GENERAL PLAN AMENDMENT

FALLBROOK MEADOWS RESIDENTIAL PROJECT

MITIGATED NEGATIVE DECLARATION (MND)

June 10, 2022

City of Yucaipa
Development Services Department
34272 Yucaipa Boulevard
Yucaipa, CA 92399

CITY OF YUCAIPA
INITIAL STUDY

ENVIRONMENTAL CHECKLIST FORM

1. Project Title: Case No. 21-085/GPA/LUCR

2. Lead Agency Name and Address: City of Yucaipa, 34272 Yucaipa Blvd., Yucaipa, CA 92399

3. Contact Person and Phone Number: Jon Braginton, (909) 797-2489 x 264

4. Project Location: Located between 3rd Street and 2nd Street, and approximately 375 feet north of County Line Road. APNs: 0319-253-28, -29, -30, -84.

5. Project Sponsor's Name and Address: Premium Land Development: 108 Orange Street #5, Redlands, CA 92373.

6. General Plan Designation: Existing – RM-10M (Multiple Residential) / Proposed – RM-24 (High Density Multiple Residential) (minimum lot size 5 gross acres, minimum 20 dwelling units per acre and maximum 24 dwelling units for multi-family).

7. Description of the Project: Case No 21-085/GPA/LUCR: A General Plan Amendment to change the land use district from RM-10M (Multiple Residential) to RM-24 (High Density Multiple Residential)an affordability provision that will be executed through a Density Bonus Agreement and a Land Use Compliance Review to permit for a privately gated 200-unit multi-family apartment Project on four parcels totaling 8.39 acres and located between 3rd Street to the west, and 2nd Street to the east, at approximately 375 feet north of County Line Road. A lot merger will be processed to consolidate all four parcels into a single lot.

8. Surrounding Land Uses and Setting: Multi-family residences along the northwestern half of the subject site, single family residences along the northeastern half of the subject site, and single-family residences to the east beyond 2nd Street and south of the subject site.

9. Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement): None at this time; the Project would require an agreement with South Mesa Water Company for potable water service, and a Development Agreement with the Yucaipa Valley Water District for sewer service.

Introduction

This section explains the background and purpose of this Mitigated Negative Declaration (MND), which is the environmental review document prepared pursuant to the provisions of the California Environmental Quality Act (CEQA) for a General Plan Amendment to designate a property with an existing Multiple Residential Land Use Designation as High Density Residential ("GPA" or "Project"). It establishes the context and scope for the MND, and outlines the process for reviewing the Draft MND and issuing the Final MND. The City of Yucaipa is the lead agency under CEQA. A "lead agency" is defined by Section 21067 of CEQA as "the public agency which has the principal responsibility for carrying out or approving a Project which may have a significant effect upon the environment."

Environmental Review Process

This IS and Notice of Intent (NOI) to adopt a MND is being circulated for agency and public review and comment for 20 days beginning June 10, 2022. All written comments must be received by 5:30 p.m. June 30, 2022. Written comments or questions concerning this document should be directed to:

City of Yucaipa
ATTN: Jon Braginton
34272 Yucaipa Boulevard
Yucaipa, CA 92399

Detailed Project Description

The proposed Project consists of an amendment to the City of Yucaipa General Plan ("GPA") to change the Land Use Designation of four (4) subject parcels totaling 8.39 acres (APNs: 0319-253-28, -29, -30, -84) from the City's Multiple Residential (RM-10M) Land Use Designation to High Density Multiple Residential (RM-24) Land Use Designation. Located between 3rd Street to the west, and 2nd Street to the east, at approximately 375 feet north of County Line Road, the proposed Project GPA would facilitate for the permitting of high density multifamily residential development. Concurrent with the GPA, the Project application includes a Land Use Compliance Review (LUCR) to permit for the development of a privately gated 200-unit multi-family apartment Project on the four subject parcels, which will also include the demolition of four (4) existing single-family residential dwellings, and a Lot Merger that will consolidate the parcels into one lot.

