA	70 dBA
Stationary Equipment			
Daily, except Sundays and holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, except Sundays and holidays, 8:00 p.m. to 7:00 a.m.	50 dBA	55 dBA	60 dBA

Project construction is anticipated to occur between 7:00 a.m. to 8 p.m., and therefore the standard would be 75 dBA.

2. Operational Noise Regulations

Section 16.30.090 and 16.30.100 of the City of Murrieta Noise Ordinance regulates exterior and interior operational noise generated between two properties and does not regulate noise from transportation sources. **Table 13-2, *City of Murrieta Exterior and Interior Noise Limits*** is the same as Section 16.30.90 and 16.30.100 (below). **Table 13-2** was developed to provide an overview of the City's Development Code Section 16.30.90 and 16.30.100 but should not be applied as the interior noise level limit for transportation noise sources (the City's Noise Element discusses this in further detail on page 11-6 of the Noise Element).

Table 13-2
City of Murrieta Exterior and Interior Noise Limits

Noise Zone	Land Use (Receptor Property)	Time Period	Allowed Exterior Noise Level (dBA)
Exterior Noise Limits			
I	Noise Sensitive area	Anytime	45
II	Residential Properties	10:00 p.m. to 7:00 a.m.	45
		7:00 a.m. to 10:00 p.m.	50
	Residential Properties within 500 feet of a kennel(s)	7:00 a.m. to 10:00 p.m.	70
III	Commercial Properties	10:00 p.m. to 7:00 a.m.	55
		7:00 a.m. to 10:00 p.m.	60
IV	Industrial Properties	Anytime	70
Interior Noise Limits			
All Noise Zones	Multi-family residential	10:00 p.m. to 7:00 a.m.	40
		7:00 a.m. to 10:00 p.m.	45

Table 13-2 provides an overall summary of allowable noise levels (Exterior/Interior) associated with Operational Noise between two properties. **Table 13-2** summarizes the values found within Section 16.30.90 and 16.30.100. **Table 13-2** and Section 16.30.100B establish an interior noise limit of 45 dBA Leq during daytime hours and 40 dBA Leq during nighttime hours for multi-family. Operational noise typically refers to stationary noise levels such as HVAC units, compressors, pumps, loudspeakers and other noise associated with non-transportation noise sources. These interior noise limits would not be associated with the application of forcing a development to build separating assemblies (building facades, demising walls) such that the interior level is 40 dBA but rather designed to limit the amount of noise intrusion from one property to the other.

Study Method and Procedures

The following discussion describes the measurement procedures, measurement locations, and noise modeling procedures and assumptions used in the *NIS*.

- *Measurement Procedures and Criteria*

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses;
- Locations that are acoustically representative and equivalent of the area of concern;
- Human land usage; and
- Sites clear of major obstruction and contamination.

Sound level measurements were conducted in accordance with Caltrans technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed five (5) feet above the ground for all short-term noise measurements;
- Sound level meters were calibrated before and after each measurement;
- Following the calibration of equipment, a windscreen was placed over the microphone;
- Frequency weighting was set on “A” and slow response;
- Results of the short-term noise measurements were recorded on field data sheets;
- During any short-term noise measurements, any noise contaminations such as barking

dogs, local traffic, lawn mowers, or aircraft fly-overs were noted; and
- Temperature and sky conditions were observed and documented.

- *Noise Measurement Locations*

Noise monitoring locations were selected based on the distance of the Project's stationary noise sources to the nearest sensitive on-site receptors. Long-term noise measurements were conducted near the northeastern corner of the Project site and represent ambient levels at the site. Appendix A o the NIS includes photos, field sheet, and measured noise data. **Figure 13-1, *Measurement Location*** illustrates the location of the measurements.

- *FHWA Traffic Noise Prediction Model/SoundPlan*

Traffic noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway volumes and percentages correspond to the Project's traffic impact study (*Traffic Impact Analysis*, **Appendix I**) and roadway classification. The following outlines the key adjustments made to the REMEL for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc.);
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway);
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks;
- Roadway grade and angle of view;
- Site Conditions (e.g. soft vs. hard); and
- Percentage of total ADT which flows each hour through-out a 24-hour period.

Table 13-3, *Roadway Parameters and Vehicle Distribution* indicates the roadway parameters and vehicle distribution utilized for this study.

Table 13-3
Roadway Parameters and Vehicle Distribution

Roadway	Segment	Existing ADT	Existing Plus Project ADT	Speed (MPH)	Site Conditions
Murrieta Hot Springs	Margarita Rd. to Delhaven St.	35,958	41,090	45	Soft
Murrieta Hot Springs	Delhaven St to Winchester Rd.	39,679	40,289	45	Soft
Winchester Rd.	North of Murrieta Hot Springs	37,300	37,800	55	Soft
Winchester Rd.	South of Murrieta Hot Springs	43,500	44,100	55	Soft
Major Arterial Vehicle Distribution (Truck Mix)[2]					
Motor-Vehicle Type		**Daytime % (7:00 a.m. to 7:00 p.m.)**	**Evening % (7:00 p.m. to 10:00 p.m.)**	**Night % (10:00 p.m. to 7:00 a.m.)**	**Total % of Traffic Flow**
Automobiles		75.5	14.0	10.4	92.00
Medium Trucks		48.0	2.0	50.0	3.00
Heavy Trucks		48.0	2.0	50.0	5.00
Secondary and Collector Vehicle Distribution (Truck Mix)[2]					
Motor-Vehicle Type		**Daytime % (7:00 a.m. to 7:00 p.m.)**	**Evening % (7:00 p.m. to 10:00 p.m.)**	**Night % (10:00 p.m. to 7:00 a.m.)**	**Total % of Traffic Flow**
Automobiles		75.5	14.0	10.5	97.42
Medium Trucks		48.9	2.2	48.9	1.84
Heavy Trucks		47.3	5.4	47.3	0.74

Notes:
[1] Per *Traffic Impact Analysis* (**Appendix I**)
[2] Vehicle distribution data is based on Riverside County Mix data for collectors and secondary roadways.

The following outlines key adjustments to the REMEL for Project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source);
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor);
- Traffic noise source spectra; and
- Topography.

The SoundPLAN (SP) acoustic modeling software was utilized to illustrate the traffic noise level projections to the Project site and on-site receptors. The worst-case traffic noise was modeled using SP acoustical modeling software. SP is capable of evaluating traffic noise levels following the FHWA's traffic noise model (TNM) which incorporates the FHWA's RD-77-108 software program. The programs use the same information as provide in **Table 13-3** and allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

Existing 24-hour baseline noise data was utilized to calibrate the SP model. The model incorporates the traffic volumes along the subject roadway and demonstrates the noise levels at the Project site at the various floor heights.

- *Interior Noise Modeling*

The interior noise level is the difference between the projected exterior noise level at the structure's facade and the noise reduction provided by the structure itself. Typical building construction will provide

a conservative 12 dBA noise level reduction with a "windows open" condition and a very conservative 20 dBA noise level reduction with "windows closed." The interior noise level was estimated by subtracting the building shell design from the predicted exterior noise level. With the "windows closed" the Project will require mechanical fresh air ventilation (e.g. air conditioning) to the habitable dwelling units.

- *FHWA Roadway Construction Noise Model*

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the Project site.

The Project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the grading, concrete and building phases of construction. It is estimated that construction will occur over a year to year and a half time period. Construction noise is expected to be the loudest during the grading, concrete, and building phases.

Existing Noise Environment

A twenty-four (24) hour ambient noise measurement was conducted at the Project site approximately 417 feet from the center of Murrieta Hot Springs Road and 235 feet from the center of Winchester Road. The measurement measured the 1-hour Leq, Lmin, Lmax and other statistical data (e.g. L2, L8). The noise measurement was taken to determine the existing baseline noise conditions.

- *Long-Term Noise Measurement Results*

The results of the Long-term noise data are presented in **Table 13-4, *Long-Term Noise Measurement Data (dBA)***. Long-term noise monitoring location (LT1) is illustrated in **Figure 13-1, *Measurement Location***.

Table 13-4
Long-Term Noise Measurement Data (dBA)[1]

Date	Time	1-Hour dB(A)							
		L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
11/19/2018	10AM-11AM	66.6	78.6	59.9	77.3	75.7	67.5	61.9	60.4
11/19/2018	11AM-12PM	65.7	97.0	59.6	95.2	87.3	64.6	61.8	60.2
11/19/2018	12PM-1PM	56.8	67.7	57.1	67.1	66.2	62.8	60.2	57.6
11/19/2018	1PM-2PM	57.6	76.9	56.4	74.0	66.5	62.9	61.9	57.9
11/19/2018	2PM-3PM	59.2	79.6	57.1	78.7	71.8	66.1	62.2	58.5
11/19/2018	3PM-4PM	60.1	81.7	59.5	79.8	75.5	70.4	67.6	60.6
11/19/2018	4PM-5PM	59.9	82.7	58.9	80.1	71.1	67.3	63.1	61.0
11/19/2018	5PM-6PM	58.8	75.4	58.2	75.2	71.8	63.8	61.2	58.9
11/19/2018	6PM-7PM	59.6	75.7	58.6	74.0	69.7	67.3	65.0	60.4
11/19/2018	7PM-8PM	59.1	74.0	59.0	73.2	67.1	64.4	62.6	60.0
11/19/2018	8PM-9PM	57.8	73.5	54.9	71.4	67.5	62.7	61.8	56.6
11/19/2018	9PM-10PM	57.7	77.6	56.5	76.4	67.5	66.1	62.9	56.9
11/19/2018	10PM-11PM	56.5	69.6	54.5	68.7	65.4	62.8	59.7	55.6
11/19/2018	11PM-12AM	54.8	73.8	52.5	73.0	69.8	61.8	57.3	54.1
11/20/2018	12AM-1AM	56.1	81.3	51.5	80.9	77.5	62.4	57.9	52.2
11/20/2018	1AM-2AM	51.2	68.2	52.5	67.8	65.4	58.6	56.2	54.4
11/20/2018	2AM-3AM	52.2	77.6	49.7	76.5	71.1	58.8	54.2	50.2
11/20/2018	3AM-4AM	53.2	66.0	51.2	65.4	62.8	59.9	56.4	52.6
11/20/2018	4AM-5AM	57.5	75.8	55.6	74.7	69.1	64.1	61.2	57.2
11/20/2018	5AM-6AM	59.6	79.8	56.1	79.1	72.7	64.9	62.4	60.2
11/20/2018	6AM-7AM	59.9	75.8	60.2	75.2	69.2	64.1	62.7	61.3
11/20/2018	7AM-8AM	59.7	79.6	56.1	79.3	73.9	66.0	62.8	59.5
11/20/2018	8AM-9AM	58.4	73.3	58.4	72.9	69.5	64.7	61.7	59.4
11/20/2018	9AM-10AM	58.2	75.6	57.3	75.1	71.6	64.8	60.7	58.3
CNEL		64.2							

Noise data indicates the ambient hourly level ranged between 51.2 dBA to 66.6 dBA near the Project site. Maximum levels reach 66.6 dBA during the 10:00 a.m. to 11:00 a.m. hour. The quietest noise level measured 51.2 dBA during the 1:00 a.m. to 2:00 a.m. hour. The measured CNEL at or near the Project site was 64.2 dBA CNEL.

The existing measured CNEL level (64.2 dBA CNEL) was utilized to establish baseline conditions and as a calibration point for acoustic modeling purposes. When comparing the acoustic model to the measured CNEL there is a 2 dBA difference at the calibration point. The model shows that it is 2 dBA quieter. A 2 dBA difference is acceptable for calibration purposes due to the fact that it takes a 3 dBA difference for the ear to hear a perceptible difference. The 2 dBA difference is attributed to the typography and noise from the gas station which is approximately 110 feet away from the calibration point.

Construction Noise Impact

The degree of construction noise may vary for different areas of the Project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

The Environmental Protection Agency (EPA) has compiled data regarding the noise generated characteristics of typical construction activities. The data is presented in **Table 13-5, *Typical Construction Noise Levels***.

Table 13-5
Typical Construction Noise Levels

Equipment Powered by Internal Combustion Engines

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

Impact Equipment

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Construction is anticipated to occur during the permissible hours according the City's Municipal Code. Construction noise is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times as described in the City's Municipal Code (Section 16.30.130(A)). Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the Project vicinity.

Typical 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. Noise levels will be loudest during grading phase. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, an excavator, and three (3) backhoes operating at 80 feet from the nearest sensitive receptor. The nearest off-site sensitive receptors (residential uses) are located approximately 80 feet to the south of the Project.

Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels at 80 feet have the potential to reach 71 dBA L_{eq} and 72 dBA L_{max} at the nearest sensitive receptors during grading which takes into account the existing 6 to 7-foot wall at the property line separating the Project site from residences. The existing wall will provide approximately 11 dB of reduction due to the height and current design. Noise levels for the other construction phases would be lower and range between 56 to 57 dBA. The impact would be considered less than significant since the construction noise levels are below the City's 75 dBA construction noise limit. While the impacts are less than significant without any mitigation required, the **Standard Condition SC NOI-1** and **Mitigation Measures MM NOI-1** through **MM NOI-4** shall be required to further ensure that construction activities do not disrupt the adjacent land uses:

SC NOI-1 Construction should occur during the permissible hours as defined in Section 16.30.130.

MM NOI-1 During construction, the contactor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.

MM NOI-2 The contractor should locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the Project site during all Project construction.

MM NOI-3 Idling equipment should be turned off when not in use.

MM NOI-4 Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

Future Noise Environment

This assessment analyzes future noise impacts to and from the Project compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadway sources.

- *Noise Impacts to Off-Site Receptors Due to Project Generated Traffic*

A worst-case Project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated 50 feet from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in noise level with and without Project conditions. In addition, the noise contours for 60, 65 and 70 dBA CNEL were calculated. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed Project on the nearby roadways were calculated for the following scenarios:

  - *Existing Year (without Project)*: This scenario refers to existing year traffic noise conditions.

  - *Existing Year (Plus Project)*: This scenario refers to existing year + Project traffic noise conditions.

Table 13-6, *Existing Scenario - Noise Levels Along Roadways (dBA CNEL)* compares the without and with Project scenario and shows the change in traffic noise levels as a result of the proposed Project. It takes a change of 3 dB or more to hear a perceptible difference. As demonstrated in **Table 13-6**, the Project is anticipated to change the noise up to 0.6 dBA CNEL. Although there is a nominal increase along these roadways, the proposed increase would still be below the City's conditionally acceptable 60 to 70 dBA CNEL residential and multi-family standard at any off-site receptors. Furthermore, the existing plus Project scenario indicates that the contours extend at maximum an additional 8-feet beyond the existing condition. The change in noise level is less than significant as the noise increase is nominal (less than a 3-dBA change). No impacts will occur.

Table 13-6
Existing Scenario - Noise Levels Along Roadways (dBA CNEL)

Existing Without Project Exterior Noise Levels

Roadway	Segment	CNEL at 50 Ft. (dBA)	Distance to Contour (Ft.)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Murrieta Hot Springs Rd.	Margarita Rd to Delhaven St.	75.4	114	246	531	1,144
Murrieta Hot Springs Rd.	Delhaven St to Winchester Rd.	75.8	122	263	567	1,221
Winchester Rd.	North of Murrieta Hot Springs Rd.	80.5	251	540	1,164	2,509
Winchester Rd.	South of Murrieta Hot Springs Rd.	81.2	278	599	1,290	2,780

Existing With Project Exterior Noise Levels

Roadway	Segment	CNEL at 50 Ft. (dBA)	Distance to Contour (Ft.)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Murrieta Hot Springs Rd.	Margarita Rd to Delhaven St.	76.0	125	269	580	1,250
Murrieta Hot Springs Rd.	Delhaven St to Winchester Rd.	75.9	123	266	573	1,234
Winchester Rd.	North of Murrieta Hot Springs Rd.	80.6	253	545	1,175	2,531
Winchester Rd.	South of Murrieta Hot Springs Rd.	81.2	281	604	1,302	2,805

Change in Existing Noise Levels as a Result of Project

Roadway[1]	Segment	CNEL at 50 Ft. dBA[2]			
		Existing Without Project	Existing With Project[3]	Change in Noise Level	Potential Significant Impact
Murrieta Hot Springs Rd.	Margarita Rd. to Delhaven St.	75.4	76.0	0.6	No
Murrieta Hot Springs Rd.	Delhaven St. to Winchester Rd.	75.8	75.9	0.1	No
Winchester Rd.	North of Murrieta Hot Springs Rd.	80.5	80.6	0.1	No
Winchester Rd.	South of Murrieta Hot Springs Rd.	81.2	81.2	0.1	No

Notes:
[1] Exterior noise levels calculated at 5 feet above ground level.
[2] Noise levels calculated from centerline of subject roadway.
[3] Noise level projected 100 feet from centerline.

- *Noise Impacts to On-Site Receptors Due to Traffic*

Traffic noise from the local roadway network was evaluated and compared to the City's noise compatibility matrix. Per the City's Noise Compatibility Matrix (Table 11-2, page 11-5 from the City's General Plan, Noise Element), multi-family residential is conditionally acceptable up to 70 dBA CNEL. As shown in **Table 13-6**, Existing Plus Project traffic 70 dBA CNEL noise projections from the Winchester Road will reach up to 281 feet from the centerline of the road. Residential structures are located approximately 300 feet away from the centerline of Winchester Road and fall within the 65 to 70 dBA CNEL contour of Winchester Road and are located within the conditionally acceptable region. In addition, the residential structures are located approximately 700 feet away from the centerline of Murrieta Hot Springs Road and fall under the 50 – 65 dBA CNEL contour (normally acceptable region of the land use compatibility matrix).

Figure 13-2, *Existing Plus Project Traffic CNEL Noise Contours* shows the existing plus Project traffic CNEL noise levels/contours to the Project site. A total of twelve (12) receptors were modeled to evaluate the traffic noise impact to the Project site. A receptor is denoted by a yellow dot. All yellow dots represent either a calibration point or the building facade for floors 1 through 3. Receptor one (R1) is a calibration point and compared to the baseline noise data from **Table 13-4**. Traffic noise levels at the building facades are anticipated to range between 51.8 to 64.9 dBA CNEL at residential receptors (R2 – R12), as shown in **Figure 13-2**.

According to the matrix for multifamily residential land uses noise levels ranging from 50 - 65 dBA CNEL are normally acceptable while levels from 60 – 70 dBA CNEL are conditionally acceptable. To mitigate exterior to interior noise levels to the multifamily uses, the Project shall implement noise control solutions to mitigate interior noise levels down to 45 dBA CNEL which requires a noise reduction of at least 20 dBA or more.

- *Noise Impacts to Receptors Due to Stationary Noise*

Section 16.30.90/100 of the City of Murrieta Noise Ordinance Exterior/Interior Noise Standards and Chapter 11 of the City of Murrieta's Noise Element, Operational Noise governs operational noise generated between two properties and does not regulate noise from transportation sources, such as traffic, aircraft, and railways. The interior limit as defined within the ordinance is not designed as a noise limit for transportation noise. Instead it is designed to limit operational stationary noise sources (e.g. AC unit, pump, compressor).

Noises associated with the Project (e.g. roof top AC units, pool and other stationary noise sources) will comply with said ordinance due to Project design features such as the AC units placed on the roof-top and pool equipment positioned and shielded away from sensitive uses. **Mitigation Measures MM NOI-5** and **MM NOI-6** shall be implemented to meet the City's interior noise standard:

MM NOI-5: During plan check the Project applicant shall provide building designs that shall achieve a minimum 20 dBA noise reduction in the resident building shell design to meet the City's 45 dBA CNEL interior residential requirement.

MM NOI-6 Prior issuance of building permits, the Project applicant shall prepare a final noise study based on the architectural building design verifying compliance to the 45 dBA CNEL interior noise limit.

Furthermore, the Project is required to adhere to Title 24 Chapter 12 Section 1207 building code requirements which has been developed to limit unit to unit intrusion noise. With the incorporation of **Mitigation Measures MM NOI-5** and **MM NOI-6** any impacts will be reduced to a **less than significant** level.

Interior Noise Levels

Normal building shell construction is expected to provide a 20 dB of exterior to interior noise reduction as long as the air condition/circulation is provided to allow a closed window condition. In order to comply with the City's noise requirements, **Mitigation Measures MM NOI-5** and **MM NOI-6** shall be implemented.

In summary, during construction the Project will not result in the 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 City's General Plan or Noise Ordinance. While the impacts are **less than significant** without any mitigation required, the **Standard Condition SC NOI-1** and **Mitigation Measures MM NOI-1** through **MM NOI-4** shall be required to further ensure that construction activities do not disrupt the adjacent land uses. During operations the Project will result in the 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 City's General Plan or Noise Ordinance. With the incorporation of **Mitigation Measures MM NOI-5** and **MM NOI-6** any impacts will be reduced to a **less than significant** level.

b) *Less Than Significant Impact.* Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise

radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude.

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

There are three main types of vibration propagation: surface, compression, and shear waves.

- Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water.
- P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves.
- S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed Project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a bull dozer. A large bull dozer has a vibration impact of 0.089 inches per second PPV at 25 feet which is perceptible but below any risk to architectural damage.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. This drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^{n}$$

Where: PPV_{ref} = reference PPV at 100ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.1 (the value related to the attenuation rate through ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in **Table 13-7, *Guideline Vibration Damage Potential Threshold Criteria***, provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 13-7
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 13-8, *Vibration Source Levels for Construction Equipment*, gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 13-8
Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

At a distance of 80 feet, a large bull dozer would yield a worst-case 0.025 PPV (in/sec), which slightly perceptible, but sustainably below any risk of damage (0.5 in/sec PPV is the threshold of residential structures). Therefore, the Project will not result in the generation of excessive groundborne vibration or groundborne noise levels. Any impacts will be **less than significant**.

c) *No Impact or Does Not Apply*. The Project is located within Zone D of the French Valley Airport and is physically located approximately 1.18 miles southwesterly of the runway for the French Valley Airport. According to the GP EIR (p. 5.7-37):

"*There is one primary source of air traffic affecting noise levels within the City of Murrieta; the French Valley (Rancho California) Airport, located outside the City's sphere of influence. Aircraft flyovers are heard occasionally in the City; however, the aircraft do not contribute a significant amount of noise heard in the City. The Riverside County Airport Land Use Commission has prepared a Comprehensive Land Use Plan for the French Valley Airport (CLUP)...The CLUP indicates only a few parcel on the City's eastern boundary close to SR-79 are within the 55 CNEL noise level contour; the remainder of the 55 CNEL noise level contour is located outside of City boundaries.*"

Therefore, the Project expose people residing or working in the Project area to excessive noise levels from this public use airport. There are no private use airports within a 2 mile radius of the Project site. **No impacts** will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
14. POPULATION AND HOUSING: Would the Project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (References 1, 2, 31)			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (References 6)				**X**

a) *Less Than Significant Impact.* As reported by the State of California Department of Finance, the 2018 population of Murrieta is approximately 113,541. According to the Table 5.2-3, Population Estimates and Projections of the GP EIR (p. 5.2-4), Murrieta is projected to have a population of 127,962 persons at buildout year 2035. The Project proposes 234 single-family residences and would have a build-out population of approximately 702 persons (based on 3.0 persons per residential household). The addition of 702 new residents would be approximately 0.55 percent of the City's anticipated population of 127,962 persons at buildout. Although the Project proposes to change the General Plan land use designation from mostly non-residential to residential designation, the proposed change and implementing development from it would be accommodating existing growth and would not be substantial enough of a change to reasonably exceed population projections. Although the Project will incrementally increase population growth in the area, the proposed Project will not induce substantial population growth. Impacts will be **less than significant**.

b) *No Impact or Does not Apply.* The proposed Project site is undeveloped. No existing people or residences would be displaced as a result of this Project; therefore, the Project will not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **No impacts** will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
15. 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				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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? (References 1)			**X**	
b) Police protection? (References 1)			**X**	
c) Schools? (References 1, 18, 32, 33)			**X**	
d) Parks? (References 1, 8)			**X**	
e) Other public facilities? (References 8)			**X**	

a) *Less Than Significant Impact.* The Project site is served by the Murrieta Fire Department (MFD). The closest City fire station to the Project site is Station #3 located at 39985 Whitewood Road (approximately 1½ miles west/northwest of the Project site). Furthermore, the City maintains a mutual aid agreement with the California Department of Forestry and Fire Protection (CAL FIRE) and Station #83 is located ±1.85 miles north/northeast of the Project site at 35700 Sky Canyon Road.

The proposed Project would add approximately 234 multi-family residential dwelling units in eight freestanding buildings. According to the City's General Plan EIR, fire protection for the City at buildout would be feasible based on the existing fire stations and provisions for additional equipment as buildout occurs. The General Plan EIR finding is based on continuing to be able to meet 90 percent of urban calls within a 6.5-minute target response time. The Project site is within a distance (approximately 1½ miles) to where any future calls can be responded to within 6.5 minutes.

All development within the City is required to comply with the latest edition of the Uniform Fire Code (UFC), California Fire Code (CFC), and other applicable building and fire standards. All construction on the Project site would be required to comply with these building codes. Based on review of the Project site plan by the MFD, the Project site would have adequate hydrants to meet fire protection demand, and the proponent has provided both a primary and secondary ingress/egress configuration to ensure adequate Fire Department access to the site.

The Project site development plan proposes 234 multi-family residential units which would incrementally add to the existing demand for fire protection services. The MFD is independently funded through a combination of ad valorem tax and parcel assessment. The MFD is a subsidiary district of the City of Murrieta and maintains an independent revenue stream through the tax rolls dating back to 1947. In addition, capital improvements are funded through Development Impact Fees (DIFs) and special Development Agreement Fees. Incremental impacts attributed to the Project would be reduced through the payment of Fire Department DIFs.

With the implementation of General Plan policies, compliance with existing codes and standards, payment of DIFs, and through Fire Department review of the proposed Project, impacts on the demand for additional fire facilities or services would be **less than significant**. No new or altered fire protection facilities would be needed.

b) *Less Than Significant Impact.* The Project site is currently vacant, unimproved land in the southeast portion of the City of Murrieta. Law enforcement services are provided by the Murrieta Police Department (MPD). The MPD is located at 2 Town Square (approximately 4.0 miles west/northwest of the Project site).

In addition, the City maintains mutual aid agreements with the Riverside County Sheriff's Department, the City of Hemet, and the California Highway Patrol. The Sheriff's Department serves the Murrieta Sphere of Influence Area, with a Southwest Station located at 30755-A Auld Road near

the French Valley Airport (approximately 2½ miles north/northeast of the Project site). The California Highway Patrol has jurisdiction along I-15 and I-215.

As set forth in the City's General Plan, Safety Element (p. 12-17), new multi-family housing developments going through the development review process must participate in the Crime Free Multi-Housing Program. Through this program, the Department provides recommendations for improving the safety of the developments using Crime Prevention Through Environmental Design strategies. Tenants also sign a lease addendum form, which lists criminal acts that result in immediate termination of the lease. Communication between rental property managers and the Department helps both parties to deal with problem tenants.

According to the City's General Plan EIR, law enforcement protection for the City at buildout would be feasible based on incremental expansion of the number of officers, and provisions for additional office space at the police station at One Town Square.

The Project site is located within existing patrol routes, and future calls could be responded to within the identified priority call target response times. The City seeks to respond to Priority 1 calls within 6 minutes; Priority 2 calls with 15 minutes and Priority 3 calls within 35 minutes. Although the City performs slightly below its objectives, review of the proposed Project by the City Police Department would ensure the on-site design features such as multiple ingress/egress routes, perimeter lighting, and surveillance and alarm systems would comply with the General Plan Safety Element goals to enhance community safety, protect life and property, and reduce crime.]

The construction of the proposed Project would incrementally increase the need for police protection. The project's potential impacts on law enforcement facilities and staffing would be offset by payment of the DIF at the time of building permit issuance. Funding for continued operation and maintenance will be provided by the City of Murrieta's General Fund and through special revenue funds.
With adherence to on-site security measures required by the City and payment of the City's mandatory DIF fee, the proposed Project would not increase demand for law enforcement services to a point that new or altered police facilities would be required. Impacts will be **less than significant**.

c) *Less Than Significant Impact.* Implementation of the proposed Project (234 multi-family residential units) would result in an incremental impact on the demand for school services. The proposed Project is located with the Murrieta Valley Unified School District (MVUSD). According to the MVUSD web-site, the District which serves grades K-12, was established July 1, 1989 and has grown to a 2017/18 enrollment of approximately 23,385 students.

The following student generation factors are utilized by MVUSD for multi-family residential units:

- Elementary school: 0.1502/dwelling unit
- Middle school: 0.0800/dwelling unit
- High school: 0.1087/dwelling unit

Based on 234 multi-family residential units, the Project would generate the following number of students, below. In practical terms, these numbers would be added to other projects; since you cannot have a "fraction" of a student.

- Elementary school: 37.2
- Middle school: 19.8
- High school: 27.0

Impacts to MVUSD facilities will be offset through the payment of impact fees to the MVUSD, prior to the issuance of a building permit. According to the "Developer Fees" page of the MVUSD web-site, residential rates are currently $3.79 per square foot. This fee is subject to change, and the applicable fees, at time of building permit issuance, shall apply.

The development impact fee program of the District adequately provides for reducing the impacts of the proposed Project in accordance with *California Government Code* Section 65995 and *California Education Code* Section 17620.

As required of all development, the proposed Project would be required to pay applicable development fees established by the District prior to the issuance of permits. Payment of required school development fees sufficiently offsets any impact the proposed Project would have on school services and facilities. Therefore, impacts on school facilities will be **less than significant**.

d) *Less Than Significant Impact.* Implementation of the proposed Project (234 multi-family residential units) would result in an incremental impact on the demand for park services.

Chapter 16.106.030 of the Murrieta *Municipal Code* specifies Parks and Recreation Facility dedications or fees that must be paid to the City when development occurs, in compliance with the Quimby Act (*California Government Code* Section 66477). Additionally, Chapter 16.36.020 of the *Municipal Code* states that a developer shall pay a public facilities development impact fee (DIF) for each building which is part of a residential development, in an amount established by resolution of the city council, upon issuance of a building permit for that building. Payment of the DIF is a standard condition applicable to all new development within the City.

Payment of required public facilities development fees sufficiently offsets any impact the proposed Project would have on park services and recreational facilities. Therefore, impacts on parks and recreational facilities would be **less than significant**.

e) *Less Than Significant Impact.* Prior to the issuance of a building permit, the proposed Project would be required to pay the City's current DIF for open space acquisition and implementation of the MSHCP, and other public services. Payment of the DIF, which is considered a standard condition, would offset the impacts to MSHCP open space acquisition and other public services to a **less than significant** level.

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact or Does Not Apply**
16. RECREATION: Would the Project:				
a) 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? (References 2, 7, 8)			**X**	
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (References 7, 8)			**X**	

a) *Less Than Significant Impact.* Implementation of the proposed Project (234 multi-family residential units) would result in an incremental impact on the demand for park services.

Chapter 16.106.030 of the Murrieta *Municipal Code* specifies Parks and Recreation Facility dedications or fees that must be paid to the City when development occurs, in compliance with the Quimby Act (*California Government Code* Section 66477). Additionally, Chapter 16.36.020 of the *Municipal Code* states that a developer shall pay a public facilities development impact fee (DIF) for each building which is part of a residential development, in an amount established by resolution of the city council, upon issuance of a building permit for that building. Payment of the DIF is a standard condition applicable to all new development within the City.

Payment of required public facilities development fees sufficiently offsets any impact the proposed Project would have on park services and recreational facilities. Therefore, while the Project will

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, any impacts will be **less than significant**.

b) *Less Than Significant Impact.* The Project includes private recreational facilities that will include a pool and covered picnic area, near the Date Street entry, that will have benches and grills/counters, and there will be a tot lot play area, near building 5, with covered picnic area that will also have benches and grills/counters. which will be developed concurrently with the overall Project. The effects of the construction and operations of these facilities have been addressed in other Sections of this Initial Study (i.e., Air Quality, Biology, Cultural Resources, etc.). Based on the analysis contained in these other Sections, as a worst case, impacts from the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment would be **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
17. TRANSPORTATION: Would the Project:				
a) Conflict with program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (References 34)		**X**		
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (References 35, 11)				**X**
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (References 6, 7)			**X**	
d) Result in inadequate emergency access? (References 7, 8)			**X**	

Any tables or figures in this section are from the *TIA*, unless otherwise noted.

a) *Less Than Significant with Mitigation Incorporated.* A Traffic Impact Analysis (*TIA)* was prepared to evaluate potential circulation system deficiencies that may result from development of the proposed Project, and to recommend improvements to achieve acceptable operations, if applicable. Primary site access is planned at one full access driveway aligned as the southern leg of the Delhaven Street/Date Street intersection. Secondary egress only/emergency access is planned at the intersection of Bahama Way and Rising Hills Drive. For the purpose of the *TIA*, all peak hour trips were assumed to utilize the primary access. The proposed Project is anticipated to be built and generating trips in 2020.

The following five (5) intersections in the vicinity of the Project site have been included in the intersection level of service (LOS) analysis based on execution of a scoping agreement with the City of Murrieta (included as Appendix A of the *TIA*):

- Margarita Street (NS) at Murrieta Hot Springs Road (EW);
- Delhaven Street (NS) at Date Street (EW);
- Delhaven Street (NS) at Murrieta Hot Springs Road (EW);
- Winchester Road (SR-79) (NS) at Murrieta Hot Springs Road (EW); and
- Winchester Road (SR-79) (NS) at Nicholas Road (EW).

The Project will have secondary, emergency-only access at Rising Hills Drive/Bahama Way. Therefore, the *TIA* assumes all trips associated with the Project utilize the primary access aligned with the Delhaven Street/Date Street intersection.

The current alignment of State Route 79 (SR-79) traverses Winchester Road in the study area.

The *TIA* follows the applicable guidelines in the following documents:

- *City of Murrieta Traffic Impact Analysis Preparation Guide (October 2013)*
- *County of Riverside Transportation Department Traffic Impact Analysis Preparation Guide (April 2008)*
- *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002)*.

The TIA analyzed the following study scenarios:

- Existing Conditions;
- Existing Plus Project Conditions (EP);
- Existing Plus Ambient Growth;
- Existing Plus Ambient Plus Project (EAP) Conditions; and
- Existing Plus Ambient Plus Project Plus Cumulative (EAPC) Conditions.

Traffic operations are evaluated for the following time periods:

- Weekday AM Peak Hour occurring within 7:00 a.m. to 9:00 a.m.; and
- Weekday PM Peak Hour occurring within 4:00 p.m. to 6:00 p.m.

Analysis Methodology

- *Intersection Analysis – City of Murrieta/County of Riverside/Caltrans*

Level of Service (LOS) is commonly used to describe the quality of flow on roadways and at intersections using a range of LOS from LOS A (free flow with little congestion) to LOS F (severely congested conditions). The definitions for LOS for interruption of traffic flow differ depending on the type of traffic control (traffic signal, unsignalized intersection with side street stops, unsignalized intersection with all-way stops). The Highway Capacity Manual (HCM) 2010 methodology expresses the LOS of an intersection in terms of delay time for the intersection approaches. The HCM methodology utilizes different procedures for different types of intersection control.

The City of Murrieta, County of Riverside and Caltrans traffic study guidelines require signalized intersection operations be analyzed utilizing the HCM 2010 methodology. Intersection LOS for signalized intersections is based on the intersections average control delay for all movements at the intersection during the peak hour. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 17-1, *HCM – LOS & Delay Ranges – Signalized Intersections* describes the general characteristics of traffic flow and accompanying delay ranges at signalized intersections.

Table 17-1
HCM – LOS & Delay Ranges – Signalized Intersections

LEVEL OF SERVICE	DESCRIPTION	DELAY (in seconds)
A	Very favorable progression; most vehicles arrive during green signal and do not stop. Short cycle lengths.	0 – 10.00
B	Good progression, short cycle lengths. More vehicles stop than for LOS A.	10.01 – 20.00
C	Fair progression; longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, though many vehicles still pass through without stopping.	20.01 – 35.00
D	Progression less favorable, longer cycle length and high flow/capacity ratio. The proportion of vehicles that pass through without stopping diminishes. Individual cycle failures are obvious.	35.01 – 55.00
E	Severe congestion with some long-standing queues on critical approaches. Poor progression, long cycle lengths and high flow/capacity ratio. Individual cycle failures are frequent.	55.01 – 80.00
F	Very poor progression, long cycle lengths and many individual cycle failures. Arrival flow rates exceed capacity of intersection.	> 80.01

Collected peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. It is a common practice in LOS analysis to conservatively use a peak 15-minute flow rate applied to the entire hour to derive flow rates in vehicles per hour that are used in the LOS analysis. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume. PHF = [Hourly Volume]/[4 * Peak 15-Minute Volume]. The use of a 15-minute PHF produces a more detailed and conservative analysis compared to analyzing vehicles per hour. Existing PHFs, obtained from the existing traffic counts have been used for all analysis scenarios in the *TIA*.

The City of Murrieta, County of Riverside, and Caltrans traffic study guidelines also require unsignalized intersection operations be analyzed utilizing the HCM 2010 methodology. Intersection operation for unsignalized intersections is based on the weighted average control delay expressed in seconds per vehicle.

At a two-way or side-street stop-controlled intersection, LOS is calculated for each stop-controlled minor street movement, for the left-turn movement(s) from the major street, and for the intersection as a whole. For approaches consisting of a single lane, the delay is calculated as the average of all movements in that lane. For all-way stop-controlled intersection, LOS is computed for the intersection as a whole.

Table 17-2, *HCM – LOS & Delay Ranges – Unsignalized Intersections* describes the general characteristics of traffic flow and accompanying delay ranges at unsignalized intersections.

Table 17-2
HCM – LOS & Delay Ranges – Unsignalized Intersections

LEVEL OF SERVICE	DESCRIPTION	DELAY (in seconds)
A	Little or no delays.	0 – 10.00
B	Short traffic delays.	10.01 – 15.00
C	Average traffic delays.	15.01 – 25.00
D	Long traffic delays. Multiple vehicles in queue.	25.01 – 35.00
E	Very long delays. Demand approaching capacity of intersection	35.01 – 50.00
F	Very constrained flow with extreme delays and intersection capacity exceeded.	> 50.01

Study intersections under the jurisdiction of Caltrans have been analyzed per the *Caltrans Guide for the Preparation of Traffic Impact* Studies, which also requires intersections be analyzed utilizing the HCM 2010 methodology.

The *TIA* utilized the Synchro 10 analysis software for all signalized and unsignalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis specified in Chapter 16 of the HCM. The level of service and capacity analysis performed within Synchro takes the optimization and coordination of signalized intersections within a network into consideration.

- *Roadway Segment Capacity Analysis*

Roadway segment operations were evaluated using the roadway segment capacity thresholds contained in *Murrieta General Plan 2013 (July 2011)*. The daily roadway segment capacity for each type of roadway is shown in **Table 17-3, *City of Murrieta Roadway Segment Thresholds***. Roadway capacities tend to be "rule of thumb" estimated for planning purposes and are affected by factors such as intersection spacing, configuration and control, access control, roadway grade, design geometrics, sight distance and vehicle mix. Typically, when ADT-based roadway segment analysis indicates a deficiency, a review of peak hour operation of the intersections on either end of the segment is undertaken. The more detailed peak hour intersection operation analysis takes into account the factors that affect roadway capacity; unless the peak hour intersection analysis indicates the need for additional through lanes, roadway segment widening is not recommended on the basis of ADT analysis alone.

Table 17-3
City of Murrieta Roadway Segment Thresholds

Facility	Number of Lanes	Maximum Two-Way Volume (ADT)		
		LOS C	LOS D	LOS E
Freeway	4	61,200	68,900	76,500
Freeway	6	94,000	105,800	117,500
Freeway	8	128,400	144,500	160,500
Freeway	10	160,500	180,500	200,600
Expressway	4	32,700	36,800	40,900
Expressway	6	49,000	55,200	61,300
Multi-Modal Corridor	4	28,700	32,300	35,900
Multi-Modal Corridor	6	43,100	48,500	53,900
Augmented Urban Arterial	8	57,400	64,600	71,800
Urban Arterial	6	43,100	48,500	53,900
Arterial	4	28,700	32,300	35,900
Arterial	6	43,100	48,500	53,900
Major	4	27,300	30,700	34,100
Secondary	4	20,700	23,300	25,900
Collector	2	10,400	11,700	13,000

Notes:
1. All capacity figures are based on optimum conditions and are intended as guidelines for planning purposed only.
2. Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables, as defined in the Riverside County Congestion Management Program.

- *Traffic Signal Warrant Analysis Methodology*

Traffic signal warrants refer to a list of established criteria utilized by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an unsignalized location. This analysis uses the signal warrant criteria in the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) as amended by the 2014 California MUTCD (CA MUTCD), Revision 3, effective March 9, 2018, for all unsignalized, non-driveway study intersections.

The CA MUTCD contains nine different signal warrants for existing conditions based on several different factors such as vehicular volumes, pedestrian volumes, accident frequency, location of schools and location of railroad tracks. The TIA utilized the peak hour volume-based warrant (Warrant 3) as the appropriate traffic signal warrant analysis for all analysis. Warrant 3 is appropriate for the analysis because it provides specialized criteria for intersections with rural characteristics.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal *may be* warranted. Satisfying a signal warrant does not require that a traffic signal be installed at a particular location, rather other traffic factors and conditions should be evaluated to determine if signalization is justified. Additionally, signal warrants do not necessarily

correlate with level of service; an intersection may satisfy a warrant and still be operating at or better than LOS D, or be operating at a deficient LOS (E or F) and not meet signal warrants.

Performance Criteria

- *City of Murrieta*

The City of Murrieta considers the following types of impacts to be "significant" under CEQA:

- When existing traffic conditions (Analysis Scenario 1) exceed the General Plan target LOS.
- When project traffic, when added to existing traffic (EAP conditions), will deteriorate the LOS to below the target LOS, and impacts cannot be mitigated through project conditions of approval.
- When cumulative traffic (EAPC conditions) exceeds the target LOS, and impacts cannot be mitigated through existing infrastructure funding mechanisms.

In the *TIA*, impacts are identified and categorized based on the following criteria in adherence with City guidelines and CEQA:

- When the pre-Project conditions are at or better than acceptable LOS (LOS D or better for intersections, LOS C or better for roadway segments), and proposed project generated traffic causes deterioration to unacceptable LOS, a significant direct impact is deemed to occur.
- When the pre-project conditions are already deficient, and the project is anticipated to contribute traffic to the location, the project's contribution to the cumulative impact is considered cumulatively considerable.

- *Caltrans*

Impacts to State Highway intersections will be considered significant if:

- The Project causes the LOS of a State Highway intersection to degrade from LOS D or better to LOS E or F; or
- At State Highway intersections operating at LOS E or F for pre-project conditions, Caltrans threshold of significance is to maintain the pre-project measure of effectiveness for the intersection.

The proposed significance thresholds above will be applied at study area intersections for the purposes of determining Project-related impacts.

Existing Circulation Network/Study Area Conditions

The characteristics of the roadway system in the vicinity of the proposed Project site are described in ***Table 17-4, Roadway Characteristics Within Study Area.***

Table 17-4
Roadway Characteristics Within Study Area

Roadway	Classification[1]	Jurisdiction	General Direction	Existing Travel Lanes	Median Type[2]	Speed Limit (mph)	On-Street Parking
Murrieta Hot Springs Road	Multi-Modal Transportation Corridor	Murrieta	East-West	4-6[3]	RLM-TWLTL[2]	45-50[7]	No
Winchester Road (SR-79)	Expressway	Caltrans, County of Riverside	North-South	6	RLM-TWLTL[2]	55	No
Margarita Road	Major	Murrieta	North-South	2-4[4]	RLM-TWLTL[2]	25-45[8]	No
Date Street	Major	Murrieta	NE-SW	2-4[5]	TWLTL-NM[2]	25-45[9]	No
Delhaven Street	Local	Murrieta	North-South	2	NM[2]	25	No
Nicholas Road	Local	County of Riverside	East-West	2-4[6]	NM-PM[2]	45	No

[1] Sources: City of Murrieta General Plan Circulation Element (2011)
[2] RLM = Raised Landscaped Median, TWLTL = Two-Way Left-Turn Lane, PM = Painted Median, NM = No Median.
[3] Six-lanes west of Margarita, four-lanes between Margarita and Winchester, four -lanes east of Winchester. Widening of MHSR from 4- to 6-lanes between Margarita and Winchester is a fully funded project with an expected completion date of Late 2019.
[4] Four-lanes south of MHSR, two-lanes north of MHSR.
[5] Four-lanes between Margarita and Winchester Creek, two-lanes adjacent Project site.
[6] Two-lanes west of Winchester, four-lanes east of Winchester.
[7] 45mph west of Winchester, 50mph east of Winchester.
[8] 25mph north of MHSR, 45mph south of MHSR.
[9] 25mph adjacent project site, 45mph between Margarita and Winchester Creek.

Figure 17-1, *Existing Lane Geometry and Intersection Controls* shows existing conditions study area intersection and roadway geometry.

Based on direction provided by City staff, the *TIA* did not assume the construction of Date Street between Winchester Creek Avenue and Murrieta Hot Springs Road and signalization of the Murrieta Hot Springs Road/New Date Street intersection for any analysis scenarios since the proposed extension is not yet fully funded.

Existing Bicycle and Pedestrian Facilities

Within the study area, Class II on-street bicycle lanes exist on the following roadways:

- Nicholas Road east of Winchester Road
- Date Street between Winchester Creek Avenue and Margarita Road
- Margarita Road between Murrieta Hot Springs Road and Winchester Road
- Murrieta Hot Springs Road between Alta Murrieta Drive and Margarita Road

According to the Murrieta General Plan Circulation Element, Class II on-street bicycle lanes are planned on Murrieta Hot Springs Road between Margarita Road and Winchester Road and on Date Street between its current terminus and Murrieta Hot Springs Road when the Date Street extension is constructed.

Sidewalks and curb ramps at intersections are generally present where development has occurred within the study area, and absent where development has yet to occur.

Existing Public Transit Services

The City of Murrieta is served by the Riverside Transit Agency which provides local and regional bus service throughout Riverside County. There are two bus routes with stops within one-quarter mile of the Project site.

- **Riverside Transit Route 23** travels between Wildomar, Murrieta and Temecula. In the vicinity of the proposed Project, Route 23 runs along Murrieta Hot Springs Road and Winchester Road with stops on Murrieta Hot Springs Road at Delhaven Road (eastbound direction) and Winchester Road (westbound direction). Route 23 runs from approximately 5:00 a.m. to 8:00 p.m. on weekdays with headways of 50-60 minutes and from 7:00 a.m. to 7:00 p.m. with headways of 60 minutes on weekends.
- **Riverside Transit Route 79** travels between Hemet and Winchester. In the vicinity of the proposed Project, Route 79 runs along Winchester Road with a stop at the Murrieta Hot Springs Road/Winchester Road intersection. Route 79 runs from approximately 5:00 a.m. to 8:00 p.m. on weekdays with headways of 60-75 minutes, and on Saturdays from 6:00 a.m. to 8:00 p.m. with headways of 60-75 minutes.

There are no other transit facilities within one-quarter mile of the proposed Project site.

Existing Traffic Volumes

To determine the existing operation of the study intersections, AM and PM peak period traffic counts at the study intersections and 24-hour average daily traffic counts at the study roadway segment were collected on Thursday May 24, 2018. The traffic volumes used in this analysis are from the highest hour within the peak period counted.

Existing Conditions Intersection Level of Service Analysis

Existing conditions AM and PM peak hour intersection analysis is shown in **Table 17-5, *Intersection Analysis – Existing Conditions***.

Table 17-5
Intersection Analysis – Existing Conditions

Intersection	Control Type	Peak Hour	Existing Conditions
			Delay[1] - LOS
Margarita Road/Murrieta Hot Springs Road	Signal	AM PM	35.1 – D 40.2 – D
Delhaven Street/Date Street	OWSC	AM PM	0.0 – A[2] 0.0 – A[2]
Delhaven Street/Murrieta Hot Springs Road	TWSC	AM PM	**154.9 – F** **369.4 – F**
Winchester Road/Murrieta Hot Springs Road	Signal	AM PM	**59.1 – E** **74.1 – E**
Winchester Road/Nicholas Road	Signal	AM PM	40.6 – D 45.1 – D

Note: OWSC = One-Way Stop-Control; TWSC = Two-Way Stop-Control.
Delay shown in seconds per vehicle. Unacceptable intersection operation shown in bold.
[1] Per the 2010 Highway Capacity Manual, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.
[2] Intersection currently only has southbound and westbound legs and functions as a 'knuckle' with no conflicting movements.

As shown in **Table 17-5**, the intersections are currently operating at an acceptable LOS (LOS D or better) during the AM and PM peak hours with the exception of the following intersections:

- Delhaven Street/Murrieta Hot Springs Road (Minor Street movements LOS F AM and PM peak hour); and
- Winchester Road/Murrieta Hot Springs Road (LOS E AM & PM Peak Hour).

Existing Conditions Roadway Segment Level Of Service Analysis

Table 17-6, *Roadway Segment Analysis – Existing Conditions* summarizes existing conditions roadway segment analysis based on the LOS E capacities provided in the Murrieta General Plan Circulation Element.

Table 17-6
Roadway Segment Analysis – Existing Conditions

Roadway Segment	Existing Cross Section	LOS E Capacity	Existing		
			ADT	V/C	LOS
Murrieta Hot Springs Road between Margarita Road and Delhaven Street	4D	35,900	39,958	1.11	F
Murrieta Hot Springs Road between Delhaven Street and Winchester Road	4D	35,900	39,679	1.11	F

Note: 4D = four-lane divided roadway. V/C = volume to capacity ratio.

As shown in **Table 17-6**, the study roadway segments are currently operating at an unacceptable LOS.

Existing Conditions Signal Warrant Analysis

Traffic signal warrants for existing conditions have been prepared based on existing peak hour intersection volumes at the unsignalized study intersections. **Table 17-7, *Signal Warrant Analysis – Existing Conditions*** summarizes the results of the signal warrant analysis.

Table 17-7
Signal Warrant Analysis – Existing Conditions

Intersection	Signal Warrants Met?	
	AM Peak Hour	PM Peak Hour
Delhaven Street/Date Street	**No**	**No**

Peak hour signal warrants are not met at any unsignalized study intersections for existing conditions.

Project Trip Generation

Trip generation represents the amount of traffic, both inbound and outbound, produced by a development. Determining trip generation for a proposed Project is based on projecting the amount of traffic that the specific land uses being proposed will produce. Industry standard *Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017)* trip generation rates were used to determine trip generation of the proposed Project.

Table 17-8, *Projected Trip Generation of Proposed Project* shows the ITE 10th Edition trip generation rates used to calculate projected trip generation of the proposed Project, as well as the projected trip generation of the proposed Project based on those rates.

Table 17-8
Projected Trip Generation of Proposed Project

Proposed Land Use[1]	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Apartments (220)	238 DU	7.32	1742	0.46	23:77	25	84	109	0.56	63:37	84	49	133

[1] Rates from ITE Trip Generation (10th Edition, 2017) DU =dwelling unit
Source: ITE Trip Generation, 10th Edition (2017).

As shown in **Table 17-8,** the proposed Project is forecast to generate approximately 109 AM peak hour trips, 133 PM peak hour trips and 1,742 daily trips.

Project Trip Distribution

Projecting trip distribution involves the process of identifying probable destinations and traffic routes that will be utilized by the proposed Project's traffic. The potential interaction between the proposed land use and surrounding regional access routes are considered to identify the probable routes onto which project traffic would distribute. The projected trip distribution for the proposed Project is based on anticipated travel patterns to and from the Project site.