The Project would consist of seven (8) 3-story apartment buildings and one (1) 1-story apartment building. The Project's floor plans would consist of fifty (50) one-bedroom units (650 sq. ft.), one hundred (100) two-bedroom units (890 sq. ft.) and fifty (50) three-bedroom units (973 sq. ft.). The Project also includes a 1-story, 4,169 sq. ft. rental office and recreational building with an outdoor private pool and jacuzzi and barbeque, a recreational area consisting of tot lot play areas, a fenced-in private dog park and a walkable pathway encompassing the recreational area.

This environmental document analyzes the Project that could be constructed should the GPA be adopted and also analyzes the proposed apartment community development component under a high-density multiple family residential use (up to a density of 24 units per acre), which could permit up to 201 units with facilitation of the proposed GPA. For comparison, the existing land use designation of RM-10M would permit 8.7 dwelling units per acre as a typical multiple family Project that would result in a total of 73 multiple family homes for the entire size of the subject parcels combined (8.39 acres), not including any

Density Bonus Agreements or Accessory Dwelling Units, should the GPA not be approved. This GPA for the RM-24 designation would therefore result in a net increase of 128 dwelling units from the existing requirements. The Project also proposes an affordability provision that will be executed through a Density Bonus Agreement. The Project's architectural elevation rendering exhibits have been submitted and would be analyzed consistent with the development Standards listed in the Yucaipa Development Code for the proposed RM-24 District.

Project Setting

The proposed GPA would change the land use designation of approximately 8.39 acres within four (4) parcels located between 3rd Street to the west, and 2nd Street to the east, at approximately 375 feet north of County Line Road (Figure 1 and 2). The subject parcels consist of four (4) existing single family residences fronting 2nd Street and 3rd Street with detached garages, sheds and undeveloped graded land situated toward the rear of each lot. The property also contains non-protected trees and shrubbery near to these residences. The area is surrounded by residential uses to the north, south, east, and west. The Project area is generally flat with a slight upward slope from west to east, and the site has no known biological resources or other natural features. The GPA area has street frontage on 2nd Street and 3rd Street, which are paved two (2) lane local streets with an ultimate right-of-way of sixty (60) feet. Proposed Projects within the GPA area would be required to provide the necessary street improvements, including, curb, gutter, sidewalk, and matchup paving to the existing street along the street frontage.

As noted above, a residential entitlement is proposed on four parcels subject to the GPA and has been designed to comply with the proposed Land Use District requirements. The proposed Project features a Spanish style architecture that will be incorporated into the exterior design of each apartment building. Project Floorplans have been developed with anticipated square footages for the apartment units ranging from 650 square feet for a one-bedroom unit, 890 square feet for a two-bedroom unit, and 973 square feet for a three-bedroom unit.

Private amenities consisting of outdoor patios with enclosed storage rooms to serve the residents of the development are provided as part of the Project. Common areas proposed for the Project include a recreation clubhouse, a swimming pool with spa, two (2) tot lots, shaded structures with picnic tables, outdoor barbeque grills, open space and common area landscaping, access driveways, and a total of 372 standard, ADA and compact car parking spaces consisting of covered parking and guest parking within the Project.

Project Phasing

The proposed Project is expected to be constructed in one single phase will be built out to meet market demand.