Figure 17-2, *Trip Distribution of Proposed Project Trips at Study Intersections* shows the projected trip distribution of proposed Project trips for EP and EAP conditions.

Modal Split

The traffic reducing potential of public transit, walking and bicycling have not been considered in this analysis since transit facilities in the study area are limited.

Project Trip Assignment

Figure 17-3, *Projected PCE Trip Assignment of Proposed Trips* shows the corresponding projected AM/PM peak hour trip assignment of projected proposed Project trips for EP and EAP conditions.

Cumulative Projects Traffic

CEQA guidelines require that other reasonably foreseeable development projects which are either approved or are currently being processed in the study area also be included as part of a cumulative analysis scenario. A list of cumulative projects for inclusion in the *TIA* was provided by City of Murrieta staff. A summary of the cumulative projects land uses is shown in **Table 17-9, *Summary of Cumulative Projects*.** **Figure 17-4, *Cumulative Project Map*** shows the location of the cumulative projects.

Table 17-9
Summary of Cumulative Projects

#	Project Name/Description	Land Use	Quantity
1	Certified Tire & Services (DP-2016-1153)	Auto Care	6.2 TSF, 10 bays
2	Golden Eagle (DP-2012-3267)	Apartments	112 DU
3	Murrieta 196	Apartments	196 DU
4	TTM 31251	Single Family Homes	8 DU
5	Adobe Springs (TTM-2015-518)	Single Family Homes Business Park	287 DU 208.5 TSF
6	Murrieta Market Place (DP-2017-1370)	Shopping Center 3 Gas Stations (2 with convenience stores)	567.672 TSF 36 VFP (total of all 3 stations)
7	Aldi Food Market (DP-2017-1529)	Supermarket	19.056 TSF
8	Date Street Shopping Center (DP-2016-1176)	Shopping Center	24.874 TSF
9	MHS20	Gas Station w/ Conv. Store Automated Car Wash and Quick Lube Facility	12 VFP 1 Tunnel 2 Bays

Note: TSF = thousand square feet. DU = Dwelling Unit, NA = Data Not Available

Since the City has indicated that the MHS20 cumulative project is responsible for construction of the Date Street Extension to Murrieta Hot Springs Road, EAPC conditions analysis assumes a slightly different trip distribution to account for the circulation system change. **Figure 17-5, *Trip Distribution of Proposed Project Trips for EAPC Conditions (w/Date Street)***, shows the projected trip distribution of proposed Project trips for EAPC conditions, and **Figure 17-6, *Trip Distribution of Proposed Project Trips for EAPC Conditions (w/o Date Street)*** shows the corresponding projected trip assignment of proposed Project trips for EAPC conditions.

Existing Plus Project Conditions (EP)

Existing plus project (EP) conditions analysis is intended to identify the Project-related impacts on the existing circulation system by comparing EP conditions to existing conditions.

- *Roadway Improvements*

The lane configurations and traffic controls assumed to be in place for the existing plus project scenario are consistent with those previously shown in **Figure 17-1**, with the following exceptions:

- Murrieta Hot Springs Road will be improved from four-lanes to six-lanes between Margarita Road and Winchester Road as part of the City's Capital Improvement Program project CIP 8079.
- Construction of a raised median on Murrieta Hot Spring Road will prohibit left-turn movements into and out of Delhaven Street at Murrieta Hot Springs Road as part of the City's Capital Improvement Program project CIP 8079.
- Project driveways and other facilities assumed to be constructed by the proposed project to provide site access, which includes construction of the south leg of the Delhaven Street/Date Street intersection.

Based on direction provided by City staff, this analysis does not assume the construction of Date Street between Winchester Creek Avenue and Murrieta Hot Springs Road and signalization of the Murrieta Hot Springs Road/New Date Street intersection for the EP and EAP analysis scenarios but assumes construction of the Date Street extension for the EAPC scenario since MHS20 cumulative project is being conditioned to construct the extension.

- *EP Traffic Volumes*

EP volumes include existing traffic plus the addition of the traffic projected to be generated by the proposed Project.

EP Volumes = Existing (2018) Counts + Project Traffic

Additionally, with the restriction of Delhaven Street to right-in/right-out only operation, existing traffic volumes have been redistributed to reflect the change. Until the construction of the Date Street extension, vehicles wishing to head westbound on Murrieta Hot Springs Road at Delhaven Street would be required to turn right onto Murrieta Hot Springs Road and make a U-turn at the Winchester Road/Murrieta Hot Springs Road intersection.

- *EP Intersection Level of Service Analysis*

EP conditions AM and PM peak hour intersection analysis is shown in **Table 17-10, *Intersection Analysis – EP Conditions***. Calculations are based on the existing geometrics at the study area intersections as shown in **Figure 17-1**.

Table 17-10
Intersection Analysis – EP Conditions

Intersection	Peak Hour	Existing Conditions	EP Conditions		
		Delay[1] – LOS	Delay[1] – LOS	Change	Impact?
Margarita Road/Murrieta Hot Springs Road	AM PM	35.1 – D 40.2 – D	35.9 – D 42.2 – D	0.8 2.0	No
Delhaven Street/Date Street	AM PM	0.0 – A2 0.0 – A2	– A – A	7.4 7.5	No
Delhaven Street/Murrieta Hot Springs Road	AM PM	154.9 – F 369.4 – F	21.7 – C 21.9 – C	-133.2 -347.5	No
Winchester Road/Murrieta Hot Springs Road	AM PM	59.1 – E 74.1 – E	68.8 – E 85.8 – F	9.7 11.7	Yes, Cumulative
Winchester Road/Nicholas Road	AM PM	40.6 – D 45.1 – D	43.0 – D 45.6 – D	2.4 0.5	No

Note: Delay shown in seconds per vehicle.
[1] Per the 2010 Highway Capacity Manual, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown in **Table 17-10**, the study intersections are projected to continue to operate at an acceptable LOS during the AM and PM peak hours for *EP* conditions with the exception of the Winchester Road/Murrieta Hot Springs Road intersection which is projected to continue to operate at LOS E/F during the AM/PM peak hour.

Based on the thresholds of significance for *EP* conditions, the addition of Project generated trips is not projected to have a significant direct impact at any of the study intersections since the deficiently operating Winchester Road/Murrieta Hot Springs Road intersection operates at a deficient LOS pre-Project. According to recent case law such as *Los Angeles Unified Sch. Dist. V City of Los Angeles* (1997) 58 CalApp4th 1019 and *Communities for a Better Env't v California Resources Agency* (2002) 103 CalApp 4th 98, a project that results in an increase to an impact that already exceeds the established thresholds contributes to a cumulative impact as opposed to a direct impact. Mitigation of the cumulative impacts at the Winchester Road/Murrieta Hot Springs Road intersection will be discussed in the *Existing Plus Ambient Plus Project Plus Cumulatives* (EAPC) scenario.

- *EP Roadway Segment Level of Service Analysis*

Table 17-11, *Roadway Segment Analysis – EP Conditions*, summarizes *EP* conditions roadway segment analysis based on the LOS E capacities provided in the Murrieta General Plan Circulation Element, previously summarized in **Table 17-3**.

Table 17-11
Roadway Segment Analysis – EP Conditions

Roadway Segment	Existing Cross Section	LOS E Capacity	Existing Plus Project		
			ADT	V/C	LOS
Murrieta Hot Springs Road between Margarita Road and Delhaven Street	6D	53,900	41,090	0.762	C
Murrieta Hot Springs Road between Delhaven Street and Winchester Road	6D	53,900	40,289	0.767	C

Note: 4D = four-lane divided roadway. V/C = volume to capacity ratio.

As shown in **Table 17-11**, the study roadway segment is projected to operate at an acceptable for *EP* conditions assuming completion of the widening of Murrieta Hot Springs Road from four-lanes to six-lanes between Margarita Road and Winchester Road.

- *EP Conditions Signal Warrant Analysis*

Traffic signal warrants for existing conditions have been prepared based on EAP peak hour intersection volumes at the unsignalized study intersections and Project site access locations. **Table 17-12, *Signal Warrant Analysis – EP Conditions*** summarizes the results of the signal warrant analysis.

Table 17-12
Signal Warrant Analysis – EP Conditions

Intersection	Signal Warrants Met?	
	AM Peak Hour	PM Peak Hour
Delhaven Street/Date Street	No	No

Peak hour signal warrants are projected to not be met at any unsignalized study intersections for EAP conditions.

Since the addition of Project generated trips is not projected to have a significant direct impact on any of the study facilities, no improvements are required for *EAP* conditions.

Existing Plus Ambient Plus Project Conditions (EAP)

Existing plus ambient plus project (EAP) conditions analysis is intended to identify the Project-related impacts on both the planned near-term circulation system by comparing EAP conditions to existing conditions. EAP analysis is intended to identify "opening year" impacts associated with the development of the proposed Project based on the expected background growth within the study area.

- *Roadway Improvements*

The lane configurations and traffic controls assumed to be in place for the existing plus Project scenario are consistent with those previously shown in **Figure 17-1**, with the following exceptions:

- Murrieta Hot Springs Road will be improved from four-lanes to six-lanes between Margarita Road and Winchester Road as part of the City's Capital Improvement Program project CIP 8079.
- Construction of a raised median on Murrieta Hot Spring Road will prohibit left-turn movements into and out of Delhaven Street at Murrieta Hot Springs Road as part of the City's Capital Improvement Program project CIP 8079.
- Project driveways and other facilities Project driveways and other facilities assumed to be constructed by the proposed project to provide site access, which includes construction of the south leg of the Delhaven Street/Date Street intersection.

Based on direction provided by City staff, the *TIA* did not assume the construction of Date Street between Winchester Creek Avenue and Murrieta Hot Springs Road and signalization of the Murrieta Hot Springs Road/New Date Street intersection for the EP and EAP analysis scenarios but assumes construction of the Date Street extension for the EAPC scenario since MHS20 cumulative project is being conditioned to construct the extension.

- EAP *Traffic Volumes*

EAP volumes include background traffic plus the addition of the traffic projected to be generated by the proposed Project. Since the proposed Project is expected to be built and generating trips in 2020, *EAP* volumes include an ambient growth rate of 2% per year for two years, applied to existing volumes.

EAP Volumes = (Existing (2018) Counts * 1.02^2) + Project Traffic

With the restriction of Delhaven Street to right-in/right-out only operation, existing traffic volumes have been redistributed to reflect the change. Until the construction of the Date Street extension, vehicles wishing to head westbound on Murrieta Hot Springs Road at Delhaven Street would be required to turn right onto Murrieta Hot Springs Road and make a U-turn at the Winchester Road/Murrieta Hot Springs Road intersection.

- *EAP Intersection Level of Service Analysis*

EAP conditions AM and PM peak hour intersection analysis is shown in **Table 17-13, *Intersection Analysis – EAP Conditions.*** Calculations are based on the existing geometrics at the study area intersections as shown in **Figure 17-1**.

Table 17-13
Intersection Analysis – EAP Conditions

Intersection	Peak Hour	Existing Conditions	EAP Conditions		
		Delay[1] – LOS	Delay[1] – LOS	Change	Impact?
Margarita Road/Murrieta Hot Springs Road	AM PM	35.1 – D 40.2 – D	40.0 – D 47.9 – D	4.9 7.7	No
Delhaven Street/Date Street	AM PM	0.0 – A[2] 0.0 – A[2]	– A – A	7.4 7.5	No
Delhaven Street/Murrieta Hot Springs Road	AM PM	**154.9 – F** **369.4 – F**	22.8 – C 23.1 – C	-132.1 -373.3	No
Winchester Road/Murrieta Hot Springs Road	AM PM	**59.1 – E** **74.1 – E**	**75.0 – F** **90.8 – F**	15.9 16.7	Yes, Cumulative
Winchester Road/Nicholas Road	AM PM	40.6 – D 45.1 – D	49.9 – D 50.5 – D	9.0 5.4	No

Note: Delay shown in seconds per vehicle.
1 Per the 2010 Highway Capacity Manual, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown in **Table 17-13**, the study intersections are projected to continue to operate at an acceptable LOS during the AM and PM peak hours for *EAP* conditions, with the exception of the Winchester Road/Murrieta Hot Springs Road intersection which is projected to operate at LOS F during both peak hours.

Based on the thresholds of significance for *EAP* conditions previously discussed above, the addition of Project generated trips is not projected to have a significant direct impact at any of the study intersections since the deficiently operating Winchester Road/Murrieta Hot Springs Road intersection operates at a deficient LOS pre-Project. Mitigation of the cumulative impacts at the Winchester Road/Murrieta Hot Springs Road intersection will be discussed in the *Existing Plus Ambient Plus Project Plus Cumulatives* (EAPC) scenario.

- *EAP Roadway Segment Level of Service Analysis*

Table 17-14, *Roadway Segment Analysis – EAP Conditions*, summarizes *EAP* conditions roadway segment analysis based on the LOS E capacities provided in the Murrieta General Plan Circulation Element, previously summarized in **Table 17-3**.

Table 17-14
Roadway Segment Analysis – EAP Conditions

Roadway Segment	EAP Cross Section	LOS E Capacity	EAP		
			ADT	V/C	LOS
Murrieta Hot Springs Road between Margarita Road and Delhaven Street	6D	53,900	42,704	0.792	C
Murrieta Hot Springs Road between Delhaven Street and Winchester Road	6D	53,900	41,892	0.777	C

Note: 6D = six-lane divided roadway. V/C = volume to capacity ratio.

As shown in **Table 17-14**, the study roadway segments are projected to operate at an acceptable LOS for *EAP conditions* assuming completion of the widening of Murrieta Hot Springs Road from four-lanes to six-lanes between Margarita Road and Winchester Road.

- *EAP Conditions Signal Warrant Analysis*

Traffic signal warrants for existing conditions have been prepared based on EAP peak hour intersection volumes at the unsignalized study intersections and Project site access locations. **Table 17-15, *Signal Warrant Analysis – EAP Conditions*** summarizes the results of the signal warrant analysis.

Table 17-15
Signal Warrant Analysis – EAP Conditions

Intersection	Signal Warrants Met?	
	AM Peak Hour	PM Peak Hour
Delhaven Street/Date Street	No	No

Peak hour signal warrants are projected to not be met at any unsignalized study intersections for EAP conditions.
Since the addition of Project generated trips is not projected to have a significant direct impact on any of the study facilities, no improvements are required for *EAP* conditions.

Existing Plus Ambient Plus Project Plus Cumulative Conditions

Existing plus ambient plus project plus cumulative (EAPC) conditions analysis is intended to identify the Project-related cumulative impacts on both the existing and planned near-term circulation system.

- *Roadway Improvements*

The lane configurations and traffic controls assumed to be in place for the *EAPC* scenario are consistent with those previously shown in **Figure 17-1**, with the following exceptions:

- Murrieta Hot Springs Road will be improved from four-lanes to six-lanes between Margarita Road and Winchester Road as part of the City's Capital Improvement Program project CIP 8079.
- Construction of a raised median on Murrieta Hot Spring Road will prohibit left-turn movements into and out of Delhaven Street at Murrieta Hot Springs Road as part of the City's Capital Improvement Program project CIP 8079.
- Project driveways and other facilities Project driveways and other facilities assumed to be constructed by the proposed Project to provide site access, which includes construction of the south leg of the Delhaven Street/Date Street intersection.
- Extension of Date Street to Murrieta Hot Springs Road and creation of a signalized intersection at Date Street/Murrieta Hot Springs Road.

- *EAPC Traffic Volumes*

EAPC volumes include background traffic plus the addition of the traffic projected to be generated by the proposed Project and traffic projected to be generated by cumulative developments in the vicinity of the proposed Project which are in various stages of planning, entitlement and construction. Since the proposed Project is expected to be built and generating trips in 2020, *EAPC* volumes include an ambient growth rate of 2% per year for two years, applied to existing volumes.

EAPC Volumes = (Existing (2018) Counts * 1.02^2) + Project Traffic + Cumulative

- EAPC Conditions Intersection Level of Service Analysis

EAPC conditions AM and PM peak hour intersection analysis is shown in **Table 17-16, *Intersection Analysis – EPAC Conditions***.

Table 17-16
Intersection Analysis – EAPC Conditions

Intersection	Peak Hour	EAPC (2020) Conditions
		Delay[1] – LOS
Margarita Road/Murrieta Hot Springs Road	AM PM	44.2 – D 37.0 – D
Date Street/Murrieta Hot Springs Road	AM PM	23.7 – C 17.8 – B
Delhaven Street/Old Date Street	AM PM	7.6 – A 8.1 – A
Delhaven Street/Murrieta Hot Springs Road	AM PM	26.3 – D 34.0 – D
Winchester Road/Murrieta Hot Springs Road	AM PM	**112.8 – F** **108.1 – F**
Winchester Road/Nicholas Road	AM PM	42.1 – D 54.1 – D

Note: Delay shown in seconds per vehicle.
[1] Per the 2010 Highway Capacity Manual, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown **Table 17-16**, the study intersections are projected to operate an acceptable LOS (LOS D or better) for EAPC conditions, with the exception of the following intersection:

- Winchester Road/Murrieta Hot Springs Road (LOS F AM and PM peak hours)

Based on the thresholds of significance for *EAPC* conditions, the addition of Project generated trips to these intersections represents a potential cumulative impact.

- *EAPC Roadway Segment Level of Service Analysis*

Table 17-17, *Roadway Segment Analysis – EPCA Condition* summarizes *EAPC* conditions roadway segment analysis based on the LOS E capacities provided in the Murrieta General Plan Circulation Element, previously summarized in ***Table 17-3***.

Table 17-17
Roadway Segment Analysis – EAPC Conditions

Roadway Segment	EAPC Cross Section	LOS E Capacity	EAPC		
			ADT	V/C	LOS
Murrieta Hot Springs Road between Margarita Road and Delhaven Street	6D	53,900	48,204	0.894	D
Murrieta Hot Springs Road between Delhaven Street and Winchester Road	6D	53,900	47,391	0.879	D

Note: 6D = six-lane divided roadway. V/C = volume to capacity ratio.

As shown in ***Table 17-17*** the study roadway segments are projected to operate at LOS D for *EAPC conditions*.

- *EAPC Conditions Signal Warrant Analysis*

Traffic signal warrants for existing conditions have been prepared based on EAPC peak hour intersection volumes at the unsignalized study intersections and Project site access locations. **Table 17-18, *Signal Warrant Analysis – EAPC Conditions*** summarizes the results of the signal warrant analysis.

Table 17-18
Signal Warrant Analysis – EAPC Conditions

Intersection	Signal Warrants Met?	
	AM Peak Hour	PM Peak Hour
Delhaven Street/Date Street	No	No

Peak hour signal warrants are not met at any unsignalized study intersections for EAPC conditions.

- *EAPC Recommended Improvements*

The City of Murrieta General Plan Circulation Element identifies the Winchester Road/Murrieta Hot Springs Road intersection and Murrieta Hot Springs Road between Margarita Avenue and Winchester Road as having significant unavoidable impacts, with no additional improvements recommended beyond the scheduled widening of Murrieta Hot Springs Road from four- to six-lanes between Via Princessa and Winchester Road. Therefore, no improvements are recommended at the Winchester Road/Murrieta Hot Springs Road intersection (projected to operate at LOS F during the AM and PM peak hours) and on Murrieta Hot Springs Road itself (roadway segments LOS D).

General Plan Analysis

The proposed Project involves a zone change/General Plan Amendment from the current zoning of neighborhood commercial to a proposed zoning of MF-3 (Multifamily-3) and from the current General Plan land use of Commercial to a proposed General Plan land use of Multi-family Residential.

This section evaluates the projected trip generation potential of the site under existing zoning compared to the projected trip generation of the currently proposed Project.

The existing 8.17-acre (356,000 square-foot) site is zoned Neighborhood Commercial, which allows a floor-area-ratio of 0.25, allowing for the development of 89,000 square feet of neighborhood commercial uses on the site.

ITE trip generation equations for the shopping center land use have been utilized to analyze the projected trip generation of the currently allowable neighborhood commercial land uses. The trip generation equations for shopping center, compared to the trip generation rates, more accurately reflect the trip generation potential of restaurants, fast-food restaurants with drive-throughs, convenience stores and other high trip generators that are allowed in Neighborhood Commercial zones in addition to retail land uses. The trip generation rates for multi-family dwelling units was used in this analysis for the proposed Project; the trip generation rates and equations for the multi-family land use produce nearly identical results.

Table 17-19, *Trip Generation Comparison – Existing Zoning and Proposed Project* compares the trip generation of the proposed Project to the trip generation potential of an 89,000 square foot neighborhood commercial center.

Table 17-19
Trip Generation Comparison – Existing Zoning and Proposed Project

Proposed Land Use[1]	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Apartments (220)	238 DU	7.32	1742	0.46	23:77	25	84	109	0.56	63:37	84	49	133
Currently Allowable General Plan Land Use[1]	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Equation	Volume	Equation	In:Out Split	Volume			Equation	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Shopping Center (820)	89.0 TSF	Ln(T) = 0.68*Ln(X) + 5.57	5554	T = 0.50(X) + 151.78	62:38	121	75	196	Ln(T) = 0.74 Ln(X) + 2.89	50:50	239	259	498
	Net Change		-3812	Net Change		-96	9	-87	Net Change		-155	-210	-365

[1] Rates/Equations from ITE Trip Generation (10th Edition, 2017) DU =dwelling unit, TSF = thousand square feet

As shown in **Table 17-19**, the proposed Project is projected to generate fewer AM peak hour, PM peak hour and daily trips than the currently allowable Neighborhood Commercial development land use.

Transportation Uniform Mitigation Fee (TUMF) and the City of Murrieta Development Impact Fee (DIF)

Transportation improvements throughout the County of Riverside are funded through a combination of direct Project mitigation, fair share contributions or development impact fee programs such as the City's adoption of the Transportation Uniform Mitigation Fee (TUMF) program and the City of Murrieta Development Impact Fee (DIF) program. It is anticipated that the proposed Project will be subject to the TUMF and the City's DIF. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

The Project's contribution to the aforementioned transportation impact fee programs or as a fair share contribution towards a cumulatively impacted facility not found to be covered by a pre-existing fee program should be considered sufficient to address the Project's fair share towards mitigation measure(s) designed to alleviate the cumulative impact.

The TUMF program is administered by the Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study completed in early 2002 and updated in 2005, 2009, 2015 and 2017 to address major changes in right of way acquisition and improvement cost factors. The TUMF program identifies network backbone and local roadways that are needed to accommodate growth through 2035. The regional program was put into place to ensure that developments pay their fair share and that funding is in place for the construction of facilities needed to maintain an

acceptable level of service for the transportation system. The TUMF is a regional mitigation fee program and is imposed and implemented in every jurisdiction in Western Riverside County.

TUMF fees are imposed on new residential, industrial and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit phase.

The proposed Project will participate in the cost of off-site improvements through payment of TUMF fees based on the current fees at the time of construction of the proposed Project. Payment of TUMF is a standard requirement and is not considered unique mitigation under CEQA.

The proposed Project is located within the City of Murrieta and will therefore be subject to the City's Development Impact Fees (DIF). The City's DIF program includes facilities that are not part of the regional TUMF program.

The proposed Project will participate in the cost of off-site improvements through payment of City DIF fees based on the current fees at the time of construction of the proposed Project. Payment of DIF is a standard requirement and is not considered unique mitigation under CEQA.

Fair Share Calculations

The proposed Project will participate in the cost of off-site improvements through payment of City DIF fees based on the current fees at the time of construction of the proposed Project. The Project's contribution to the aforementioned transportation impact fee programs or as a fair share contribution towards a cumulatively impacted facility not found to be covered by a pre-existing fee program should be considered sufficient to address the Project's fair share towards mitigation measure(s) designed to alleviate cumulative Project impacts. **Table 17-20, *Fair Share Calculations*** shows the Project's fair share contribution to the cumulatively impacted intersection of Winchester and Murrieta Hot Springs Roads.

Additionally, while the proposed project is not projected to have a significant impact at the Murrieta Hot Springs Road/Delhaven Street intersection, the City requested this analysis includes a fair share calculation at this location since there is a planned improvement to widen the eastbound Murrieta Hot Springs Road approach to include a dedicated right-turn lane. No mitigation is required for this improvement.

Table 17-20
Fair Share Calculations

Winchester Rd./Murrieta Hot Springs Road	**Existing Volume (A)**	**EAPC Volume (B)**	**Project EAPC Volume (C)**	**Project Fair Share (C) / (B-A)**
AM Peak Hour	5645	6392	100	13.39%
PM Peak Hour	6681	7759	103	9.55%
Murrieta Hot Springs Road/Delhaven Street	Existing Volume (A)	EAPC Volume (B)	Project EAPC Volume (C)	Project Fair Share (C) / (B-A)
AM Peak Hour	2632	3124	154	31.30%
PM Peak Hour	3074	3735	204	30.86%

The Project will be required, as **Mitigation Measure MM TR-1** to pay a fair share contribution towards these improvements.

MM TR-1 Prior to the issuance of building permits, the Project applicant shall pay the Project Fair Share contribution of 13.39% for impacts to the intersection of Winchester and Murrieta Hot Springs Roads.

With payment of TUMF, DIF and incorporation of **Mitigation Measure MM TR-1**, Project impacts will be reduced to a **less than significant level**.

Lastly, pursuant to the requirements of the City Development Review Committee, design of the proposed Project includes sufficient roadway and access improvements and would be consistent with the General Plan and Circulation Element. The Project is located near existing bike lanes, sidewalks, and bus routes, which would encourage the use of non-vehicular modes or travel and public transit (See response 16(f)). Therefore, the proposed Project would have a **less than significant** impact related to applicable plans, ordinances, or policies establishing measures of effectiveness for performance of the City's circulation system.

b) *No Impact or Does Not Apply.* In the fall of 2013, Senate Bill 743 (SB 743) was passed by the legislature and signed into law by the governor. For some parts of California (and eventually the entire state), this legislation will change the way that transportation studies are conducted for environmental documents. In the areas where SB 743 is implemented, delay-based metrics such as roadway capacity and level of service will no longer be the performance measures used for the determination of the transportation impacts of projects in studies conducted under CEQA. Instead, new performance measures such as Vehicle Miles Traveled (VMT) will be used.

During the preparation of the traffic impact study, guidelines for the implementation of SB 743 were not yet incorporated into CEQA. Therefore, the traffic impact study followed current practice regarding state and local guidance as of the date of preparation. In December 2018 CEQA Guidelines were updated to include a threshold for evaluating traffic impacts using the VMT methodology. This new methodology is required to be used statewide for projects beginning in or after July 2020 unless the lead agency adopts the VMT thresholds earlier. As such, and because City of Murrieta as the lead agency has not yet adopted VMT thresholds, the analysis for this Project utilizes the LOS methodology.

Notwithstanding, for purposes of full disclosure, it is estimated that the Project would generate approximately 4,473,057 annual VMT per capita, based on the California Emissions Estimator Model (CalEEMod) v2016.3.2. **No impacts** will occur.

c) *Less Than Significant Impact.* Vehicle traffic to and from the Project site would utilize the existing network of regional and local roadways that serve the Project site. Public vehicle access to the Project site would be provided via the primary entry driveway off Date Street at the northwestern side of the Project and a secondary access off Rising Hill Drive (southwestern side of the Project) will provide an emergency only access. The design of roadways must provide adequate sight distance and traffic control measures. Roadway improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control, parking, as well as incorporate design standards tailored specifically to site access requirements.

The proposed Project would not introduce any new roadways or introduce a land use that would conflict with existing urban land uses in the surrounding area. Proposed improvements to the Project site (i.e., new asphalt, curb, gutter, and sidewalk features) would be consistent with the General Plan. Design of the proposed Project, including curb cuts, ingress, egress, traffic signage, and other streetscape changes, would be subject to review and approval by the Traffic Engineering Department as part of the plan review process. Therefore, impacts related to increased hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) would be **less than significant**.

d) *Less Than Significant Impact.* The proposed Project is required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Public vehicle access to the Project site would be provided via the primary entry driveway off Date Street at the northwestern side of the Project and a secondary access off Rising Hill Drive (southwestern side of the Project) will provide an emergency only access.

The proposed Project will be constructed pursuant to the 2016 California Fire Code as adopted and amended by the City. The proposed Project structure will include installation of an automatic fire sprinkler system in accordance with *Title 16*, *Section 16.18.050* of the Murrieta Development Code and would be subject to inspection and approval by the City Fire Department prior to occupancy. Sufficient space and turning radius for fire trucks would be provided on the Project site around the proposed building. The proposed Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits.

Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. As part of the plan review process, the City would require the developer to submit a Traffic Management Plan that would provide appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. Adherence to the emergency access measures required by the City would ensure impacts related to this issue would be **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
18. TRIBAL CULTURAL RESOURCES: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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.i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? (References 13, 36, 37, 38)		**X**		
a.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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (References 13, 10)		**X**		

a.i) *Less Than Significant with Mitigation Incorporated*. Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52 or AB 52), requires Lead Agencies evaluate a project's potential to impact "tribal cultural resources." Such resources include "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical

resources." A B 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and *State CEQA Guidelines* §15064.5[a]).

"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. "California Native American tribe" is defined as "a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the Native American Heritage Commission (NAHC).

Per AB 52, Native American consultation is required upon request by interested California Native American tribes that have previously requested that the City provide them with notice of such projects. Senate Bill (SB 18) requires cities and counties to consult with California Tribal Governments anytime a city or county amends or adopts its General Plan. This Project is proposing a General Plan Amendment; therefore, SB 18 notices are also required.

The City disseminated notices of the proposed Project to eleven California Native American tribes listed below on February 21, 2019. (See reference 36, **Appendix D2**)

1. Ewiiaapaayp Band of Kumeyaay Indians
2. Jamul Indian Village
3. La Jolla Band of Luiseño Indians
4. Pala Band of Mission Indians
5. Pauma Band of Luiseño Indians
6. San Luis Rey Band of Mission Indians
7. Agua Caliente Band of Cahuilla Indians
8. Morongo Band of Mission Indians
9. Pechanga Band of Mission Indians
10. Rincon Band of Luiseño Indians
11. Soboba Band of Luiseño Indians

Of the eleven Tribes contacted, two Tribes (Agua Caliente Band of Cahuilla Indians and Morongo Band of Mission Indians) sent notices acknowledging the City's notices but did not request consultation, and three Tribes requested consultation, as outlined below. The remaining six Tribes did not respond.

On March 26, 2019, the Soboba Band of Luiseño Indians requested to initiate formal consultation with the City pursuant to California Public Resources Code 21080.3.1. The City sent the proposed Mitigation Measures for the Project to the Soboba Band of Luiseño Indians on August 14, 2019. The Tribe reviewed and concurred with the Mitigation Measures and concluded consultation via email on August 14, 2019. (See reference 36, **Appendix D2**)

On March 29, 2019, the Rincon Band of Luiseño Indians requested to initiate formal consultation with the City pursuant to California Public Resources Code 21080.3.1. The City sent the proposed Mitigation Measures for the Project to the Rincon Band of Luiseño Indians on July 30, 2019. The Tribe reviewed and concurred with the Mitigation Measures and concluded consultation via email on July 30, 2019. (See reference 36, **Appendix D2**)

The Pechanga Band of Mission Indians requested to initiate formal consultation with the City pursuant to California Public Resources Code 21080.3.1. Pechanga's initial consultation meeting was held on August 21, 2019. Consultation with Pechanga has begun and is ongoing; consultation with Pechanga typically concludes after the Initial Study has been circulated and the Tribe has had a chance to review and comment.

Mitigation Measures MM CUL-1 through **MM CUL-4** are prescribed pursuant to California Public Resources Code 21080.3.2 to ensure any Tribal Cultural Resources which may be inadvertently encountered during construction are managed in accordance with CEQA Guidelines 15126.4(b) with input from interested California Native American tribes. Additionally, **Mitigation Measures MM CUL-5** is prescribed to ensure any human remains encountered are treated with dignity and managed pursuant to California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98. With implementation of **Mitigation Measures MM CUL-1** through **MM CUL-5** (listed in 18.a.ii, below) impacts to tribal cultural resources, as defined in Public Resources Code Section 21074, would be reduced to **less than significant** levels.

a.ii) *Less Than Significant with Mitigation Incorporated.* CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and State CEQA Guidelines §15064.5[a]).

A resource may be listed as a historical resource in the California Register if it meets any of the following National Register of Historic Places criteria as defined in PRC §5024.1(C):

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
B. Is associated with the lives of persons important in our past.
C. 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.
D. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

CEQA Guidelines do not preclude identification of historical resources as defined in Public Resources Code Sections 5020.1(j) or 5024.1. Pursuant to *State CEQA Guidelines* Section 15064.5[c][4], if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study, but they need not be considered further in the CEQA process.

As detailed in response to Checklist Question 5(a), a Project-specific cultural resources assessment was conducted for the Project site and included archaeological and historical records search, a Sacred Lands File search, and an intensive pedestrian survey of the Project site. No cultural resources were observed within the Project area and no further field work is necessary. Despite the apparent lack of cultural resources that could be defined as historical resources pursuant to PRC section 15064.5, due to the proximity of previously recorded archaeological sites within a 0.5 of a mile radius from the Project site, the NAHC considers the Project site to have a high sensitivity for the presence of undocumented/buried resources. Therefore, **Mitigation Measures MM CUL-1** through **MM CUL-5** are required in the event unanticipated cultural resources are unearthed.

MM CUL-1 ***The Project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown cultural resources. Prior to grading, the Project permittee/owner shall provide to the City verification that a certified archaeological monitor has been retained. Any newly discovered cultural resource deposits shall be subject to a cultural resources evaluation.***

MM CUL-2 ***Archaeological Monitoring: At least 30-days prior to grading permit issuance and before any grading, excavation, and/or ground-disturbing activities on the site take place, the Project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources.***

3. The Project Archaeologist, in consultation with consulting tribes, the permittee/owner, and the City, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the Project site. Details in the plan shall include:

a. Project grading and development scheduling;

b. The development of a schedule in coordination with the permittee/owner and the Project Archeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation and ground-disturbing activities on the site: including the scheduling, safety requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all Project archaeologists; and,

c. The protocols and stipulations that the permittee/owner, City, tribes, and Project Archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resource evaluation.

4. A final report documenting the monitoring activity and disposition of any recovered cultural resources shall be submitted to the City of Murrieta, Eastern Information Center and the consulting tribes within 60 days of completion of monitoring.

MM CUL-3 ***Native American Monitoring: Native American Tribal monitors shall also participate in monitoring of ground-disturbing activity. At least 30 days prior to issuance of grading permits, agreements between the permittee/owner and a Native American Monitor shall be developed regarding prehistoric cultural resources and shall identify any monitoring requirements and treatment of Tribal Cultural Resources so as to meet the requirements of CEQA. The monitoring agreement shall address the treatment of known Tribal Cultural Resources; the designation, responsibilities, and participation of professional Native American Tribal monitors during grading, excavation, and ground-disturbing activities; Project grading and development scheduling.***

MM CUL-4 ***Disposition of Cultural Resources: In the event that Native American cultural resources are inadvertently discovered during the course of grading for this Project, one or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be submitted to the City of Murrieta Planning Department:***

4. Preservation-in-place means avoiding the resources, leaving them in the place where they were found with no development affecting the integrity of the resource.

5. On-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to Mitigation Measure CUL-2. This shall include

measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.

6. The permittee/owner shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

c. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and,

d. At the completion of grading, excavation, and ground disturbing activities on-site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project Archaeologist and Native American Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the Property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City of Murrieta, Eastern Information Center and consulting tribes.

MM CUL-5 Human remains: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately identify the "most likely descendants(s)" for purposes of receiving notification of discovery. The most likely descendant(s) shall then make recommendations within 48 hours and engage in consultation concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

With implementation of **Mitigation Measures MM CUL-2** through **MM CUL-5**, impacts to tribal cultural resources, as defined in Public Resources Code Section 21074, would be reduced to **less than significant** levels.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
19. UTILITIES AND SERVICE SYSTEMS: Would the Project:				
a) 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? (References 2, 28, 29, 39, 40, 41, 42, 43)			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (2, 28, 39, 41)			**X**	
c) 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? (References 2, 29, 40)			**X**	
d) 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? (References 2, 8, 44)			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (References 2, 8, 44)			**X**	

a) *Less Than Significant Impact.* The Project site consists of 8.37 gross acres (5.92 acre proposed pad area) of vacant, undeveloped land located in the City of Murrieta along the south/southeast side of the future extension of Date Street adjacent northeast of Rising Hill Drive. The Project site's development plan proposes 234 multi-family residential units in eight freestanding buildings, along with garages, parking and driveway areas, retaining walls, club house, pool-spa, and barbecue area.

The Project site is located within the water service boundary of the Rancho California Water District (RCWD) and within the wastewater/sewer service boundary of the Eastern Municipal Water District (EMWD).

Additional utility providers serving the Project site include:

- Stormwater/Drainage: City of Murrieta
- Electricity: Southern California Edison (SCE)
- Natural Gas: Southern California Gas Company (SoCal Gas)
- Telecommunications: Verizon

Water

The Project site is located within the water service boundary of the Rancho California Water District (RCWD). According to the Water Availability letter for the Project site, issued by RCWD on September 24, 2018, the Project site fronts an existing 30-inch diameter water pipeline (1380

Pressure Zone) within Date Street. While water service to the Project site development plan would be provided by RCWD, the site is not currently, nor has it been in the past, connected to the RCWD system. Water service to the Project site is subject to the RCWD's Rules and Regulations (governing) Water System Facilities and Service, as well as the completion of financial arrangements between RCWD and the property owner.

It is noted, as stated in the *Water Availability Letter*, "Beginning in 2018, newly constructed multi-unit residential structures are required to measure the quantity of water supplied to each individual residential dwelling unit." Individual water meters will be required for each lot and or Project unit, including separate water services/meters for domestic service, fire service, and landscape irrigation service, as applicable.

The Rancho California Water District (RCWD) serves the area known as Temecula / Rancho California, which includes the City of Temecula, portions of the City of Murrieta (inclusive of the Project site), and unincorporated areas of southwest Riverside County. The District's service area is bounded on the southwest by the Santa Ana Mountains, and on the northeast by the Gavilan Hills.

RCWD's current service area comprises 100,000 acres and serves more than 150,000 people. The District has 970 miles of water mains, 39 storage reservoirs, 5 storage reservoirs (recycled water), 5 wet weather storage ponds (recycled water), one surface reservoir (Vail Lake), 48 groundwater wells, and 45,000 service connections. The District is independent of and overlaps other local public agencies' jurisdictions.

Projected domestic water demand in the City of Murrieta is expected to increase from 39,179 acre-feet per year in 2011 to 54,811 acre-feet per at buildout in the year 2035. According to the City's General Plan EIR, buildout of the City's General Plan would require only 2.36 percent (2.36%) of the 2030 combined water supply of the four water districts serving the City.

RCWD gets its water from a variety of sources. The natural sources include precipitation, untreated import water recharge basins, and regional groundwater (aquifers). RCWD also purchases treated water from the Metropolitan Water District of Southern California (MWD). MWD imports water from Northern California and the Colorado River.

Water delivered to homes and businesses within the RCWD service area is a blend of well water (30%) and imported water (65%).

There is no recycled water currently available within the limits established by Resolution 2007-10-5 (Project site is a part). Should recycled water become available in the future, the Project site may be required to retrofit its facilities to make use of this availability in accordance with Resolution 2007-10-5. Recycled water service, therefore, would be available upon construction of any required on-site and/or off-site recycled water facilities and the completion of financial arrangements between RCWD and the property owner.

A multi-family lot contains multiple dwellings within 1 building or several buildings within 1 complex (DWR Guidebook, Page 4-4). In FY 2014-2015, there were 219 active Multi-Family potable water connections, with an annual water demand of 2,201 AFY, which comprised 3.7% of the District's FY 2014-2015 total potable water demands.

Based on the residential growth rates developed by SCAG for the 2012-2035 Regional Transportation Plan, Multi-Family Residential annual potable water demand is anticipated to increase to 2,937 AFY in 2040.

The available supplies and water demands for the District's water service area were analyzed in the 2015 *UWMP* to assess RCWD's ability to satisfy demands during three (3) hydrologic scenarios, including: 1) a normal water year, 2) single-dry water year, and 3) multiple-dry water years. The supply-demand balance for each of the hydrologic scenarios within the RCWD was projected for the 25-year planning period 2015 to 2040.

Based on the analysis and conclusions set forth in the 2015 UWMP, RCWD will be able to meet 100% of its demand under all three hydrologic scenarios through the year 2040.

Implementation of the proposed Project will not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

In addition, sufficient water supplies are available to serve the Project from existing entitlements and resources, and no new or expanded entitlements are required. The proposed Project will connect to Rancho California Water District (RCWD) facilities via the extension of an existing water line located contiguous the Project site in Date Street (existing road and utility and easement). Any impacts are considered **less than significant**.

Wastewater/Sewer

The Project site is located within the wastewater/sewer service boundary of the Eastern Municipal Water District (EMWD).

According to the *Will Serve Letter - Sewer* for the Project site issued by EMWD, "Eastern Municipal Water District (EMWD) is willing to provide sewer services to the subject project." It is noted, EMWD's ability to serve the Project site is subject to limiting conditions, such as regulatory requirements, legal issues, or conditions beyond EMWD's control and the "will serve" determination will expire one year from the date of issue (December 10, 2019).

EMWD wastewater collection systems include: 1,534 miles of gravity sewer, 53 lift stations, and five regional water reclamation facilities, with interconnections between local collection systems serving each treatment plant.

The EMWD facility that provides wastewater treatment for the City of Murrieta, inclusive of the Project site, is the Temecula Valley Regional Water Reclamation Facility (TVRWRF).

Wastewater from the Project site would be delivered through EMWD sewers to the TVRWRF. The TVRWRF is a 95-acre facility located in the commercial area of Temecula; while it is the smallest of the EMWD reclamation facilities, its capacity is the second largest. The TVRWRF is currently being expanded from a current capacity of 18 million gallons per day (mgd) to 23 mgd. In 2016, the typical daily flows were 14 mgd and were projected to reach 18 mgd in 2018. The TVRWRF Expansion accounts for largest single expenditure in the 2017-2022 EMWD capital improvement budget. The TVRWRF facility has an ultimate design capacity of 28 mgd.

The proposed Project will connect into an existing 12 inch EMWD sewer line located in (old) Date Street, currently serving existing development in the vicinity of the Project site.

According to the City's General Plan EIR, individual developments are reviewed by the City and the applicable water district to determine if sufficient sewer capacity exists to serve the specific development. The City coordinates with the water districts to make sure that new development does not exceed the capacity of wastewater conveyance and treatment facilities, and that new development pays its fair share to increase capacity of those facilities.

There would be no significant environmental effects specifically related to the installation of on-site wastewater facilities during the Project's construction phase that are not encompassed within the Project's construction footprint and therefore already identified, disclosed, and subject to all applicable mitigation measures, as well as local, State, and federal regulations, as part of this Initial Study.

In summary, sufficient wastewater capacity is available to serve the Project from existing resources and EMWD has issued a signed Will Serve Letter for the Project site. The Project would not require or result in construction or expansion of wastewater facilities that could result in a significant environmental effect. Impacts will be **less than significant**.

Stormwater/Drainage

As previously discussed in Section 10 of this Initial Study (Hydrology and Water Quality), all new development in the City of Murrieta is required to comply with provisions of the NPDES program, including Waste Discharge Requirements (WDR), and the City's Municipal Separate Sewer Permit (MS4), as enforced by the San Diego Regional Water Quality Board (SDRWQCB).

Under existing conditions, runoff from the Project site (8.37 gross acres of vacant, undeveloped land; 100% pervious earthen surface) sheet flows generally north/northeast towards the existing Winchester Road Storm Drain located within Date Street. The Project site's development plan proposes the creation of a 5.92 acre mass-graded building pad, 5.62 acres of impervious area, and an on-site subsurface drainage system where flows will be treated for water quality purposes before being discharged into the existing storm drain in Date Street. With adherence to the Project-specific *WQMP,* the proposed Project will not substantially alter the existing drainage pattern of the site or area, nor will it require new or expanded off-site storm drain facilities. Any impacts will be **less than significant**.

Electricity

There is no electricity connection currently serving the Project site in its vacant and undeveloped condition. The Project site development plan which proposes 234 multi-family residential units will require electrical service. The electrical service provider for the Project site and the greater City of Murrieta is Southern California Edison (SCE).

Electrical services are currently in place to existing multi-family and single-family residential projects located adjacent to the south of the Project site along Rising Hill Drive and Bahama Way. In addition, electrical service is in place to the existing commercial developments contiguous to the southeast and northeast of the Project site fronting SR-79/Winchester Road.

SCE is one of the nation's largest electric utilities providing electrical service to customers within a 50,000-square mile service area covering approximately 15 million people in 11 counties in the southern half of California, including western Riverside County. According to the SCE February 2018 Business Update, the infrastructure system includes 1.4 million power poles, 725,000 transformers, 118,000 miles of distribution and transmission lines, and 3,200 MW owned generation.

The California Energy Commission (CEC) prepares an annual report that presents forecasts of electricity and natural gas consumption and peak electricity demand for California and for each major utility planning area within the state (inclusive of SCE's planning area). The most recent edition is identified as the California Energy Demand (CED) 2018 - 2030 Revised Forecast which supports the analysis and recommendations of the 2017 Integrated Energy Policy Report, including electricity system assessments and analysis of progress toward increased energy efficiency, with goals recently codified in Senate Bill 350 (SB 350, De León, Chapter 547, Statutes of 2015), and distributed generation.

According to the CED 2018-2030 Revised Forecast, the total energy consumption within SCE's planning area was slightly under 110,000 GWh in 2016 and is projected to increase to approximately 128,000 GWh over the 12-year projection period ending 2030.

Adequate electricity supply is presently available in southern California to meet the incremental increase in demand attributed to the Project. Any impacts will be **less than significant**.

Natural Gas

There is no natural gas connection currently in place serving the Project site in its vacant and undeveloped condition. The natural gas provider for the Project site and the greater City of Murrieta is the Southern California Gas Company (SoCal Gas), also known as The Gas Company.

The proposed Project will be connected to The Gas Company's natural gas distribution system. Connections are available in adjacent roadways and natural gas service is in place to existing multi-family and single-family residential tract development located adjacent to the south of the Project site.

Adequate natural gas supplies are available to meet the incremental increase in demand attributed to the Project. Any impacts will be **less than significant**.

Telecommunications

Telephone service to the Project site and the greater City of Murrieta is provided by Verizon. Verizon is a private company that provides connection to the communication system on an as needed basis. No expansion of facilities will be necessary to connect the Project to the communication system located adjacent to the Project site. Any impacts will be **less than significant**.

b) *Less Than Significant Impact.* As previously discussed in Section 19.a, above, the Project site is located within the water service boundary of the Rancho California Water District (RCWD) which has a 30-inch water line Date Street. According to RCWDs *Hydraulic Model* for the Project site, there are two connection points directly adjacent to the Project site that will provide ample flow to serve the Project site development plan. Point of Connection A is located in Date Street at Del Haven Avenue, proximate to where the 30-inch water line transitions to a 16-inch line. Point of Connection B is located at the elbow intersection of Rising Hill Drive and Bahama Way where the 8-inch line in Rising Hill Drive ends. The Project site engineer (VSL Engineering) reports that based on the Hydraulic Modeling, RCWD has determined that no off-site water infrastructure is needed in conjunction with the Project site development, as proposed.

The District's water supply/demand analysis within its service area are set forth in the *2015 UWMP* to assess RCWD's ability to satisfy demands during three (3) hydrologic scenarios, including: 1) a normal water year, 2) single-dry water year, and 3) multiple-dry water years. The supply-demand balance for each of the hydrologic scenarios within the RCWD was projected for the 25-year planning period 2015 to 2040.

Based on the analysis and conclusions set forth in the *2015 UWMP*, RCWD will be able to meet 100% of its demand under all three hydrologic scenarios through the year 2040.

Implementation of the proposed Project will not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

In addition, sufficient water supplies are available to serve the Project from existing entitlements and resources, and no new or expanded entitlements are required. The proposed Project will connect to Rancho California Water District (RCWD) facilities via the extension of an existing water line located contiguous the Project site in Date Street (existing road and utility and easement). Any impacts will be **less than significant**.

c) *Less Than Significant Impact.* As previously discussed in Section 19.a, above, the Project site is located within the wastewater/sewer service boundary of the Eastern Municipal Water District (EMWD). According to the "Will Serve" letter for the Project site issued by EMWD, dated December 10, 2018, "Eastern Municipal Water District (EMWD) is willing to provide sewer services to the subject project."

Wastewater from the Project site would be delivered through EMWD sewer lines to EMWD's 95-acre Temecula Valley Regional Water Reclamation Facility (TVRWRF) located in the commercial area of the City of Temecula. While the TVRWRF is the smallest of the EMWD reclamation facilities, its capacity is the second largest. Specifics are summarized in Section 19.a, above. The TVRWRF is currently being expanded from a current capacity of 18 million gallons per day (mgd) to 23 mgd and the expansion accounts for the largest single expenditure in the 2017-2022 EMWD capital improvement budget. The TVRWRF facility has an ultimate design capacity of 28 mgd.

Sufficient wastewater capacity is available to serve the Project from existing resources and EMWD has issued a signed Will Serve letter for the Project site, dated December 10, 2018 (**Appendix K**). The Project would not require or result in construction or expansion of wastewater facilities that could result in a significant environmental effect. Impacts will be **less than significant**.

d) *Less Than Significant Impact.* Waste Management, Inc. is the municipal waste collection service provider for the City of Murrieta, inclusive of the Project site. There are no collection, processing, or disposal facilities within the City.

As set forth in the City's 2035 GPEIR, Section 5.21 (*Solid Waste*), trash collected within the City is disposed at several landfill sites but the primary disposal facility, by far, is the El Sobrante Landfill.

The El Sobrante Landfill is located approximately 25 miles northwest of the Project site in the unincorporated Temescal Canyon area of Riverside County between the City of Lake Elsinore and the City of Corona, east of Interstate 15 and Temescal Canyon Road, and south of Cajalco Road, at 10910 Dawson Canyon Road.

El Sobrante Landfill, which is owned and operated by USA Waste of California (a subsidiary of Waste Management, Inc.) started disposal operations in 1986. From 1986 to 1998, the landfill was operated pursuant to the original El Sobrante Landfill Agreement, its Amendments and one Addendum.

On September 1, 1998, the Riverside County Board of Supervisors (BOS) approved the El Sobrante Landfill Expansion Project, a vertical and lateral expansion of the landfill, and entered into a Second Agreement, which became effective on September 17, 1998.

The Second Agreement represents a public/private relationship between the owner/operator of the landfill and the County of Riverside and provides for the Riverside County Department of Waste Resources (RCDWR) to operate the landfill gate, to set the County rate for disposal at the gate with BOS approval, and to operate the Hazardous Waste Inspection Program.

The El Sobrante Landfill Expansion Project included the following major elements:

- An increase in landfill disposal capacity to approximately 196.11 million cubic yards or approximately 109 million tons of municipal solid waste;
- An increase in the daily disposal capacity up to 10,000 tons (pursuant to the Second Amendment of the Expansion Agreement, approved by the BOS in March 2007, and subsequently implemented on August 31, 2009, the daily capacity was increased to 70,000 tons per week, not exceeding 16,054 tons per day [limited in part due to the number of vehicle trips per day], and a continuous 24-hour disposal);
- An increase in the landfill area to a total of 1,322 acres;
- An increase in the landfill footprint to 495 acres;
- An increase in the hours of operation, allowing 24-hour continuous operations, 7 days a week, for non-waste functions (i.e. application of daily cover, stockpiling of daily cover, site maintenance, grading, and vehicle maintenance) and allowing disposal operations from 4:00 a.m. to Midnight.