Figure 1 – Aerial Image of Site

Figure 2 – Existing Land Use Designations

Figure 3 –Site Plan Exhibit

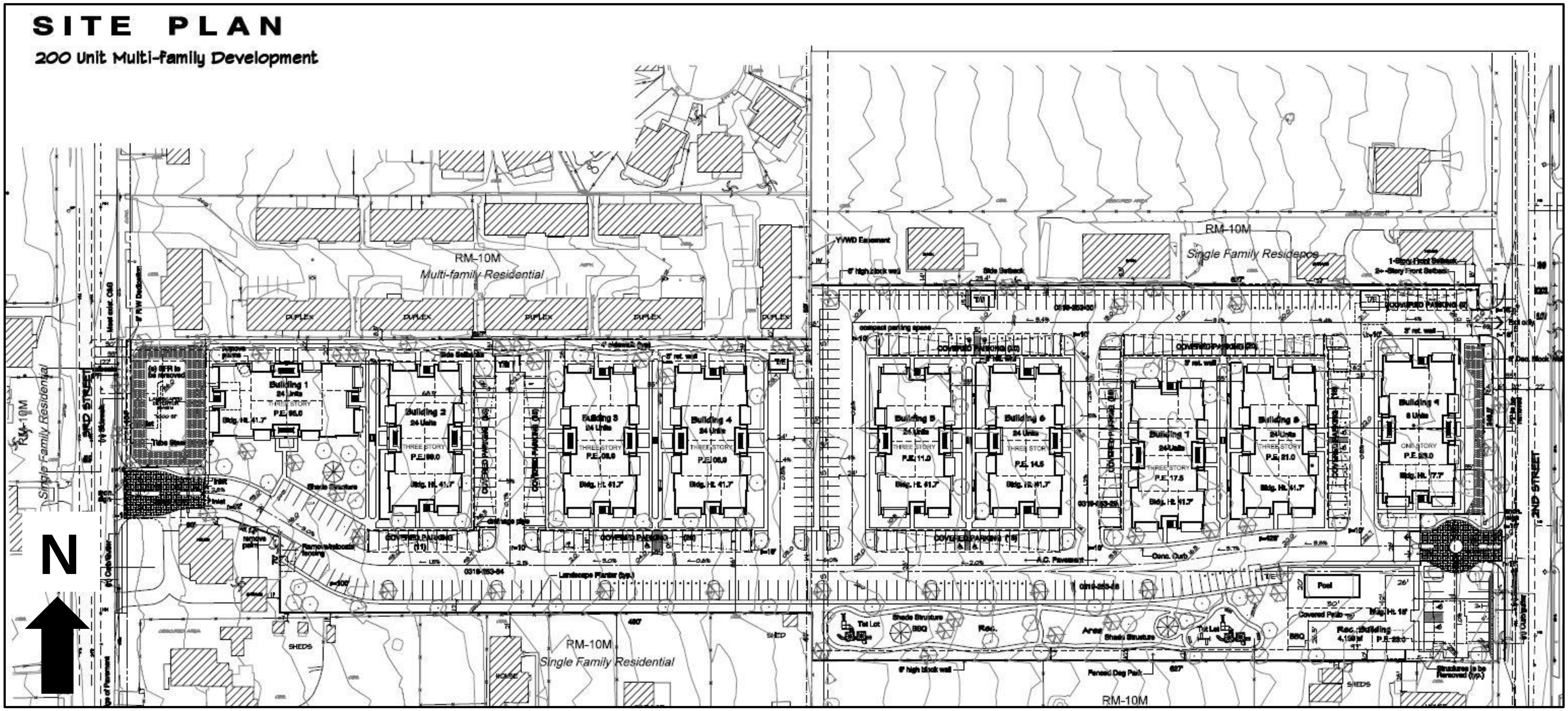


Figure 4 –Elevations – 1-story Apartment Building

Figure 5 –Elevations – 3-story Apartment Building

Figure 6 –Elevations – Clubhouse

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		Hazards & Hazardous Materials		Recreation
	Agricultural Resources		Hydrology/Water Quality		Transportation/Traffic
	Air Quality		Land Use/Planning		Tribal Resources
	Biological Resources		Mineral Resources		Utilities/Service Systems
	Cultural Resources		Noise		Mandatory Findings of Significance
	Geology/Soils		Population/Housing		
	Greenhouse Gases		Public Services		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	X
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 "potential 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 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.	

Jon Braginton June 7, 2022

Signature Date

Jon Braginton

Printed Name For

1) 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.

2) 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).

3) 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: Potentially Significant Unless Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less 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 17, “Earlier Analysis,” may be cross-referenced).