The El Sobrante Landfill facility currently comprises a total area of 1,322 acres which includes a 495-acre footprint permitted for landfill operations, and a 688-acre wildlife preserve.

The landfill is open 24 hours per day, six days a week (closed Sundays and Major Holidays). Commercial customers have access 4:00 a.m. to 6:00 p.m., while the general public hours are 6:00 a.m. to 6:00 p.m.

The operating permit allows a maximum of 16,054 tons per day of waste to be accepted at the landfill, due to limitations on the number of vehicle trips per day.

In 2010, the El Sobrante Landfill accepted a total of 694,963 tons, or approximately 0.695 million tons of waste generated within Riverside County. The daily average for in-County waste was 2,235 tons during 2010.

As of January 2011, the landfill had a remaining in-County disposal capacity of approximately 38.506 million tons.

During calendar year 2016, a total of 2,652,941 tons of municipal solid waste was disposed at the El Sobrante Landfill. Of this amount, 852,987 tons originated from Riverside County sources, and 1,799,954 tons originated from out-of-County sources. El Sobrante received 123,068 tons of Alternate Daily Cover in the form of cement treated incinerator ash.

Based on 309 working days (362 days minus Sundays and Major Holidays), an average of 8,596 (rounded to the nearest whole number) tons of waste were received at the landfill on a daily basis in 2016. The estimated 2017 total tonnage figure is projected to have increased slightly over the 2016 figure, to approximately 2,700,000 tons or an average amount of approximately 8,738 tons per day (2,700,000 tons ÷ 309 days). This indicates a year over year increase of 1.65% and is substantially below the allowable disposal capacity of 16,054 tons per day permitted pursuant to the current agreement/operating permit, as amended.

As of the 2007 Second Amendment date, the landfill had a projected 50-year remaining life through 2036; however, based on 2016 figures, there was 141,192,896 tons of remaining capacity, indicating an approximate 54-year remaining life before the facility reaches capacity. According to the City GPEIR, the El Sobrante facility is estimated to have sufficient capacity until 2045.

The City of Murrieta evaluates solid waste generation for proposed development projects based on a per capita generation rate. As set forth in the City's GPEIR, there are two generation factors; one for Residential Land Use (includes both single-family and multi-family projects) and one for Non-Residential Land Use (i.e. commercial, office and research park, business park, and civic/institutional). The generation factors are shown in **Table 19-1, *Solid Waste Generation Factors City of Murrieta General Plan 2035 Final EIR***.

Table 19-1
Solid Waste Generation Factors
City of Murrieta General Plan 2035 Final EIR

Land Use	Generation Factor[1]
Residential	12.23 lbs./unit/day
Non-Residential[2]	6 lbs./1,000 square foot/day

Notes:
1 Does not include demolition inert generation
2 Non-residential land uses include commercial, office and research park, business park, and civic/institutional

Source: Table 5.21-2 City of Murrieta 2035 GPEIR

Based on the above factors, the Project site development plan is projected to generate an average of 2,862 pounds (1.30 tons) of solid waste per day, or 1,044,630 pounds (474 tons) of solid waste per year.

Table 19-2
Project Site - Solid Waste Generation Forecast
234 Multi-Family Residential Units

Project Development Plan	# Dwelling Units	Generation Factor[1]	Forecast Solid Waste Per Day		Forecast Solid Waste Per Year	
			Pounds	Tons[2]	Pounds	Tons
Multi-Family Residential	234	12.23 lbs./unit/day	2,862	1.30	1,044,630	474

Notes:
1 Generation factor per City of Murrieta 2035 GPEIR
2 1 ton = 2,000 lbs
Source: MFCS based on Project Site Development Plan and City of Murrieta 2035 GPEIR

Individual development projects within the City of Murrieta are required to comply with applicable State and local regulations reducing landfill waste by at least 50 percent; therefore, the Project site is forecast to contribute 1,431 lbs (0.65 ton) of solid waste per day for disposal at the El Sobrante Landfill. This represents approximately 0.009% (0.785 ton ÷ 8,738 tons) of the estimated average daily solid waste disposed at the El Sobrante Landfill during 2017. Reference **Table 19-2, *Project Site - Solid Waste Generation Forecast 234 Multi-Family Residential Units***.

Based on the above, development of the Project site, as proposed, would be served by a landfill with sufficient permitted capacity to accommodate the proposed Project's solid waste disposal needs. Impacts will be **less than significant**.

e) *Less Than Significant Impact.* All land uses within the City that generate waste are required to coordinate with the City's contracted waste hauler (Waste Management, Inc.) to collect solid waste on a common schedule as established in applicable local, regional, and state programs.

Additionally, all development within the City is required to comply with applicable elements of Assembly Bill (AB) 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991), AB 939 (CalRecycle), Title 8 of the City Municipal Code, and other local, state, and federal solid waste disposal standards.

The California Integrated Waste Management Act of 1989 (AB 939) requires every city and county in the state to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan, that identifies how each jurisdiction will meet the mandatory state diversion goal of 50 percent by and after the year 2000. The purpose of AB 939 is to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible."

All solid waste disposals within the City of Murrieta are subject to the requirements set forth in *Title 8, Health and Safety*, Chapter 8.28 Waste Management, as provided in the Municipal Code. Chapter 8.28 provides integrated waste management guidelines for service, prohibitions, and provisions of service. The provisions of service require that the City of Murrieta shall provide for or furnish integrated waste management services relating to the collection, transfer, and disposal of refuse, recyclables, and compostables within and throughout the City.

The Project site's development plan would be required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991), AB 939, Title 8 of the City Municipal Code, and other applicable local, State, and federal solid waste disposal standards as a matter of regulatory policy, thereby ensuring that the solid waste stream to the waste disposal facilities is reduced in accordance with existing regulations. Impacts will be **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
20. WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (References 1, 2, 6, 9)			**X**	
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? (References 1, 2, 6, 9, 23, 24)			**X**	
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? (References 1, 2, 6, 9)			**X**	
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? (References 1, 2, 6, 9)			**X**	

a) *Less Than Significant Impact*. The Project site is not located within either a fire responsibility area or a fire hazard area. The Project will take access from existing roadways, and roadways that will be improved. These roadways will connect into part of an adopted emergency response plan/emergency evacuation plan, as implemented by the County of Riverside. The Project will be constructing residential uses, drainage facilities, sewer lines and roadways. A limited potential exists to interfere with an emergency response or evacuation plan during construction. Control of access will ensure emergency access to the site and Project area during construction through the submittal and approval of a Traffic Management Plan. As part of the plan review process, the City would require the developer to submit a Traffic Management Plan that would provide appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

Following construction, emergency access to the Project site and area will remain as was prior to the proposed Project. Therefore, implementation of the Project will not substantially impair an adopted emergency response plan or emergency evacuation plan. Any impacts will be **less than significant**.

b) *Less Than Significant Impact*. The Project site is not located within either a fire responsibility area or a fire hazard area. The Project site topography consists of low rolling terrain with natural gradients of approximately 8 to 20 percent to the north-northeast. Drainage is by sheet flow north-northeast toward Date Street. Overall relief on the Project site, in the vicinity of the proposed development, is approximately 50-feet, with elevations varying from 1,122 to 1,722 AMSL. The Project site lies on the northern edge of a densely populated residential neighborhood and abuts several commercial properties along Winchester Road to the east. On the north side, the Project site is bound by a chain-link fence that separates the property from a smaller development, and to the southwest it partially adjoins an existing apartment complex. To the northeast and the northwest are other parcels of undeveloped land.

Due to past disturbances at the Project site, it presently has a low fuel load. The Project would be constructed in accordance with the 2016 CBC, including Chapter 7 of the CBC, which requires all on-site structures to incorporate construction techniques and materials such as roofs, eaves, exterior walls, vents, appendages, windows, and doors hardened to provide resistance to and/or to perform at high levels against ignition during the exposure to burning vegetation from wildfires. The City reviews all proposed development to ensure compliance with applicable provisions of its Development Code, the Uniform Fire Code, California Fire Code, and California Uniform Building Code requirements. The City's Fire Department shall review the Project and require the necessary code requirements in order to reduce any potential wildland fire hazard impacts to a less than significant level. This is a standard condition and not considered unique mitigation under CEQA.

Based on this information, the Project 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. Any impacts will be **less than significant**.

c) *Less Than Significant Impact*. The Project site is not located within either a fire responsibility area or a fire hazard area. The Project does not include and or 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. Any roads and utilities will be installed in accordance with the respective jurisdiction requirements. Any impacts will be **less than significant**.

d) *Less Than Significant Impact*. The Project site is not located within either a fire responsibility area or a fire hazard area. The Project site topography consists of low rolling terrain with natural gradients of approximately 8 to 20 percent to the north-northeast. Drainage is by sheet flow north-northeast toward Date Street. Overall relief on the Project site, in the vicinity of the proposed development, is approximately 50-feet, with elevations varying from 1,122 to 1,722 AMSL. The Project will include hardscape and landscape improvements that would serve to stabilize the built environment. Based on this information, the Project would not 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. Any impacts will be **less than significant**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
21. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		**X**		
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)		**X**		
c) Does the Project have environmental		**X**		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				

The Project proposes the development of a residential use that will be consistent with the General Plan and zoning designation for the Project site, upon approval of the General Plan Amendment and Change of Zone Applications. A review of technical studies completed for the proposed Project and CEQA review, per the Appendix G Checklist, indicate no significant unavoidable adverse environmental impacts are forecast to result from construction and/or operation this proposed Project with the implementation of the recommended mitigation.

a) *Less Than Significant with Mitigation Incorporated.* The Project would require detailed evaluation of water quality impacts and consistency with the City's grading standards and typical Best Management Practices (BMPs) for residential development. The City also would require the Project to prepare a Storm Water Pollution Prevention Plan (SWPPP) to address potential short-term water quality impacts (including erosion) during construction, and a Water Quality Management Plan (WQMP) to address potential long-term water quality impacts (including erosion) during Project operation. These items are incorporated into **Standard Conditions SC HYD-1** through **SC HYD-3** in Section 10, *Hydrology and Water Quality*. With implementation of these conditions of approval, potential short- and long-term impacts to water quality would be **less than significant**.

The proposed Project's impacts to biological resources and cultural resources were analyzed in this Initial Study, and all direct, indirect, and cumulative impacts were determined to have no impact, a less than significant impact, or reduced to a less than significant impact with implementation of mitigation. No endangered or threatened species were identified on the Project site. Development of the proposed Project would not cause fish or wildlife populations to drop below self-sustaining levels or restrict the movement/distribution of a rare or endangered species. The proposed Project would not affect any threatened or endangered species or associated habitat. Potential impacts to special status species, such as burrowing owl, or to migratory and nesting birds would be mitigated to **less than significant** levels with implementation of **Mitigation Measures MM BIO-3** and **MM BIO-4.** To reduce impacts related to the removal of 0.85 acre of coastal sage scrub from the Project site, the MSHCP includes a Local Development Mitigation Fee to assist in providing revenue to acquire and preserve vegetation communities and natural areas within Riverside County which are known to support populations of threatened, endangered or key sensitive populations of plant and wildlife species, as detailed in **MM BIO-1**. **Mitigation Measure MM BIO-2** requires a preconstruction survey prior to any ground disturbing activities or vegetation removal. In addition to the MSHCP, the Project site is within the SKR HCP fee boundary, but is not located within an SKR reserve, nor is the site located in an area requiring focused SKR surveys. Therefore, the Project proponent will be required to pay SKR HCP fees, as detailed in **MM BIO-5.** Adherence to **MM BIO-1** through **BIO-5** would reduce potential impacts to biological resources to **less than significant.**

No cultural resources, either historic or archaeological, were identified on the Project site during the intensive pedestrian survey for the Project. Despite the apparent lack of cultural resources, there remains some potential for the proposed Project to unearth previously undocumented resources during construction. Therefore, **Mitigation Measures MM CUL-1** through **MM CUL-4** are required in the event that unanticipated cultural resources are unearthed during Project construction. Additionally, based on the finding that the Project site has "a high sensitivity" for paleontological resources, **Mitigation Measure MM GEO-2** shall be implemented during site ground disturbing activities. Incorporation of these Mitigation Measures will ensure any impacts are reduced to a **less than significant** level.

b) *Less Than Significant with Mitigation Incorporated.* The proposed Project has either no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with

respect to all environmental issues pursuant to CEQA. Due to the limited scope of direct physical impacts to the environment associated with the proposed Project, the Project's impacts are primarily Project-specific in nature.

With respect to air quality**,** no individual project would by itself cause the Basin to be designated as "Non-Attainment" under federal or State ambient air quality standards. In order to be considered cumulatively significant, a project's air pollutant emissions must exceed the emission thresholds established by the regional Air Quality Management District. As depicted in Tables 3-1 and 3-2 (see Response to Checklist Question 3b), development of the proposed Project would not exceed SCAQMD thresholds without any mitigation required; therefore, impacts from the proposed are not cumulatively significant.

Because climate change impacts are cumulative in nature, no typical single project can result in emission of such a magnitude that it, in and of itself, would be significant on a project basis. The Project's GHG emissions of 3,685.05 MT CO_2e/yr. are greater than the SCAQMD-recommended Tier 3 (Option 2) interim threshold of 3,000 MT CO_2e/yr. for all non-industrial uses. With implementation of **Mitigation Measure MM GHG-1** through **MM GHG-3**, the proposed Project would not generate greenhouse gas emissions, either directly or indirectly, which would have a significant impact on the environment and, accordingly, would not conflict with or impede implementation of the reduction goals identified in AB 32, SB 32, EO S-3-05, and the City's CAP to help reduce GHG emissions to the level proposed by the Governor.

Noise impacts are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the CNEL, the L_{eq}, or the L_{50}. Project operational noise levels were combined with the existing ambient noise level measurements for the off-site receivers in order to analyze the Project's operational noise level contributions. The difference between the combined Project and ambient noise levels describe the Project noise level contributions. As indicated in Table 13-5, the proposed Project would contribute an operational noise level increase of up to 0.6 dBA L_{50}. Since the Project-related operational noise level contributions of up to 0.6 dBA L_{50} would comply with the significance criteria as detailed in Table 13-5, Project noise would not result in a cumulatively considerable impact to sensitive receptors.

The cumulative effects resulting from build out of the City's General Plan were not previously identified in the General Plan EIR; as the Project site has a commercial land use designation. The type, scale, and location of the proposed Project, as amended is consistent with City's General Plan and zoning designation and is compatible with the pattern of development on adjacent properties. TUMF fees are imposed on new residential, industrial and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit phase.

The proposed Project will participate in the cost of off-site improvements through payment of TUMF fees based on the current fees at the time of construction of the proposed Project. Payment of TUMF is a standard requirement and is not considered unique mitigation under CEQA.

The proposed Project is located within the City of Murrieta and will therefore be subject to the City's Development Impact Fees (DIF). The City's DIF program includes facilities that are not part of the regional TUMF program.

The proposed Project will participate in the cost of off-site improvements through payment of City DIF fees based on the current fees at the time of construction of the proposed Project. Payment of DIF is a standard requirement and is not considered unique mitigation under CEQA.

The proposed Project will participate in the cost of off-site improvements through payment of City DIF fees based on the current fees at the time of construction of the proposed Project. The Project's contribution to the aforementioned transportation impact fee programs or as a fair share contribution towards a cumulatively impacted facility not found to be covered by a pre-existing fee program should be considered sufficient to address the Project's fair share towards mitigation measure(s) designed to alleviate cumulative Project impacts.

Is understood that the cumulative effect of any proposed project could add to the continued loss of tribal cultural resources. The proposed Project, in conjunction with other development in the City, has the potential to cumulatively impact tribal cultural resources. **Mitigation Measures MM CUL-1** through **MM CUL-4** are prescribed pursuant to California Public Resources Code 21080.3.2 to ensure any Tribal Cultural Resources which may be inadvertently encountered during construction are managed in accordance with CEQA Guidelines 15126.4(b) with input from interested California Native American tribes. Additionally, **Mitigation Measures MM CUL-5** is prescribed to ensure any human remains encountered are treated with dignity and managed pursuant to California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98. With implementation of **Mitigation Measures MM CUL-1** through **MM CUL-5** (listed in 18.a.ii, below) impacts to tribal cultural resources, as defined in Public Resources Code Section 21074, would be reduced to **less than significant** levels and would not be considered cumulatively considerable.

With implementation of **MM AQ-1**, as well as **Mitigation Measures MM GHG-1** through **MM GHG-3**, Project-related impacts that could be cumulatively considerable would be reduced to **less than significant** levels.

c) *Less Than Significant Impact with Mitigation Incorporated.* The South Coast Air Basin is currently designated as a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. Development of the Project would contribute to air pollutant emissions on a short-term basis. The proposed Project is required to comply with applicable SCAQMD Rules, applicable California Code of Regulations, and CalRecycle Sustainable (Green) Building Program regulations, which include implementation of standard control measures for fugitive dust and construction equipment emissions. Additionally, with implementation of **Mitigation Measure MM AQ-1**, short-term (construction) air quality impacts would be reduced to less than significant levels.

Like all of Southern California, the Project site could be subject to strong ground shaking resulting from large earthquakes. Proper engineering design and construction in conformance with the current California Building Code standards and Project-specific geotechnical recommendations, as required through **Mitigation Measure MM GEO-1,** would ensure that impacts from strong seismic ground shaking and unstable soils would be less than significant.

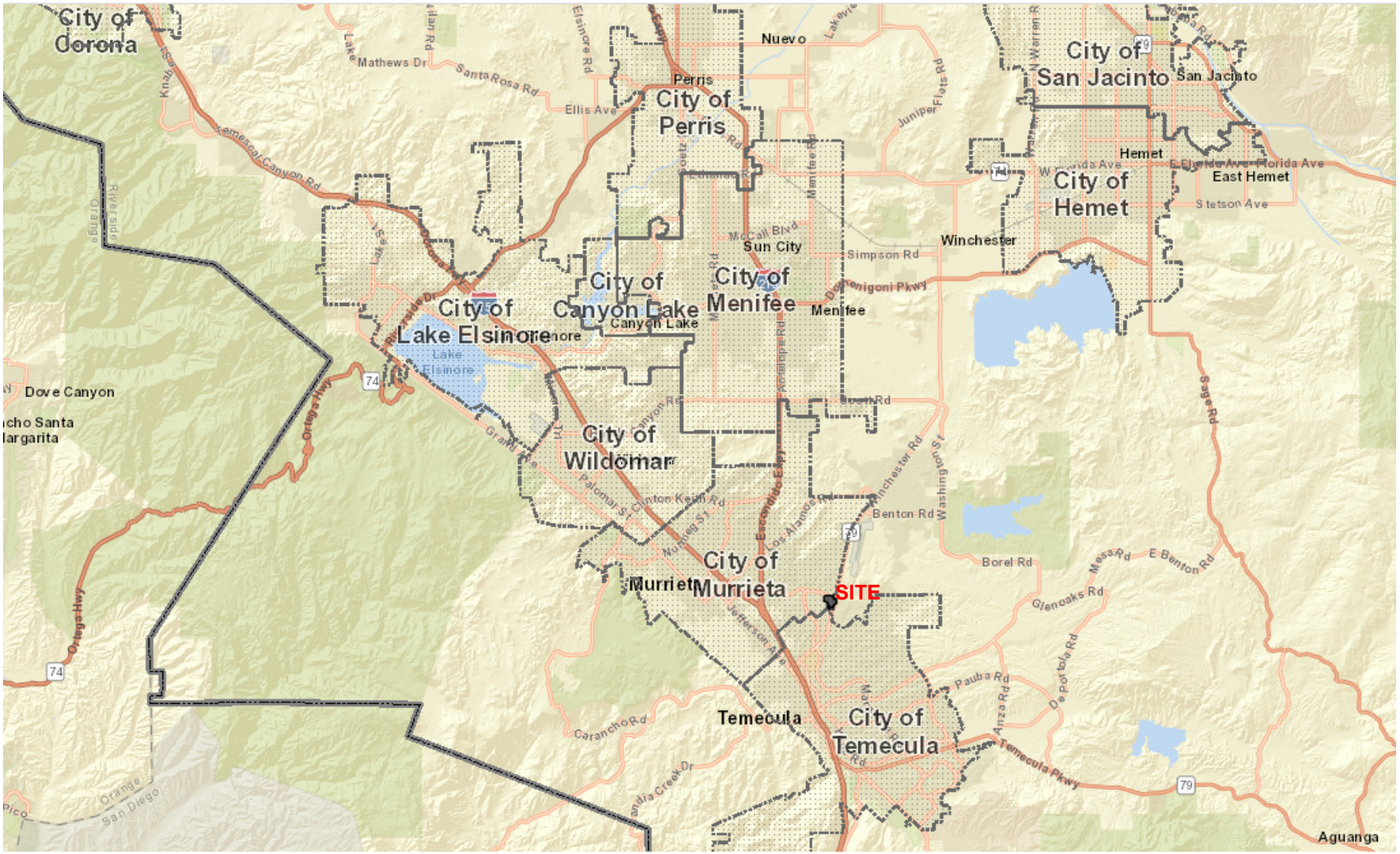
The analysis provided in response to the Checklist questions details that, with the implementation of appropriate mitigation, no significant environmental impact would result from the construction or operation of the proposed Project. With implementation of mitigation, development of the site as proposed would not directly or indirectly result in substantial adverse effect on any human population. Impacts would be reduced to **less than significant** levels.

CONCLUSION

The proposed Project would result in less than significant impacts related to environmental resource issues addressed in this Initial Study. The City of Murrieta proposes a Mitigated Negative Declaration as the appropriate environmental determination to comply with the California Environmental Quality Act for this Project.

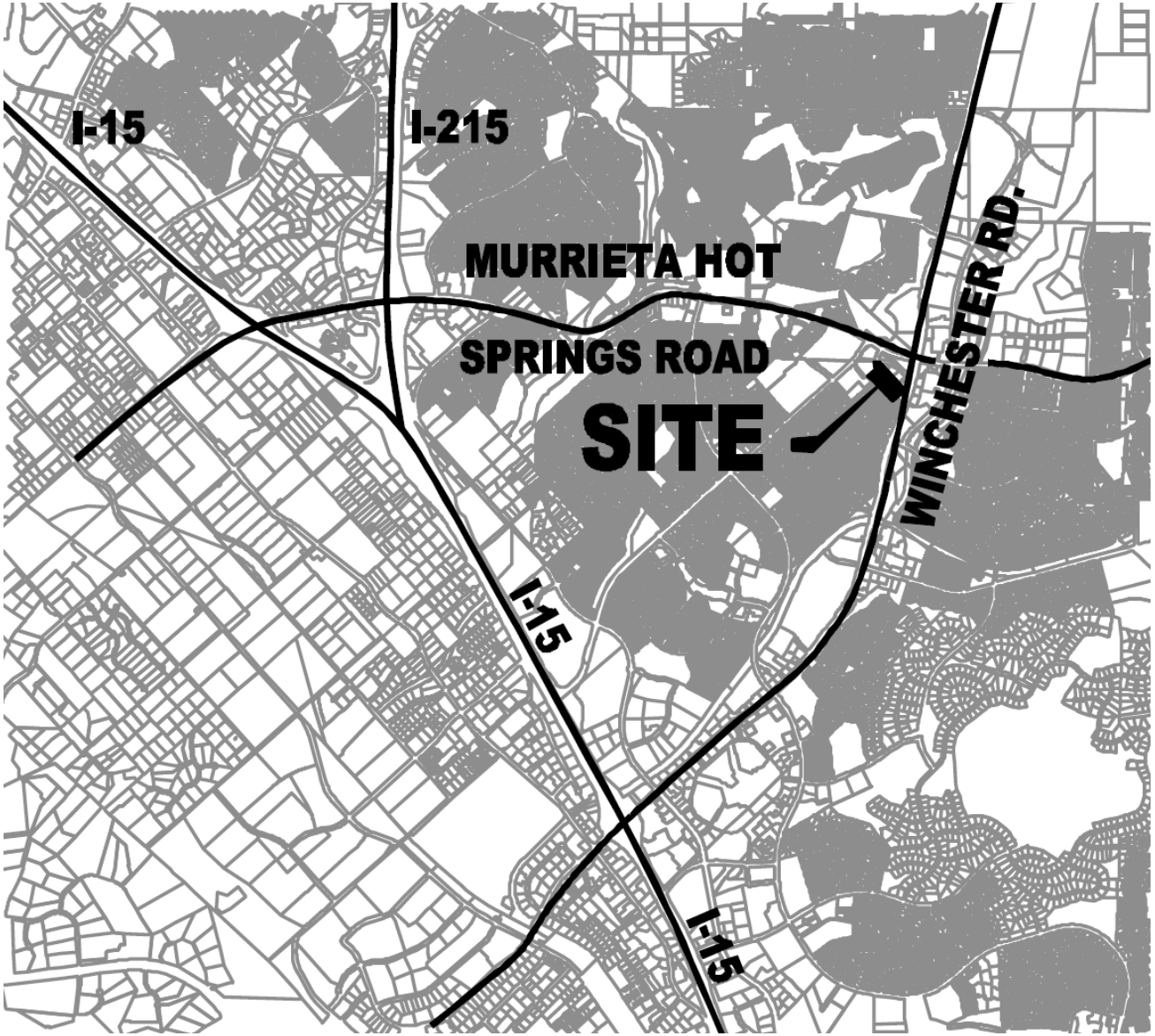
FIGURES

FIGURE 1
Regional Location Map



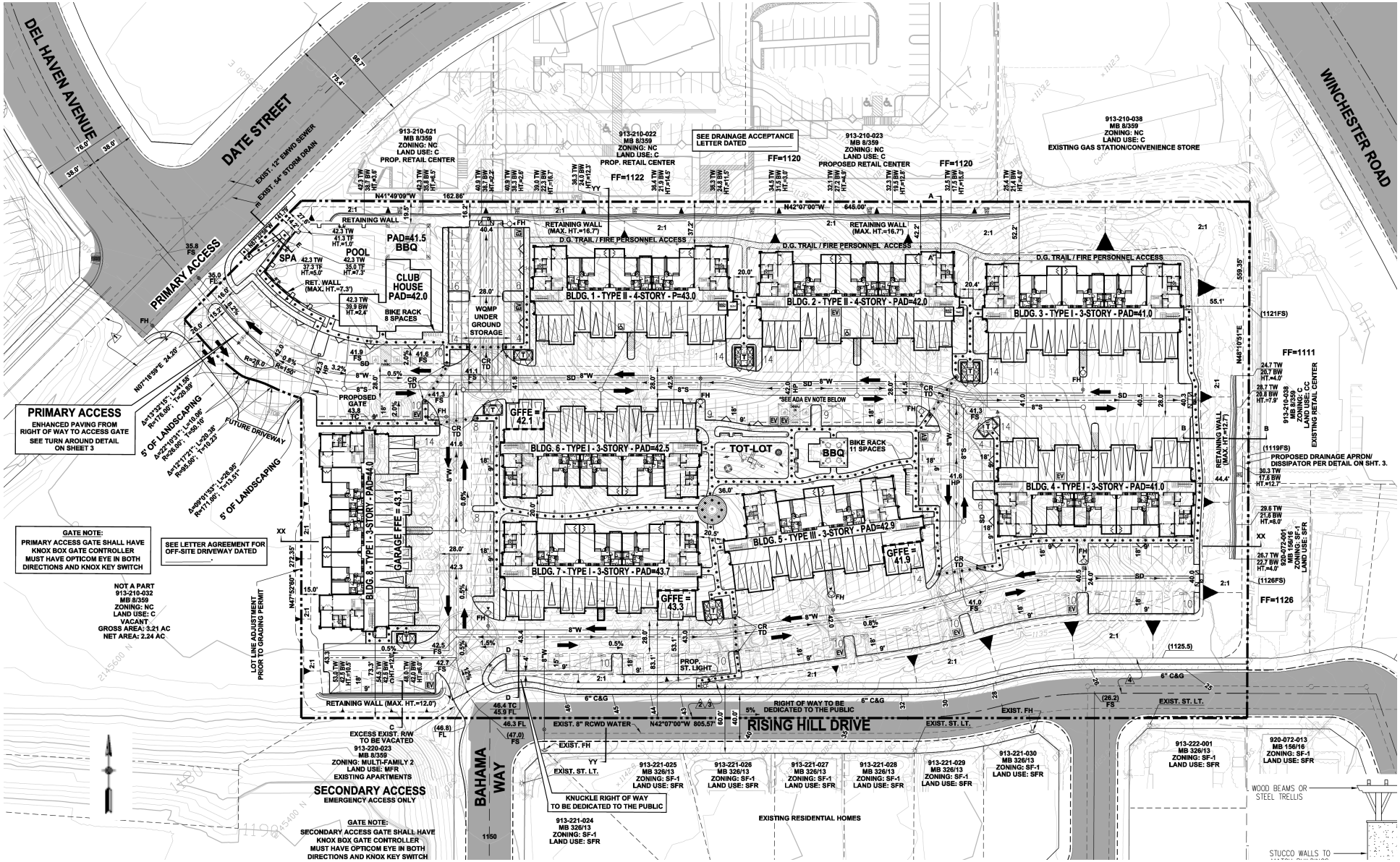
Source: Map My County https://gis.countyofriverside.us/Html5Viewer/?viewer=MMC_Public

FIGURE 2
Vicinity Map



Source: Project Plans (**Appendix L**)

FIGURE 3
Site Plan



Source: Project Plans (**Appendix L**)

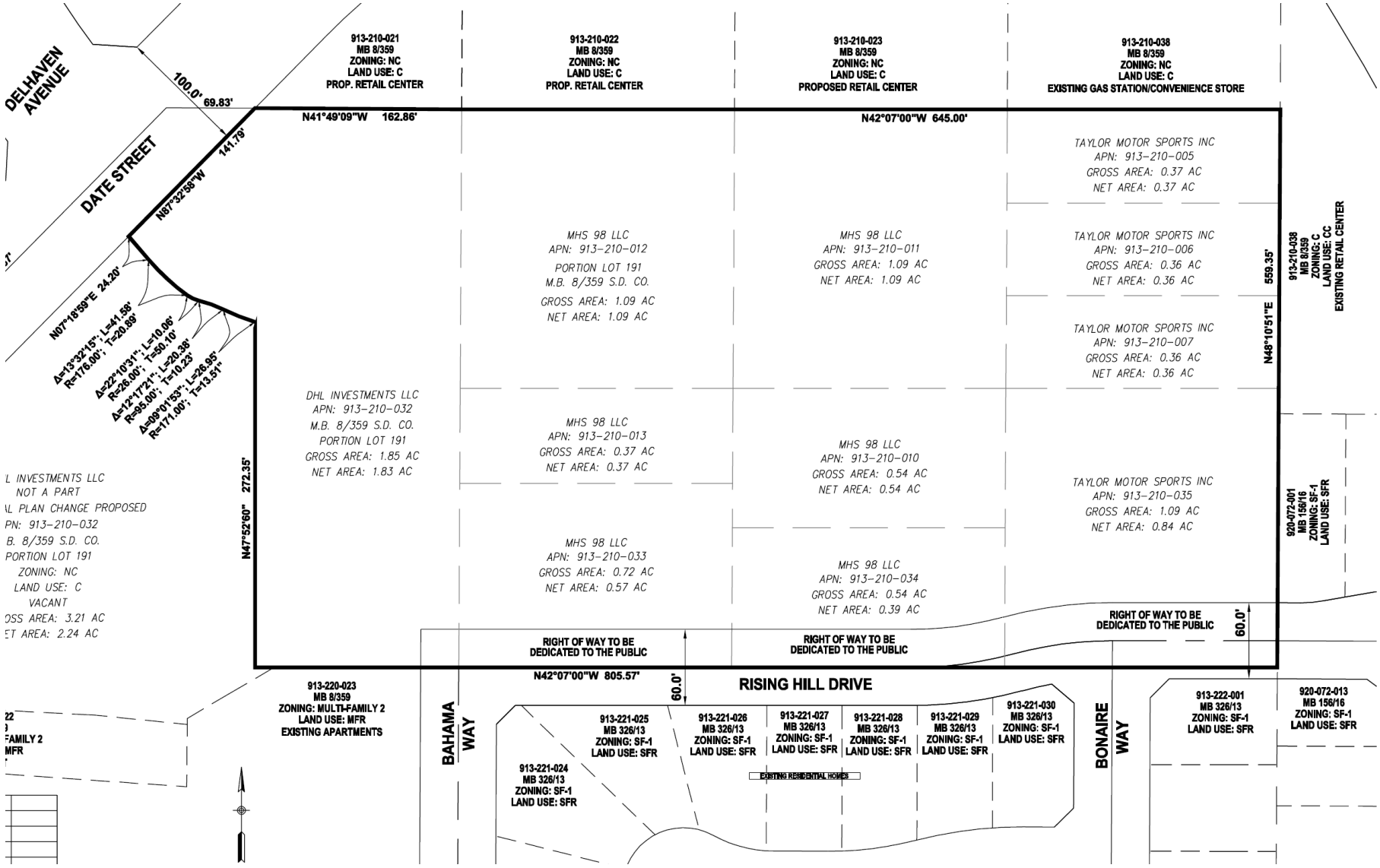
FIGURE 4
Landscape Plan

Source: Project Plans (**Appendix L**)

FIGURE 5
Aerial Photo

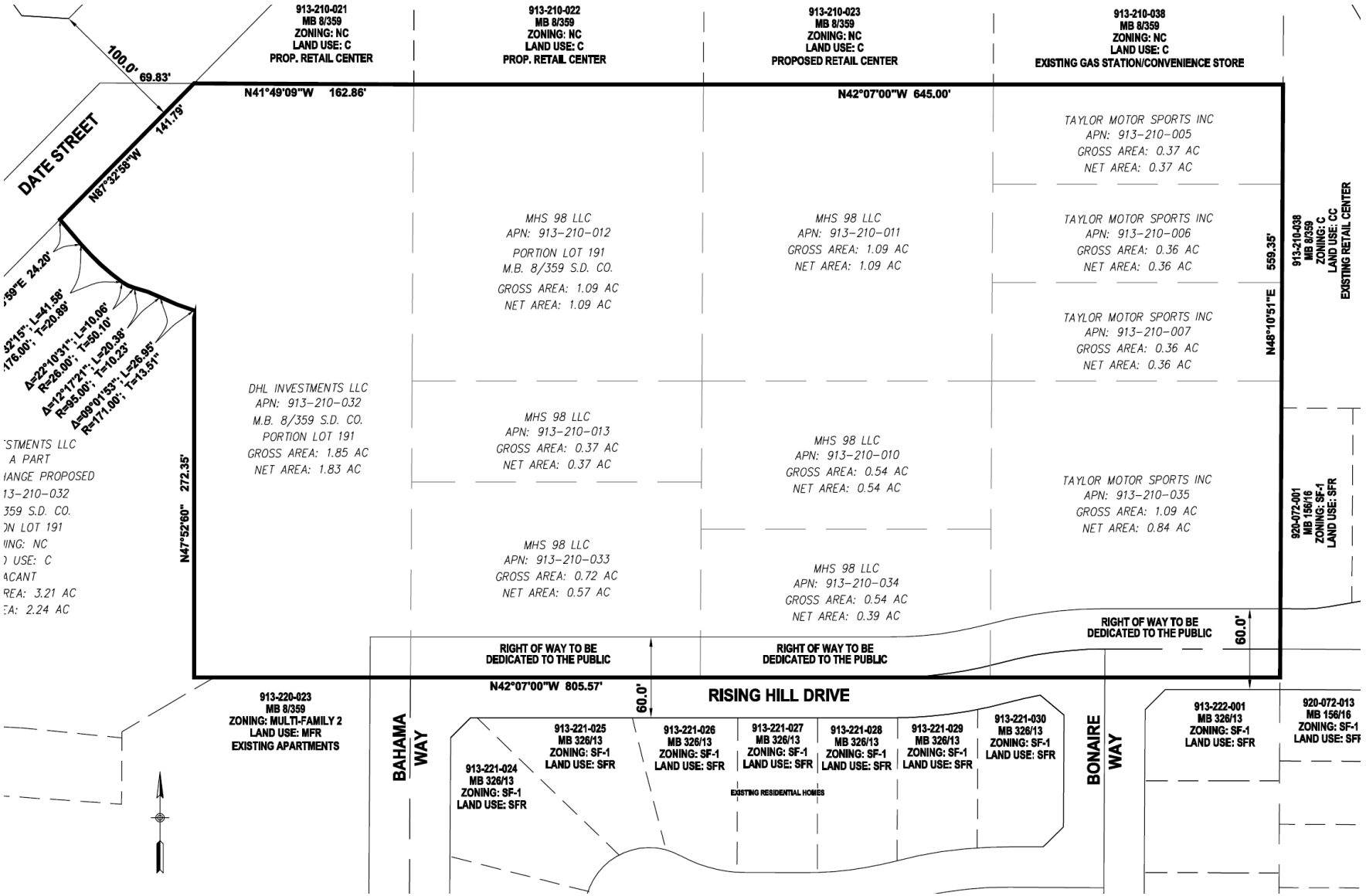
Source: Map My County https://gis.countyofriverside.us/Html5Viewer/?viewer=MMC_Public

FIGURE 6
GPA Exhibit



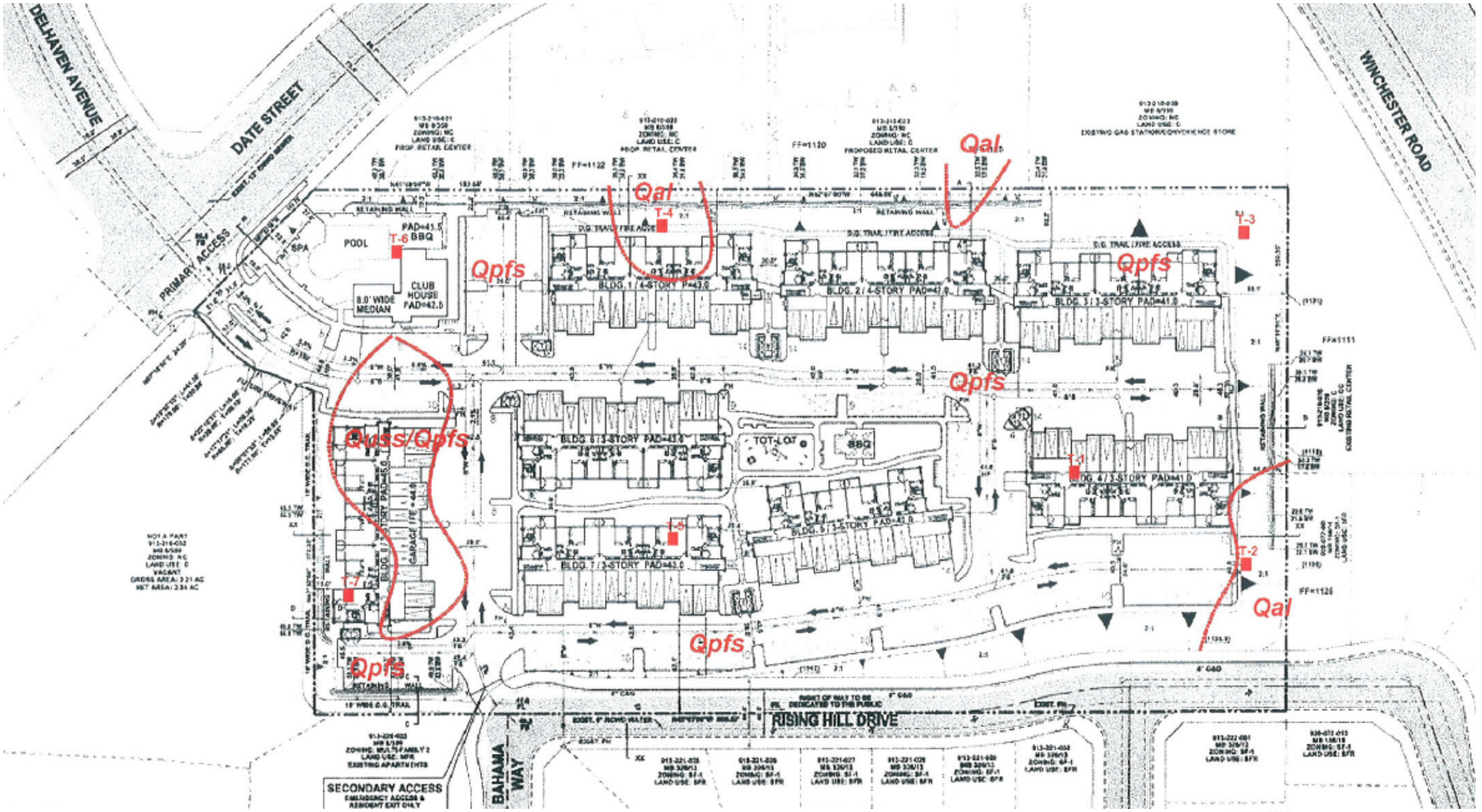
Source: Project Plans (**Appendix L**)

FIGURE 7
ZC Exhibit



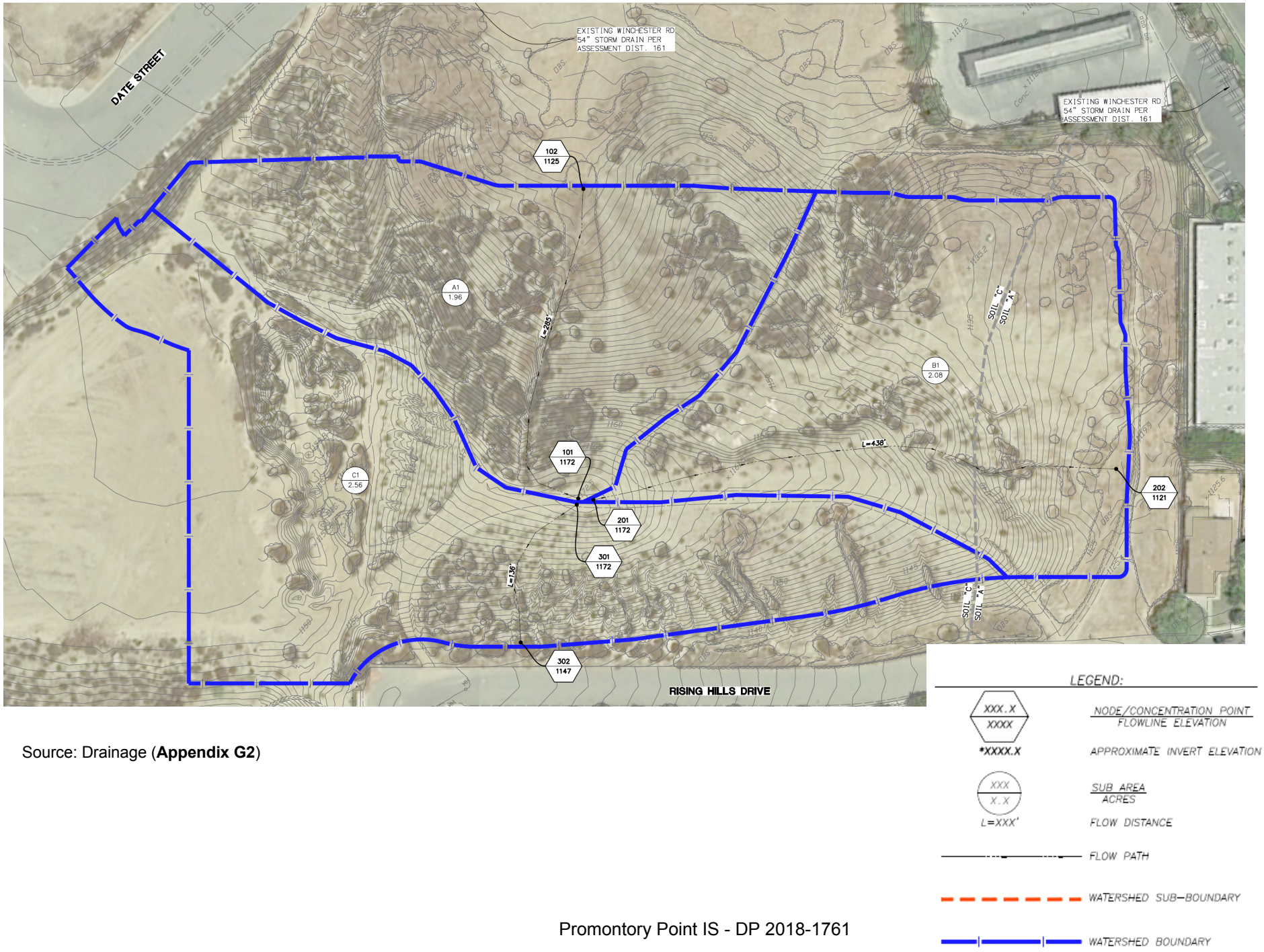
Source: Project Plans (**Appendix L**)

FIGURE 7-1
Geotechnical Map



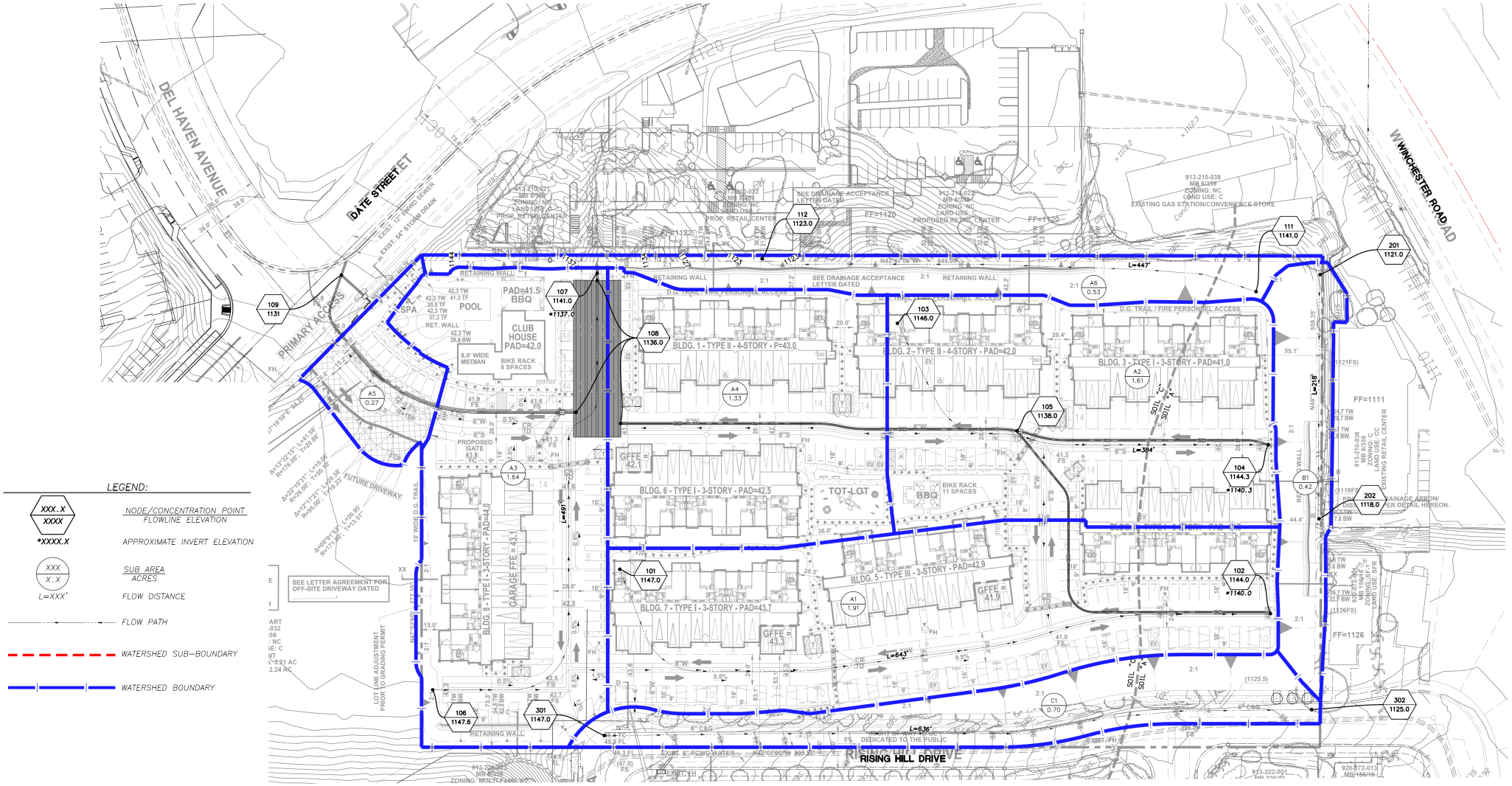
Source: Geotechnical Report (**Appendix E1**)

FIGURE 10-1
Pre-Project Hydrology Map



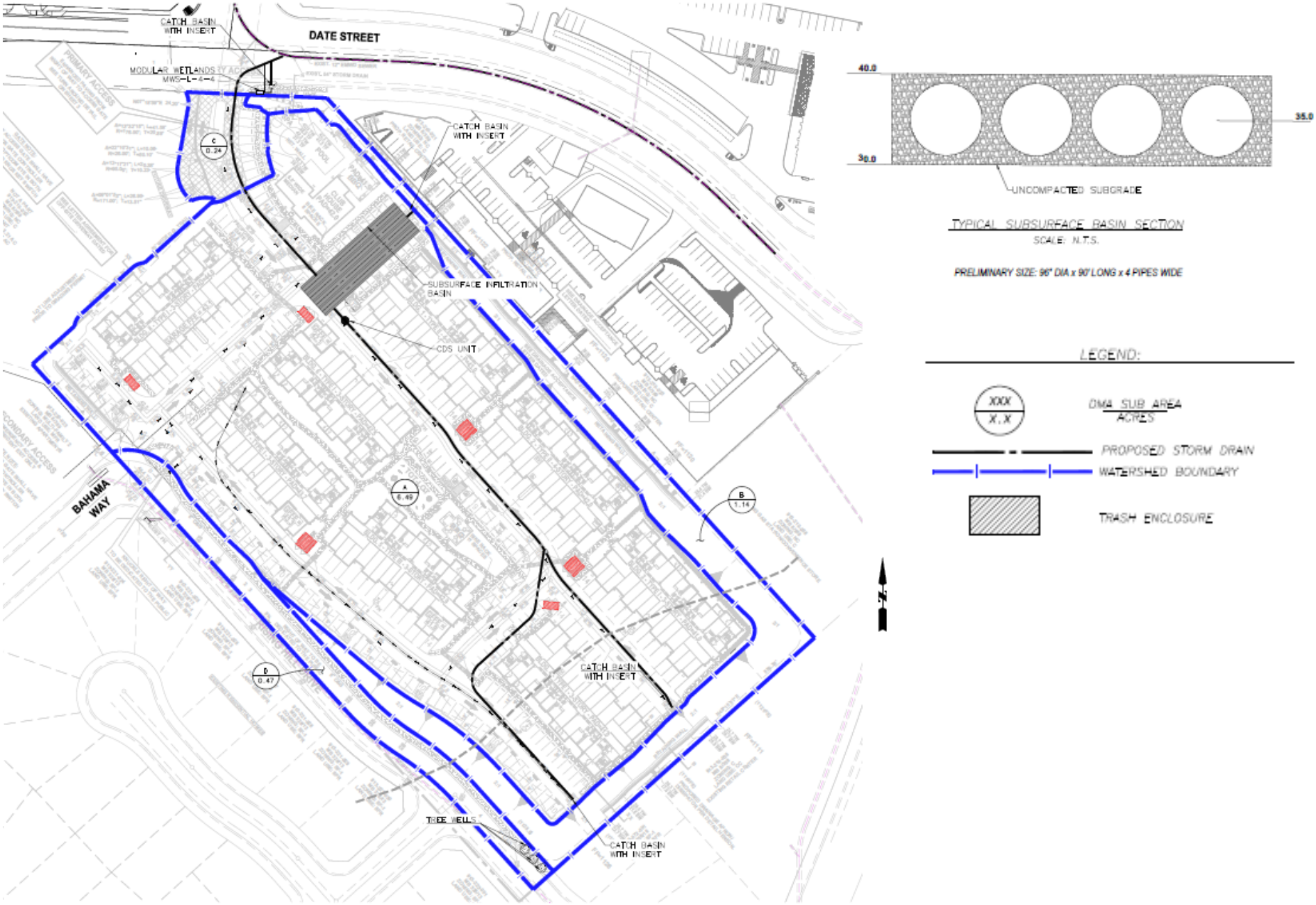
Source: Drainage (**Appendix G2**)