5) Earlier analysis 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 analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. **AESTHETICS.** Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In nonurbanized 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?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

a) Policy PR-4.7, Scenic Resources, of the City's 2016 General Plan states that the City will "Protect Yucaipa's scenic resources, including scenic corridors along roads and views of the hillsides, prominent ridgelines, canyons, and other significant natural features, to the extent practical." Resources identified in the General Plan includes the City's designated Scenic Corridors (Bryant Street, Yucaipa Boulevard, Wildwood Canyon Road, and Oak Glen Road) and the prominent hillsides, ridgelines, and open space areas that surround the City, including Crafton Hills and the San Bernardino National Forest. The Project site is relatively flat, and is not located adjacent to the City's scenic corridors or to any unique open space features such as a prominent hillside or ridgeline. In addition, the existing development pattern within the vicinity of the proposed Project site features a mixture of single and multi-family residences, a commercial retail center located on County Line Road (Tower Center) and an elementary school on 2nd Street (Calimesa Elementary School). The proposed Project consists of a GPA to allow high density multiple-family development that would meet the requirements of the RM-24 Land Use District. The setbacks and building separation requirements listed in the Development Code have been designed to ensure a compatible development pattern within the residential areas within City, and to ensure that the mass and prominence of future residential Projects are minimized along corridors. Specifically, the RM-24 Land Use District requires a minimum front yard setback of 35 feet (40 feet average) and a side yard setback of 20 feet, which exceeds those listed in the existing RM Land Use District designation. In addition, the Project area will feature maintained landscaping and with installation of sidewalks adjacent to the public right of ways along 2nd Street and 3rd Street. In addition, the Project design orients the smaller one- and two-story structures along the periphery of the site, and locates the three story buildings within the interior of the site, to help to minimize the building mass and bulk along public rights of way. As such, the proposed Project would have a less than significant effect on scenic vistas.

b) According to Caltrans Scenic Highway Program, there are no official state designated scenic highways that exist within the City of Yucaipa. A portion of State Route 38 passes through the City of Yucaipa, and is an eligible state scenic highway that has not been officially designated; however, this section of roadway is located approximately five miles north from the proposed Project site. The City of Yucaipa has designated Bryant Street, Yucaipa Boulevard, Wildwood Canyon Road, and Oak Glen Road as scenic corridors within the City. The proposed GPA would impact a site that has frontage on 2nd and 3rd Street, which are not designated as scenic corridors. As such, there would be no impacts to resources along a scenic route as a result of the proposed Project.

c) The Project is located on four parcel lots consisting of four (4) existing single-family residences fronting 2nd Street and 3rd Street with graded undeveloped land toward the rear of each lot.. The property contains non-protected trees and shrubbery near to these residences, contains no other notable resources, and is surrounded by a mixture of single-family residences and multiple family developments. The GPA area features a proposal for a privately gated 200-unit multi-family apartment Project featuring Spanish style architecture as part of the exterior design of each apartment building. The architectural design and conceptual landscaping for any future development that would be proposed, including the current Project, is required to be reviewed and approved by the Planning Commission prior to any construction as a standard Condition of Approval, and this process serves to confirm that the design would be compatible and consistent with the residential character in the area. Therefore, development of the proposed Project would have a less than significant impact to the visual quality by providing better uniformity for the adjacent residential units that are located along the exterior boundaries of the Project site.

d) Additional lighting will occur due to the development of the Project and the installation of streetlights adjacent to the Project. The proposed GPA would permit the construction of 200 apartment units to the area, which will result in new sources of nighttime lighting, including, but not limited to: onsite street lighting, building-mounted lights on the proposed one- and three-story buildings, covered parking, and ornamental landscaping and pathway lighting. However, the amount of lighting will be similar to other residential areas surrounding the site, and that the Project will be required to comply with the City's Development Code, which contains property development and general design standards that ensure new developments and expansions of existing developments will not have a negative impact upon surrounding land uses. This includes the requirement that any lighting to be added to the Project shall be shielded to minimize light spillage to adjacent properties. Substantiated through the Architectural Review process, the perimeter of the Project boundary would also be developed with drought-tolerant trees to minimize light spillage onto neighboring areas. Therefore, impacts related to light and glare will be less than significant through compliance with the Development Code.