FIGURE 10-2
Post-Project Hydrology Map



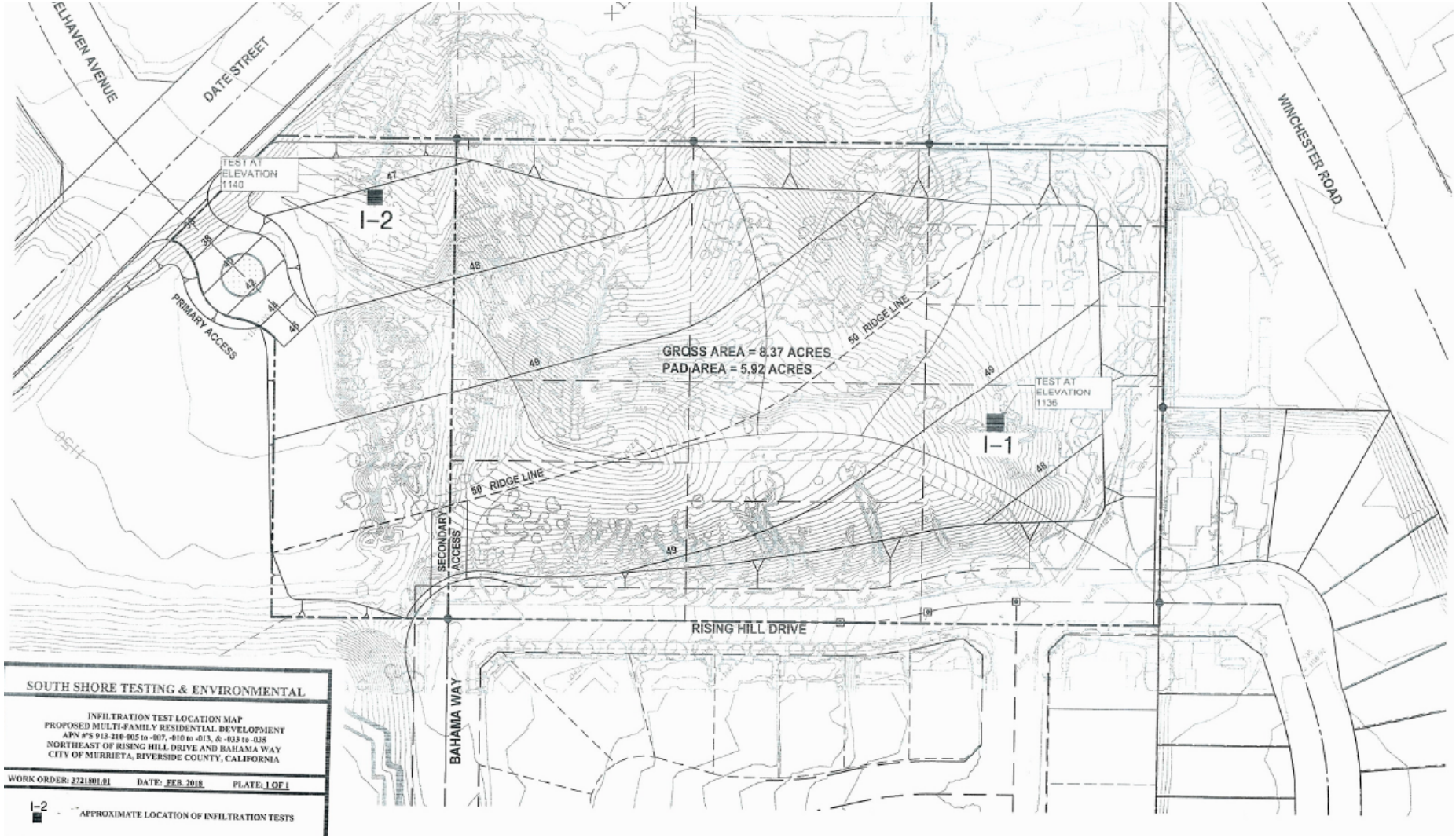
Source: Drainage (**Appendix G2**)

FIGURE 10-3
WQMP Site Plan



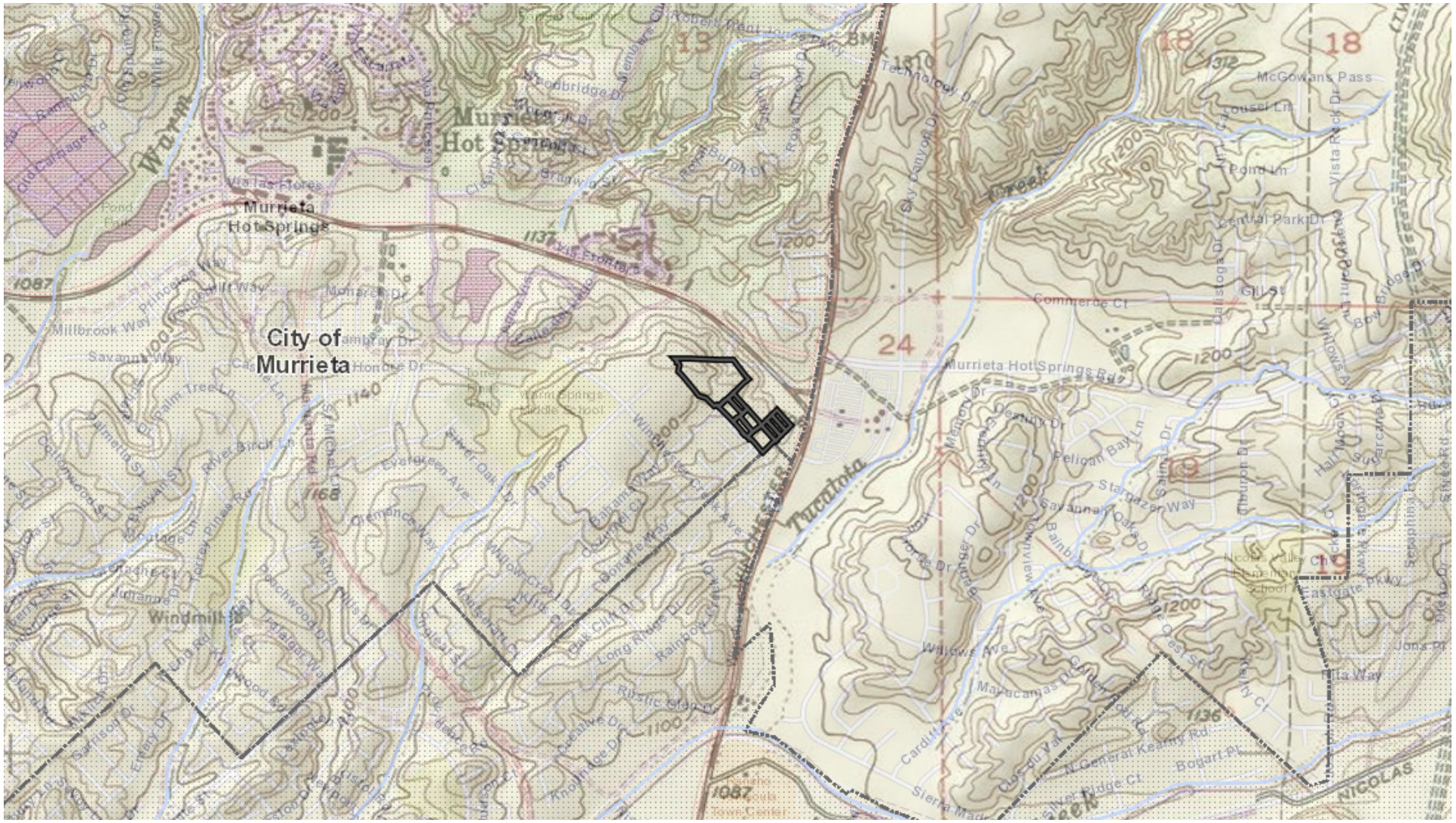
Source: WQMP (**Appendix G1**)

FIGURE 10-4
Infiltration Test Location Map



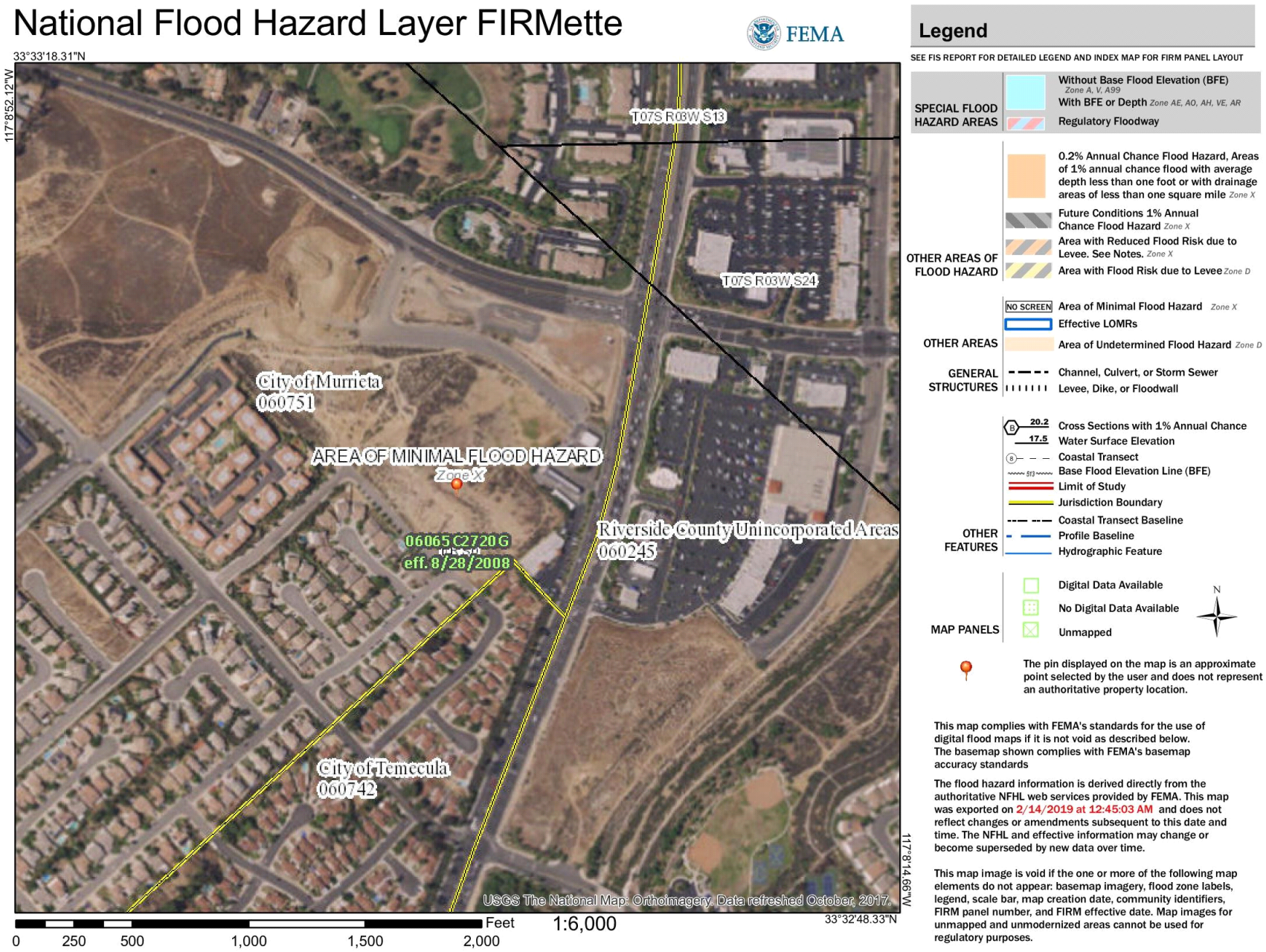
Source: Infiltration Report (**Appendix E2**)

FIGURE 10-5
Topography Map



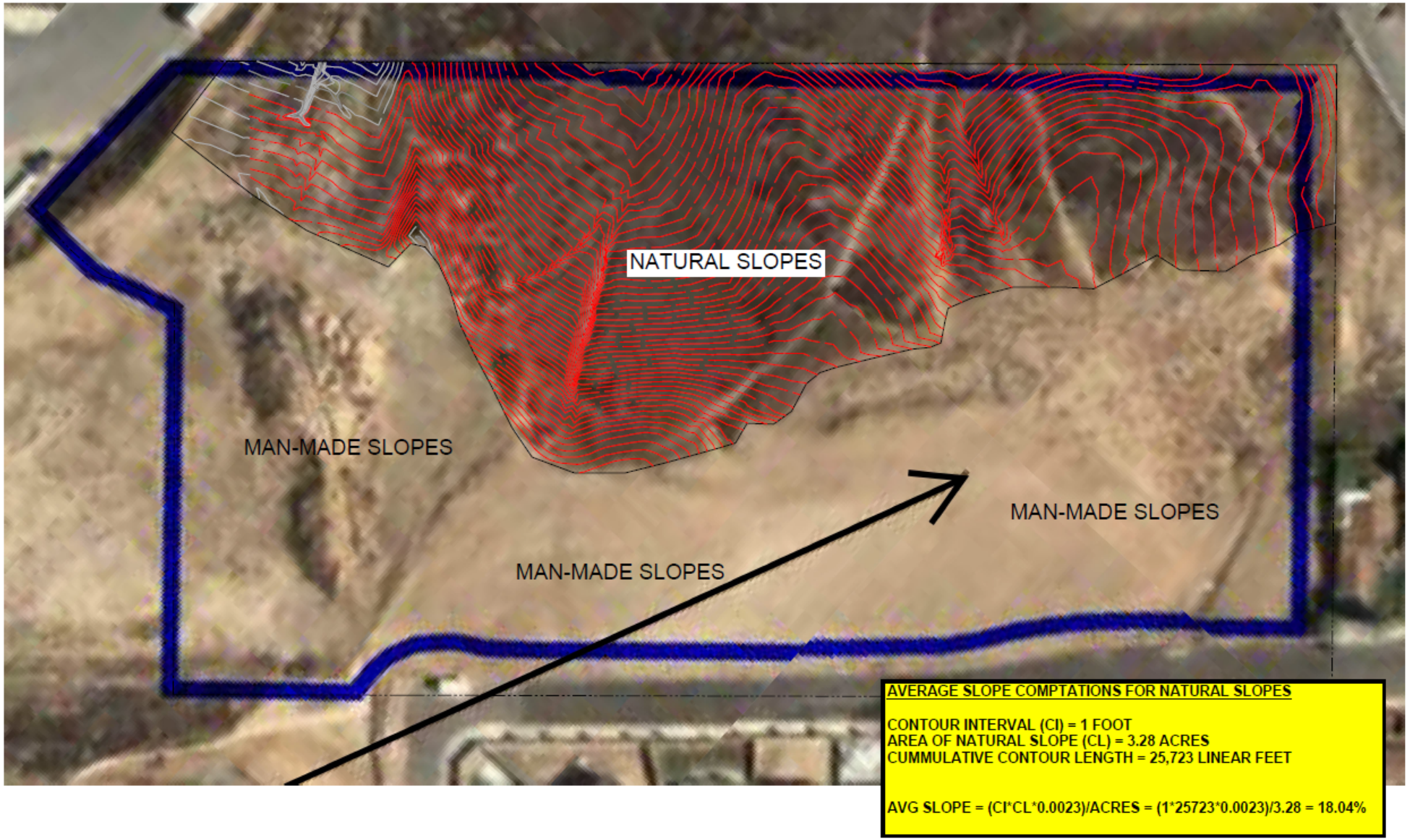
Source: Map My County https://gis.countyofriverside.us/Html5Viewer/?viewer=MMC_Public

FIGURE 10-6
FEMA Firmette Map



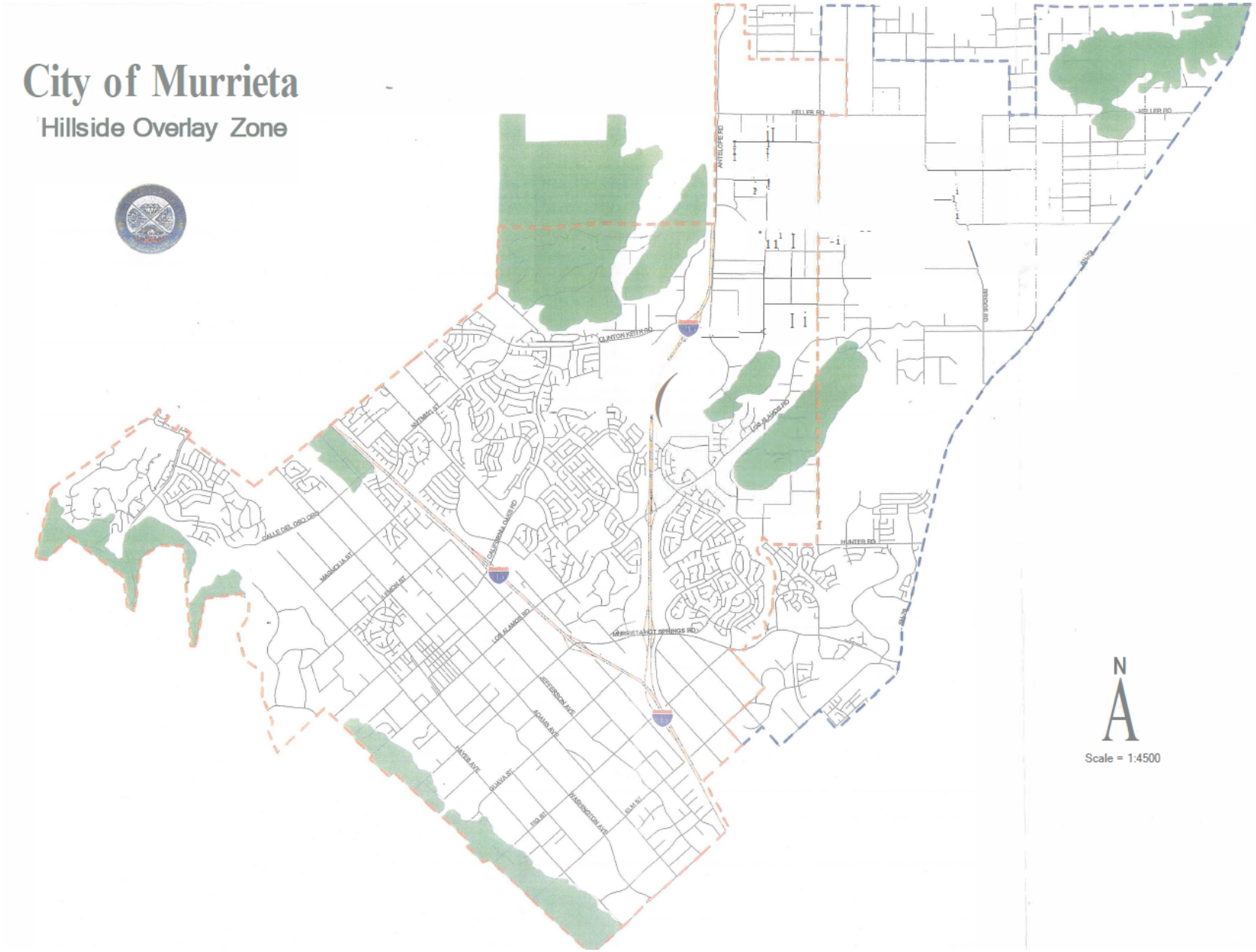
Source: FEMA https://p4.msc.fema.gov/arcgis/rest/directories/arcgisjobs/nfhl_print/nfhlprinttool2_gpserver/j612305c139a64489ad86c13b3ea2f6e0/scratch/FIRMETTE_a8f8f90f-301b-11e9-8974-001b21bbe86d.pdf

FIGURE 11-1
Average Slope Computation for Natural Areas



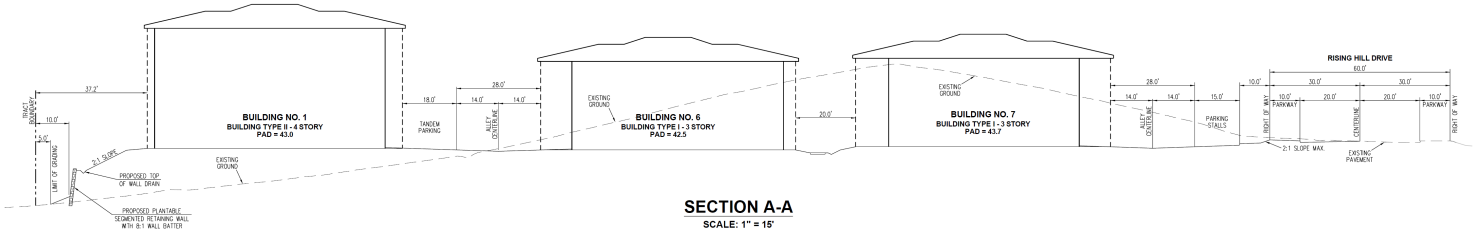
Source: VSL Engineering 10-2019

FIGURE 11-2
Hillside Overlay Zone

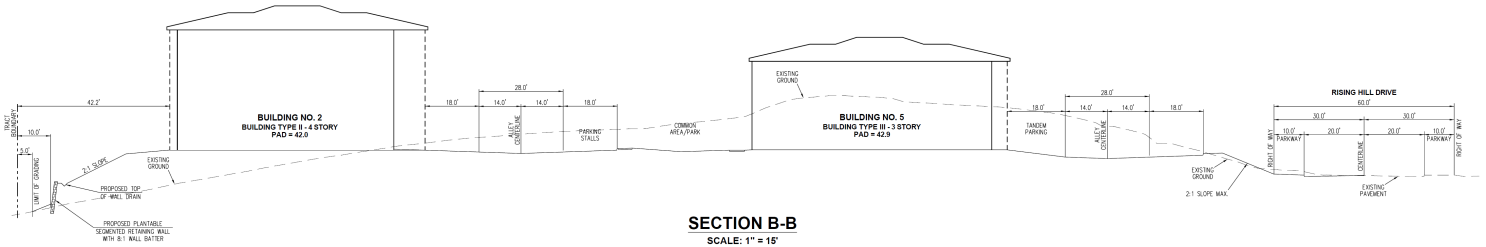


Source: Aaron Rintamaki - City of Murrieta

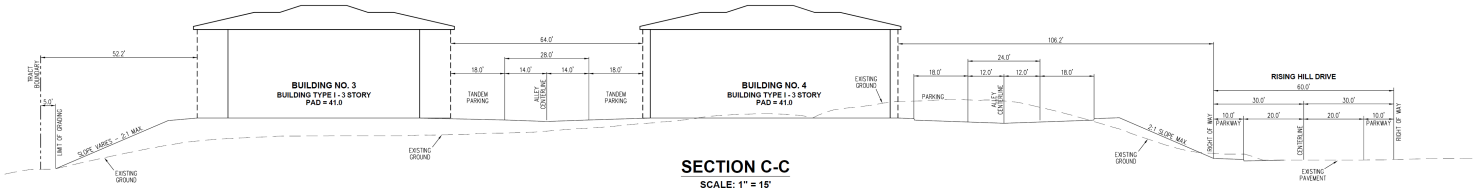
FIGURE 11-3
Site Cross Sections



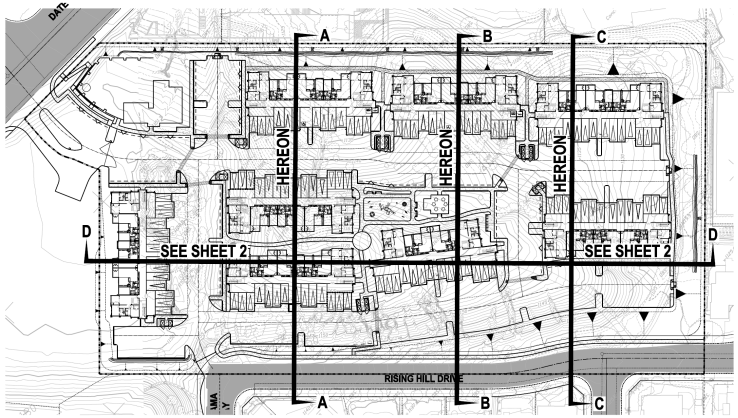
SECTION A-A
SCALE: 1" = 15'



SECTION B-B
SCALE: 1" = 15'



SECTION C-C
SCALE: 1" = 15'