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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

a-b) According to the State Dept. of Conservation Important Farmland Map, San Bernardino County 2014, Sheet 2 of 2, the proposed Project site is designated "Urban and Built-up Land" and does not contain any prime, unique, or important farmland. In addition, there are no active Williamson Act contracts within the City of Yucaipa. The City of Yucaipa utilizes a "one map system" in which the General Plan Land Use Designations and Zoning Categories are the same and combined onto one map. The property is currently designated as Multiple Residential and proposed to be High Density Multiple Residential, neither of which are agricultural nor forest land designations. In addition, the site is currently improved with existing single-family residences with detached garages and sheds fronting 2nd Street and 3rd Street. No agricultural activities occur onsite. The proposed GPA and the proposed Project would not conflict with zoning for an agricultural use or a Williamson Act contract and would not convert farmland to a non-agricultural use.

c-d) No forest land or timberland is located within the Project site.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

e) As noted in items a-d above, the area is designated "Urban and Built-up Land" and no portions of the area are currently farmed nor subject to Williamson Act contracts. In addition, no portion of the area is located within a forest area. As such, the proposed GPA would not affect these resources.

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?			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 quality standard?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

a, c) Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of the air quality plans is to bring an area that does not attain federal and state air quality standards into compliance with those standards pursuant to the requirements of the Clean Air Act and California Clean Air Act. A consistency determination plays an important role in local agency Project review by linking local planning and individual Projects to the applicable air quality plan.

The proposed Project is within the South Coast Air Basin (Basin), and the South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the Basin. SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources, and responded to this requirement by preparing the 2016 Air Quality Management Plan (AQMP), an air quality management plan covering all portions of the Basin.

The regional emissions inventory for the South Coast Air Basin was compiled by SCAQMD, the San Bernardino Association of Governments (SANBAG), and the Southern California Association of Governments (SCAG), and is used for the AQMP. Regional population, housing, and employment Projections are based, in part, on the City's General Plan land use designations. The proposed GPA would result in a land use change from the City's Multiple Residential (RM-10M) Land Use Designation to High Density Multiple Residential (RM-24) Land Use Designation on approximately 8.39 acres comprised of four (4) existing parcels situated between 3rd Street to the west, and 2nd Street to the east, at approximately 375 feet north of County Line Road

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." 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 or increments based on the year of Project buildout and phase.

Based on the air quality modeling analysis that has been completed (Appendix A), neither the short-term construction nor the long-term operation of the proposed Project will result in significant impacts based on SCAQMD regional and local thresholds of significance (See Table 1, *Construction - Maximum Daily Emissions* and Table 2, *Operation - Maximum Daily Emissions*). 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.

Furthermore, the proposed Project is not anticipated to substantially exceed the AQMP assumptions for the Project site and is consistent with the AQMP for the second criterion because the Project site currently has a residential General Plan designation, and the change of General Plan Land Use Designation from Multiple Residential (RM-10M) to High Density Multiple Residential (RM-24) will not substantially change the residential nature of the designation. The addition would result in a net increase of 196 apartment dwelling units (upon demolition and removal of four (4) single family residences) and would not result in a substantial change of the built-out Projection for the City and would represent a fractional change to the entire SCAB area. Based on the above, the proposed Project will not result in an inconsistency with the SCAQMD AQMP. Therefore, the Project will not conflict with or obstruct the implementation of the 2016 AQMP, and a less than significant impact will occur

b) The proposed Project would result in the development of approximately 8.39 acres into 200 multi-family apartment units. To quantify Project-related impacts, the proposed Project was evaluated utilizing the CalEEMod version 2020.4.0 air quality modeling program for this MND, using very conservative parameters for its assessment. The results of air quality modeling analysis for construction and operational emissions are as follows:

Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Demolition	On-Site[1]	2.64	25.72	20.59	0.04	1.30	1.16
	Off-Site[2]	0.07	0.15	0.64	0.00	0.18	0.05
	Subtotal	2.71	25.87	21.24	0.04	1.49	1.21
Grading	On-Site[1]	1.95	20.86	15.27	0.03	3.70	2.20
	Off-Site[2]	0.06	0.04	0.62	0.00	0.17	0.05
	Subtotal	2.01	20.90	15.89	0.03	3.87	2.25
Building Construction	On-Site[1]	1.71	15.62	16.36	0.03	0.81	0.76
	Off-Site[2]	1.24	3.87	11.97	0.04	3.44	0.96
	Subtotal	2.94	19.49	28.33	0.07	4.25	1.72
Paving	On-Site[1]	1.48	10.19	14.85	0.02	0.51	0.47
	Off-Site[2]	0.06	0.04	0.57	0.00	0.17	0.05
	Subtotal	1.54	10.23	15.42	0.02	0.68	0.51
Architectural Coating	On-Site[1]	62.38	1.30	1.81	0.00	0.07	0.07
	Off-Site[2]	0.21	0.13	2.00	0.01	0.60	0.16
	Subtotal	62.59	1.43	3.81	0.01	0.67	0.23
Total for overlapping phases[3]		67.07	31.15	47.56	0.10	5.59	2.46
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		**No**	**No**	**No**	**No**	**No**	**No**

Source:
Fallbrook Meadows Residential Project Air Quality, Global Climate Change, and Energy Impact Analysis, Table 6, Gandini Group Inc., September 14, 2021.
CalEEMod Version 2020.4.0

Notes:

(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and grading PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.

(2) Off-site emissions from equipment operated on public roads.

(3) Construction, painting and paving phases may overlap.

Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area Sources[1]	5.37	3.18	17.82	0.02	0.33	0.33
Energy Usage[2]	0.09	0.80	0.36	0.01	0.06	0.06
Mobile Sources[3]	5.07	7.00	49.92	0.11	10.65	2.89
Subtotal Emissions	10.53	10.98	68.09	0.13	11.04	3.29
-existing single-family residentialuses to be removed	-1.28	-0.32	-3.75	-0.01	-0.58	-0.38
Total Emissions	9.25	10.66	64.35	0.13	10.46	2.91
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source:

Fallbrook Meadows Residential Project Air Quality, Global Climate Change, and Energy Impact Analysis, Table 9, Gandini Group Inc., September 14, 2021.
CalEEMod Version 2020.4.0; the higher of either summer or winter emissions.

Notes:

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

(3) Mobile sources consist of emissions from vehicles and road dust.

Construction related impacts would be reduced by the appropriate dust control measures implemented during each phase of development, as required by SCAQMD Rule 403 - Fugitive Dust. The requirements for Rule 403 include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the lots, and maintaining effective cover over exposed areas. Engineering Department specific Conditions of Approval for any future development proposals would include provisions for Rule 403 that will apply during grading and building activities to minimize fugitive dust. Other SCAQMD rules would also apply, such as Rule 1113 for low VOC paints and materials. Operational impacts would be minimized by adherence to the Building Code and Title 24 requirements. Other SCAQMD rules, such as Rule 445 prohibiting the use of wood-burning fireplaces, would also apply and reduce operational impacts. As such, impacts would be less than significant.

d, e) The Project site is adjacent to residences and near to an elementary school (Calimesa Elementary School), which is considered to be sensitive receptor by the City's General Plan. During site improvement construction activities associated with future residential development, there may be some level of odor exposure resulting from asphalt paving and roadway improvements activities. However, the limited duration and area involved in paving activities would not result in significant levels of odors affecting a substantial number of people, as there are a relatively limited number of residences in the direct vicinity of the site. In addition, the operations of residential Projects do not include materials or uses that create substantial odors, and instead would introduce families near the site, allowing for their children to walk to school. As such, impacts would be less than significant.

4. **BIOLOGICAL RESOURCES**. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				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?				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?				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?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				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?				X

a-c, e, f) The Project site is located within an urbanized area of the City of Yucaipa. The Project site is not identified in Figure PR-5, Wildlife Corridors of the General Plan. A visual site investigation conducted by Staff confirmed that that the Project site has been disturbed by the existing residence and accessory structure, and does not feature any candidate, sensitive, or special status species; riparian habitat or other sensitive natural community; wetlands; and wildlife corridors. The properties also do not feature any Coastal Live Oak Trees, which are protected by the City of Yucaipa pursuant to Chapter 5 of Division 9 of the Yucaipa Development Code.

d) The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The state of California has incorporated the protection of birds of prey in California Fish and Game Code (CFGC) Sections 3800, 3513, and 3503.5. All raptors and their nests are protected from take or disturbance under the MBTA (16 United States Code [USC] Section 703 et seq.) and California statute (CFGC Section 3503.5).

The Project site contains trees and shrubs next to the residences that would be removed upon demolition of residences and thus could have a potential impact on nesting birds if present on the Project site at the time of demolition, grading and construction. Implementation of Mitigation Measure BIO-1, which requires a preconstruction nesting bird clearance survey to determine the presence/absence, location, and status of any active nests on or adjacent to the Project site, would reduce potential impacts to nesting and migratory birds to less than significant by limiting the removal of trees, shrubs, or any other potential nesting habitat to outside the avian nesting season, which generally extends from February 1 through August 31. If the nesting bird clearance survey indicates the presence of nesting birds, Mitigation Measure BIO-1 requires buffers to ensure that any nesting birds are protected pursuant to the MBTA. Impacts for both sensitive wildlife species and migratory birds would be less than significant with mitigation incorporated.

Mitigation Measures:

BIO-1 Prior to release of grading permits, the Applicant shall contract with a qualified biologist to conduct a preconstruction general nesting bird survey within all suitable nesting habitats that may be impacted by active construction during general avian breeding season (February 1 through August 31). The preconstruction surveys shall be conducted no more than 7 days prior to initiation of construction. If no active avian nests are identified within the proposed development Project area or within a 300-foot buffer of the proposed development Project area, no further mitigation is necessary. If active nests of avian species covered by the MBTA are detected within the proposed development Project area or within a 300-foot buffer of the proposed development Project area, construction shall be halted until the young have fledged, until a qualified biologist has determined the nest is inactive, or until appropriate mitigation measures that respond to the specific situation have been developed and implemented in consultation with the regulatory agencies. Based on the discretion of the qualified biologist, the 300-foot buffer may be expanded as appropriate to the species.

With adherence to Mitigation Measure BIO-1, the proposed Project would not conflict with any local policies or ordinances relating to biological resources, and no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved plans apply to the site. Therefore, the proposed Project would have no effect on biological resources.

5. **CULTURAL RESOURCES**. Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resources pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

a) The proposed GPA is located on four (4) parcels and contains four (4) residences that would be demolished and removed as part of the development. The four residences are located at the following addresses:

- 13644 Second Street
- 13662 Second Street
- 13682 Second Street
- 13649 Third Street

As described in the *Historical/Archaeological Resources Survey Report* (Appendix B), the three listed residences on Second Street and the single residence on Third Street have all been extensively altered on the exterior through various additions and replacements and therefore concluded in the Report as not being eligible for listing in the California Register of Historical Resources or the National Register of Historic Places (NRHP). As a result, no adverse change to the significance of a historical resource is expected to occur.

b) Figure PR-6 of the City's General Plan identifies that the subject site is not located within a Cultural Sensitivity Area. The proposed Project consists of a GPA to permit for high density multiple residential development on the subject parcels. Consultation with local tribes, pursuant to SB18 and AB 52, is required for the proposed Project, and additional details are included within the Tribal resources section of this MND.

In accordance with SB 18 requirements, the City sent a letter to the Native American Heritage Commission (NAHC) on January 10, 2022, in requesting for a list of all Native American Tribal Agency contacts in having a known cultural relational history with the Project area region.

In accordance with AB 52 requirements, the City sent invitation letters to representatives of the Native American contacts (provided by the NAHC on March 10, 2022) on April 12, 2022, formally inviting tribes to consult with the City on the GPA. The intent of the consultations is to provide an opportunity for interested Native American contacts to work together with the City during the Project planning process to identify and protect tribal cultural resources.