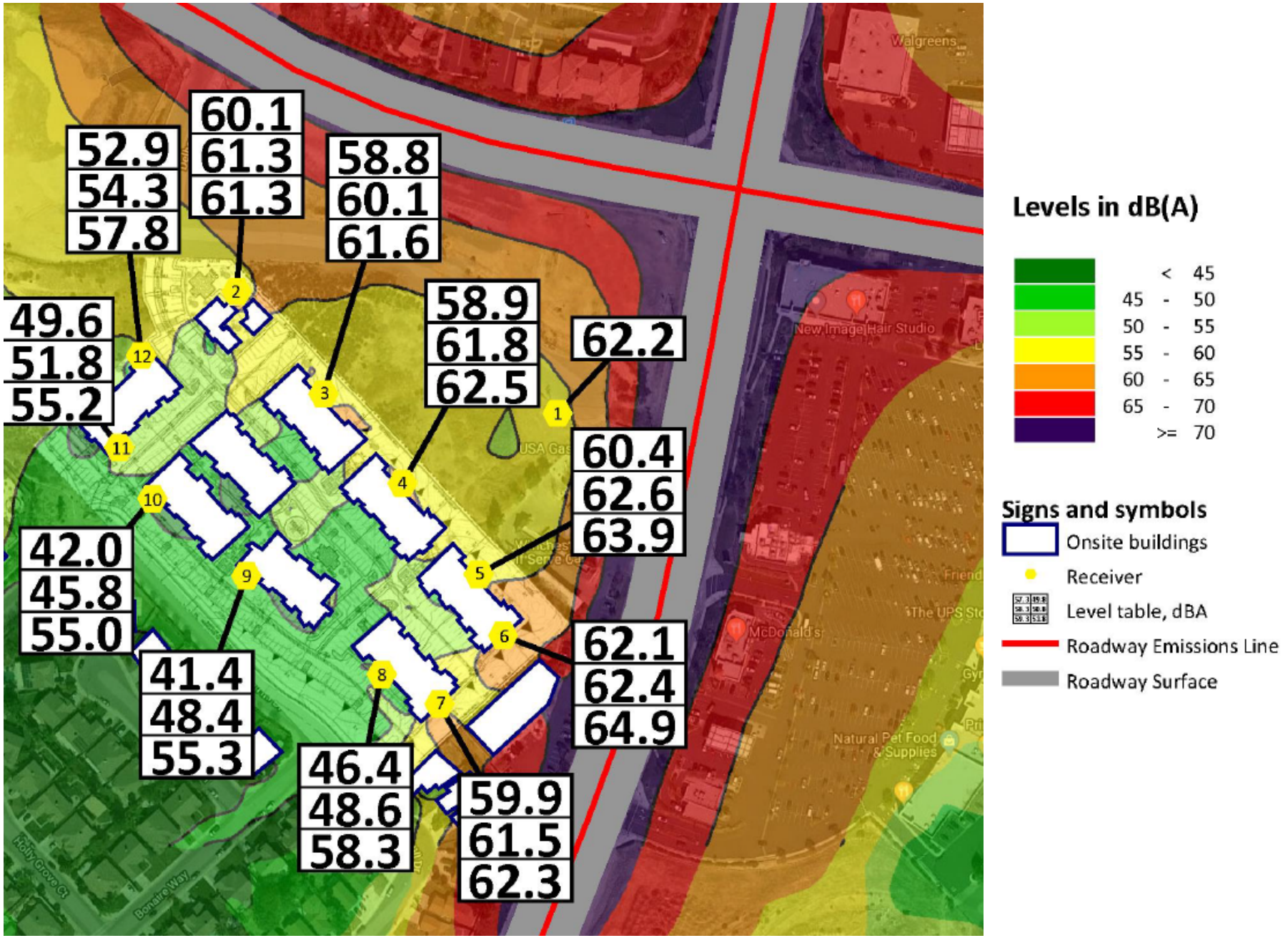
INDEX MAP

Source: Source: VSL Engineering 10-2019

FIGURE 13 -1
Measurement Location

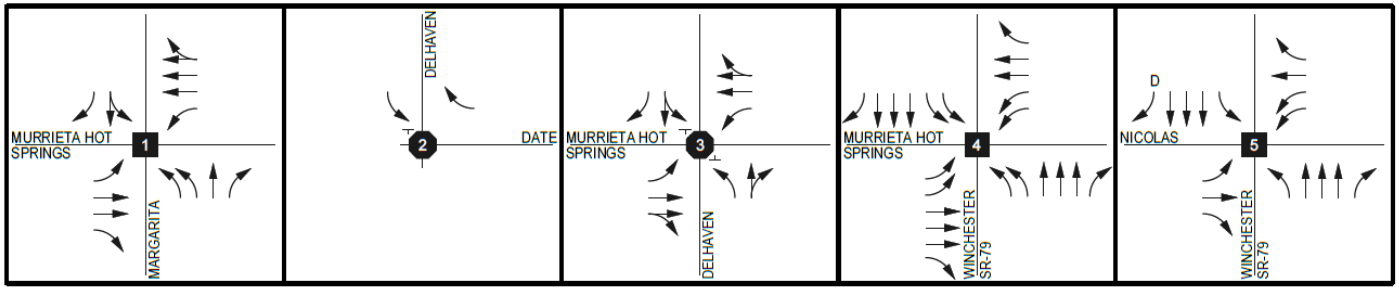
Source: Noise Impact Study (**Appendix H**)

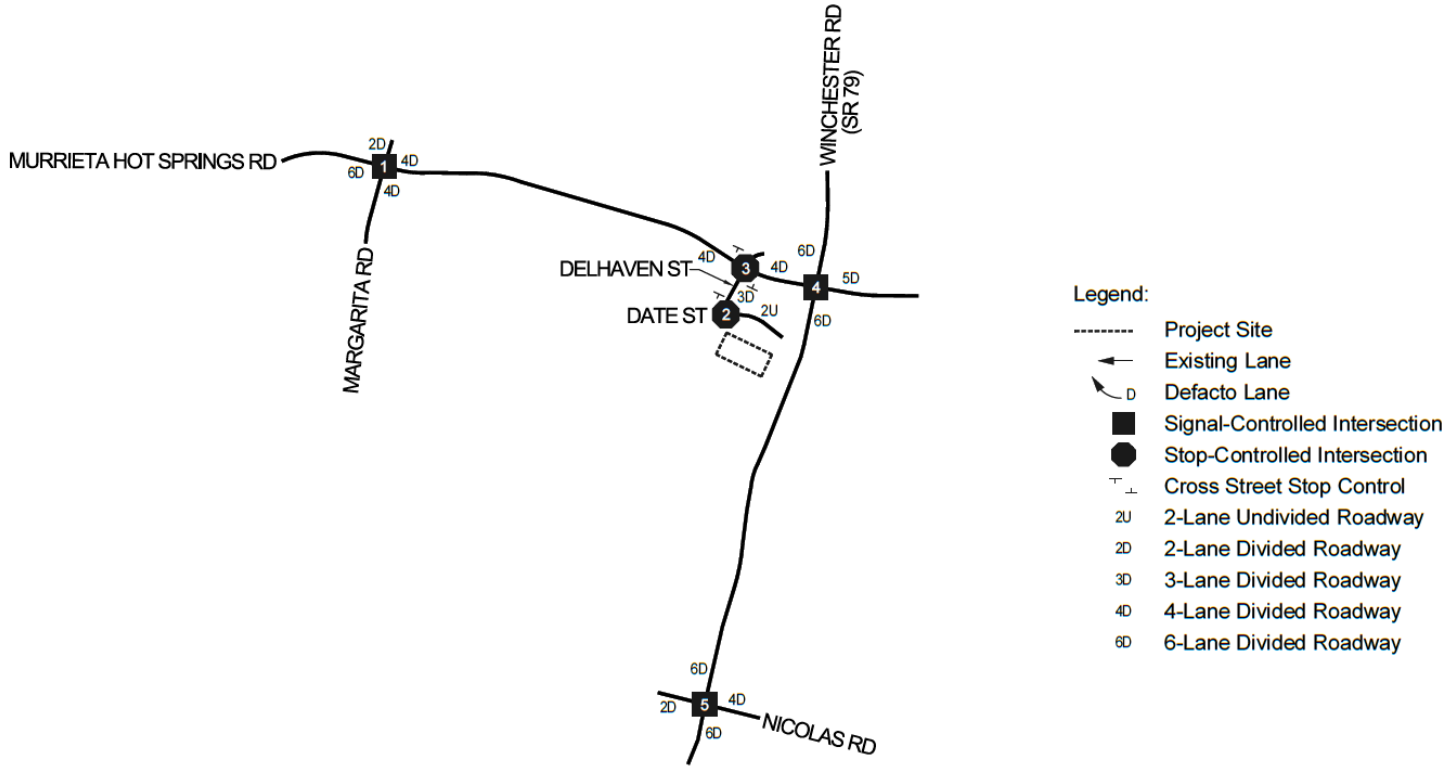
FIGURE 13-2
Existing Plus Project Traffic CNEL Noise Contours



Source: Noise Impact Study (**Appendix H**)

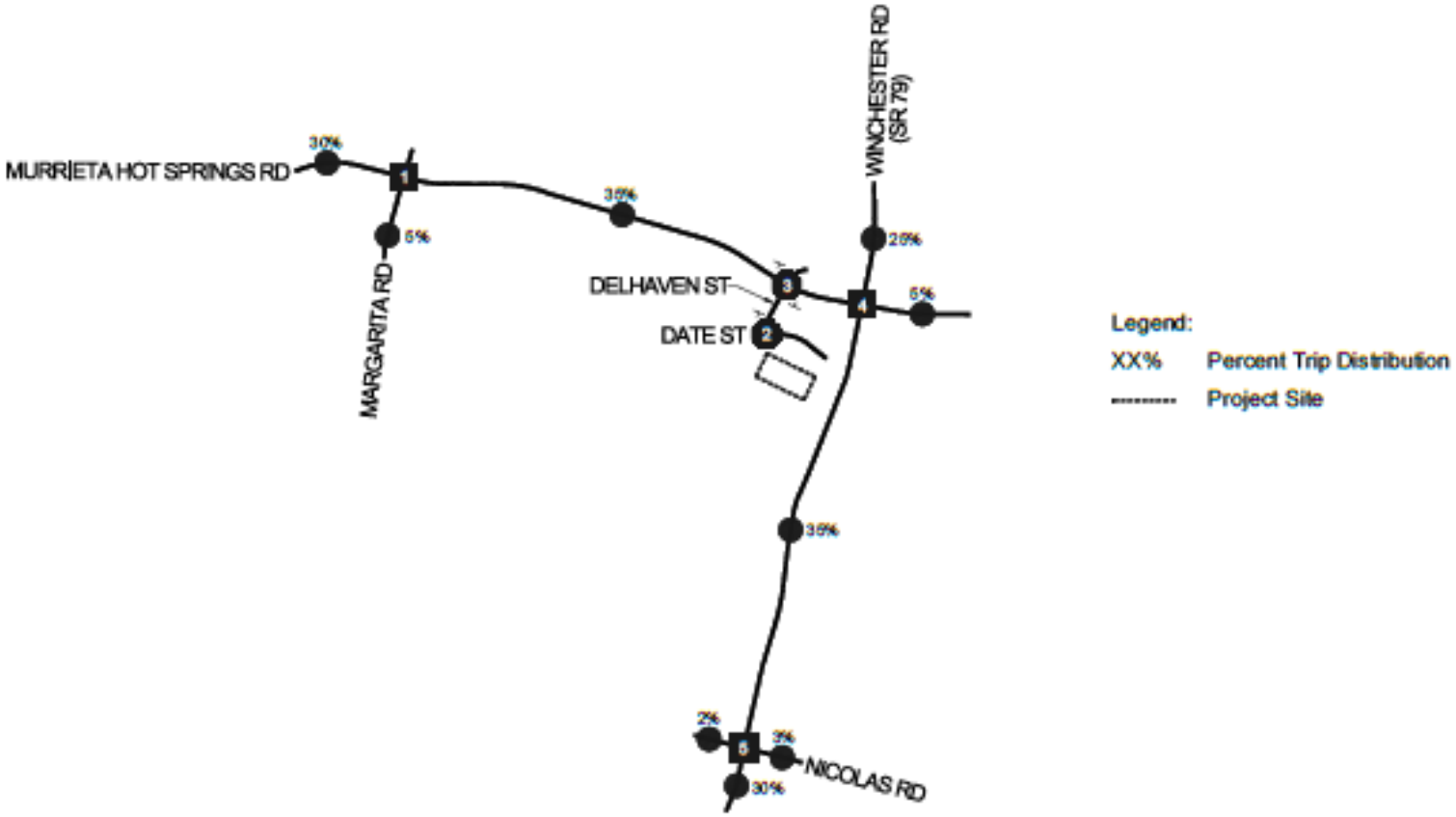
FIGURE 17-1
Existing Lane Geometry and Intersection Controls





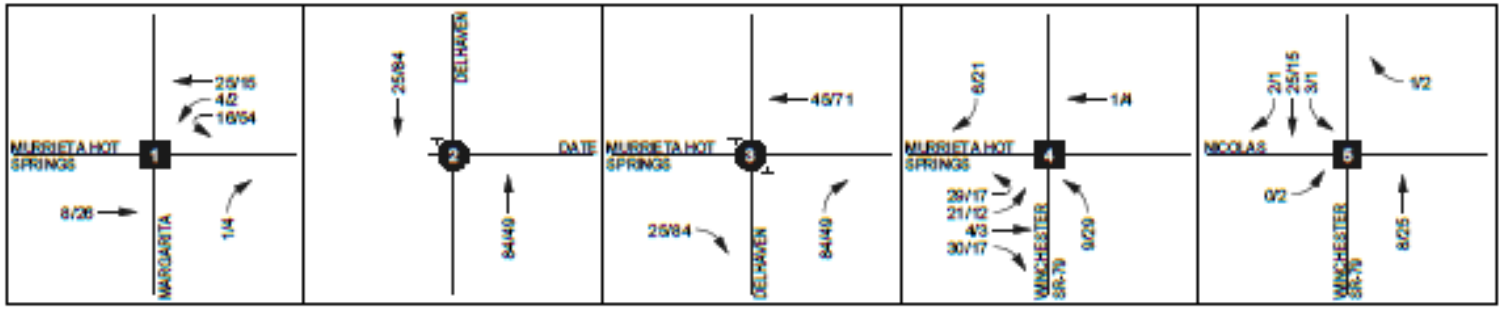
Source: Traffic impact Analysis (**Appendix I**)

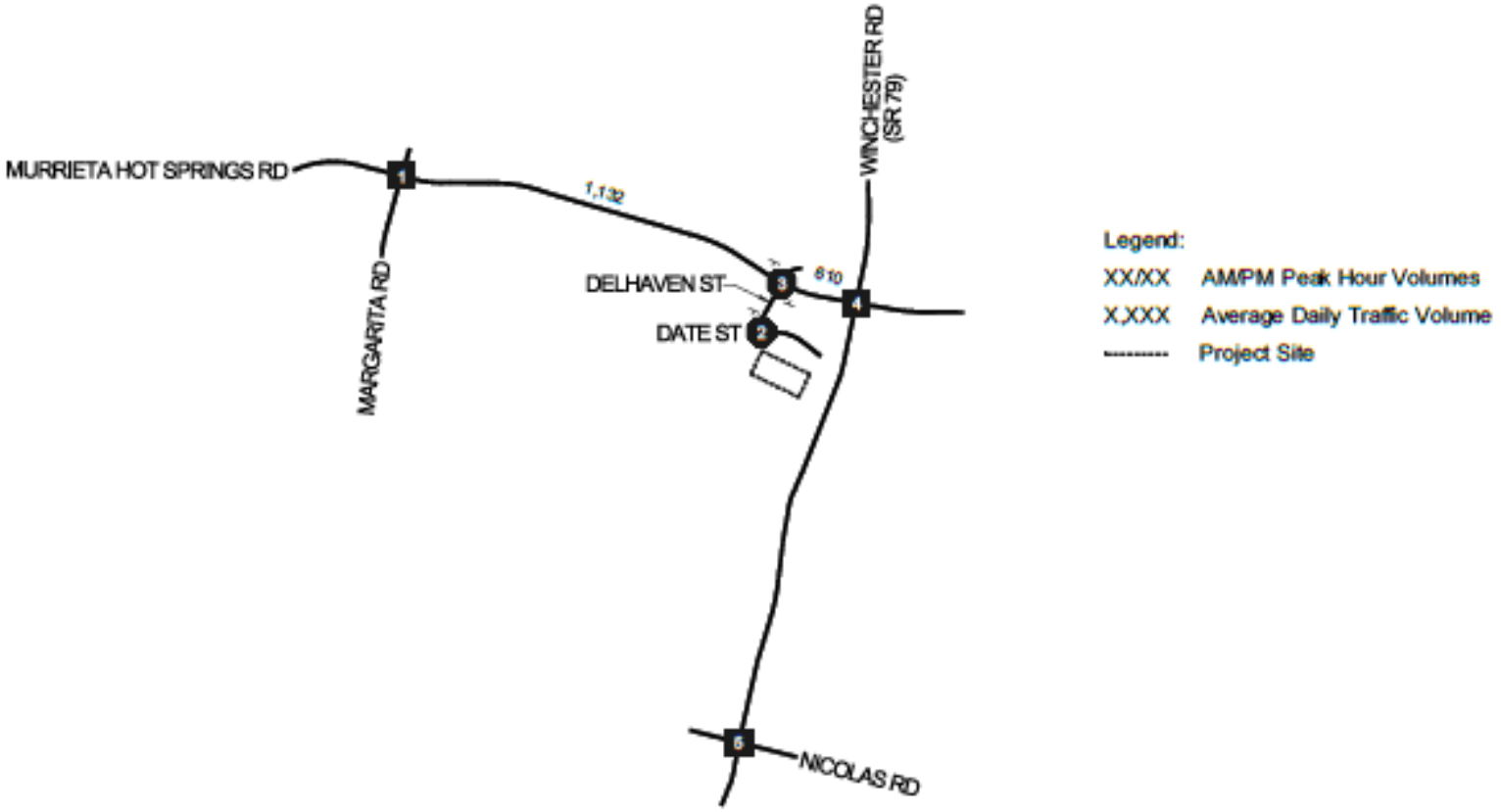
FIGURE 17-2
Trip Distribution of Proposed Project Trips at Study Intersections



Source: Traffic impact Analysis (**Appendix I**)

FIGURE 17-3
Projected PCE Trip Assignment of Proposed Trips





Source: Traffic impact Analysis (**Appendix I**)

FIGURE 17-4
Cumulative Project Map

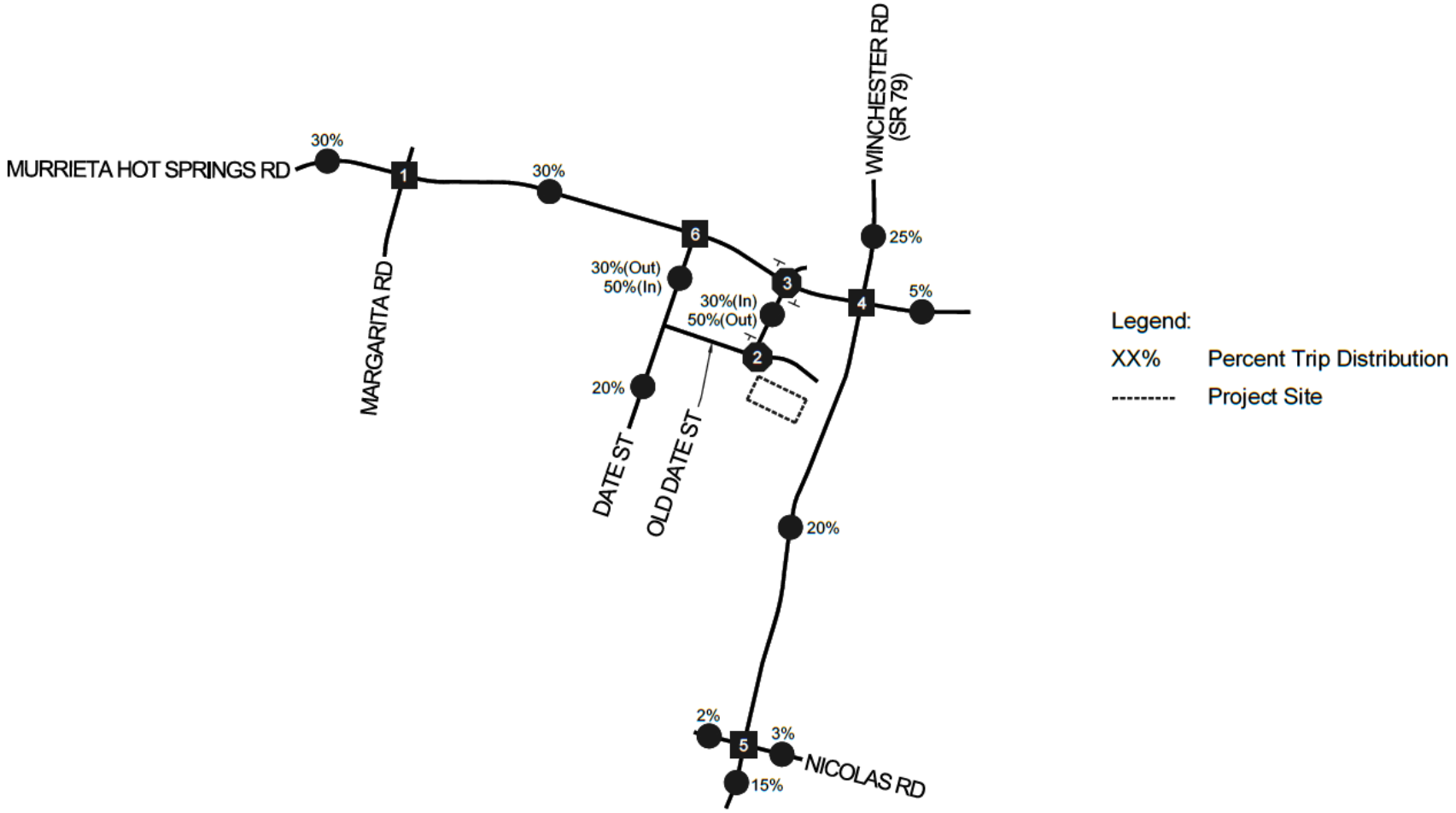
Legend:

(X) Approximate Cumulative Project Locations

--------- Project Site

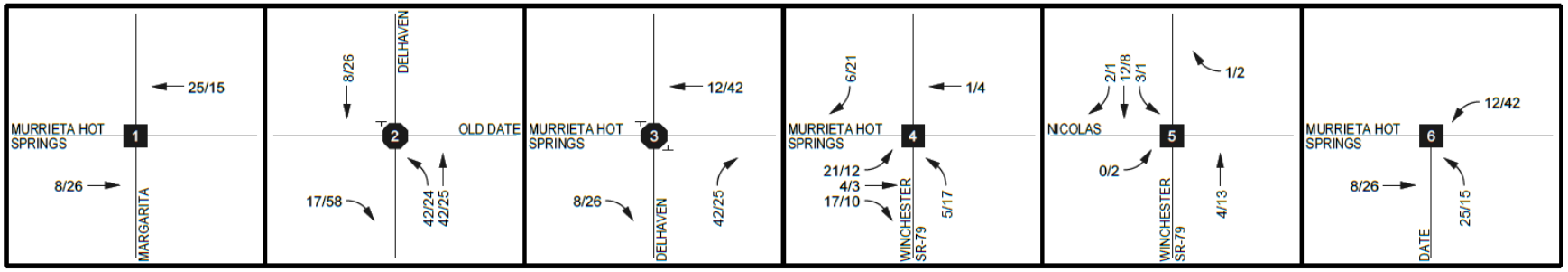
Source: Traffic impact Analysis (**Appendix I**)

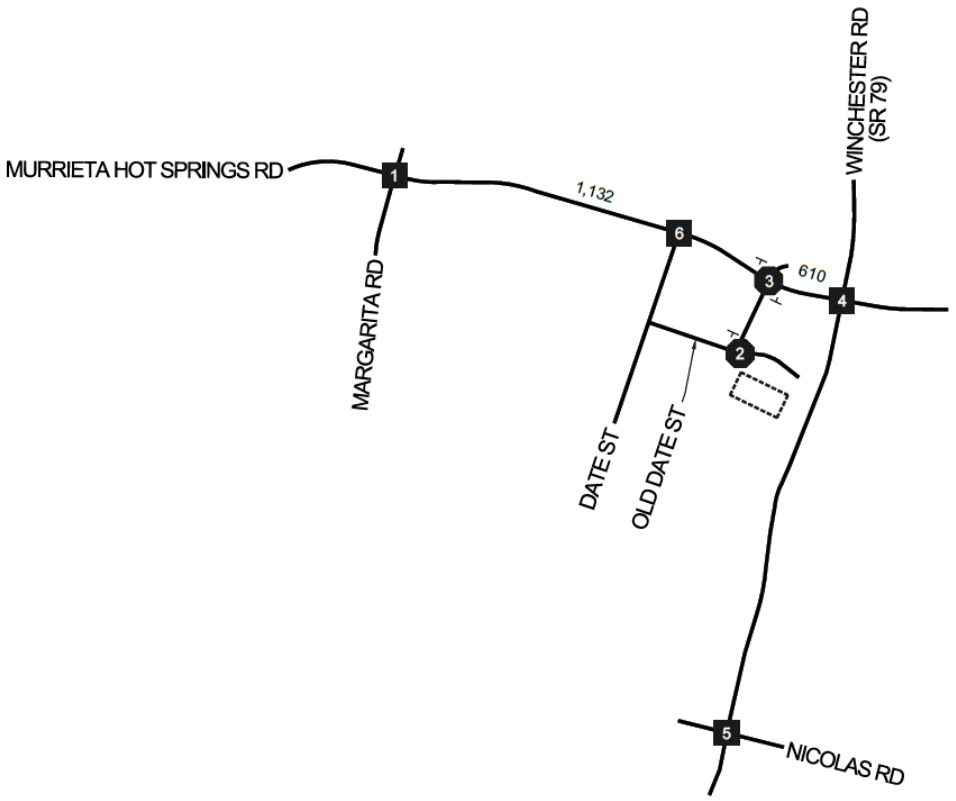
FIGURE 17-5
Trip Distribution of Proposed Project Trips for EAPC Conditions (w/Date Street)



Source: Traffic impact Analysis (**Appendix I**)

FIGURE 17-6
Trip Distribution of Proposed Project Trips for EAPC Conditions (w/o Date Street)





Source: Traffic impact Analysis (**Appendix I**)

APPENDICES
(on CD)