Response letters were received on May 11, 2022, from the Yuhaavatiam San Manuel Nation (YSMN), on May 16, 2022, from the Agua Caliente Band of Cahuilla Indians and on May 15, 2022 from the Morongo Band of Mission Indians in requesting consultation, which concluded on June 5, 2022. The letter from the Augustine band of Cahuilla Indians noted for the request for a copy of the Project Cultural Resources Report with copy of records search and copies of any cultural resource documentation available in relation to the Project. The letter from YSMN noted in requesting for conditions to be included pursuant to notifying the Tribe if historic-era resources are discovered and to be immediately followed up by preparation of a Monitoring and Treatment Plan to be created by the Project assigned archaeologist in coordination with YSMN and to provide an onsite monitor representing YWMN for the remainder of the Project development. The letter from the Morongo Band of Mission Indians noted for in the request of a copy of the Project Phase I Cultural Resources Report, mass grading maps (once available), a geotechnical report and shapefiles of the Project area of effect (APE).

As a result of the consultation efforts, Mitigation Measures CR-1, CR-2 have been developed for the Project and are included as part of the proposed Project's Condition of Approval. No resources were identified by the Historical/Archeological Resources Report that was prepared by CRM Tech. Incorporation of the mitigation measures will ensure a less than significant impact.

- **CR-1:** In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the Project outside of the buffered area may continue during this assessment period. Additionally, the Yuhaaviatam of San Manuel Nation Cultural Resources Department (YSMN) shall be contacted, as detailed within TCR-1, regarding any pre-contact and/or historic-era finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment.

- **CR-2:** If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to YSMN for review and comment, as detailed within TCR-1. The archaeologist shall monitor the remainder of the Project and implement the Plan accordingly.

c) There are no known human remains on the site. A review of historic aerial photos and maps at Netronline.com was conducted and did not identify possible cemeteries in the area, and therefore a low likelihood exists that human remains could be uncovered during ground-disturbing activities. However, there is always a possibility that unidentified human remains could be discovered during Project construction. Consistent with State law, if at any time during grading human remains are found, the Project is to be conditioned to halt work and contact made with the San Bernardino County Coroner's Office. Standard Conditions of Approval are included pertaining to State Health and Safety Code Section 7050.5. In addition, any discoveries of remains would also be assessed to determine if they are of Native American origin, which is further discussed within the tribal resources section of this MND. Measure TRI-4 is included to reduce impacts to a less than significant level.

- **TR-4:** Discovery of Human Remains. In the event that human remains (or remains that may be human) are discovered at the Project site during grading or earthmoving, the construction contractors, Project archaeologist, and/or designated Native American Monitor shall immediately stop all activities within 100 feet of the find. The Project proponent shall then inform the San Bernardino County Coroner and the City of Yucaipa Community Development Department immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If human remains are determined as those of Native American origin, the applicant shall comply with the state relating to the disposition of Native American burials that fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC Section 5097). The coroner shall contact the NAHC to determine the most likely descendant(s)(MLD). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The disposition of the remains shall be overseen by the MLD to determine the most appropriate means of treating the human remains and any associated grave artifacts.
- The specific locations of Native American burials and reburials will be proprietary and not disclosed to the general public. The locations will be documented by the consulting archaeologist in conjunction with the various stakeholders and a report of findings will be filed with the San Bernardino County Museum.
- According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052) determined in consultation between the Project proponent and the MLD. In the event that the Project proponent and the MLD are in disagreement regarding the disposition of the remains, State law will apply and the median and decision process will occur with the NAHC (see Public Resources Code Section 5097.98(e) and 5097.94(k)).

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?				X
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?		X		

a) This impact analysis focuses on the three sources of energy that are relevant to the proposed Project: electricity, natural gas, and transportation fuel for vehicle trips associated with Project operations as well as the fuel necessary for Project construction. The analysis of electricity/natural gas usage is based on the CalEEMod modeling within the Air Quality Study, which quantifies energy use for occupancy. The Project's estimated electricity and natural gas consumption is based primarily on CalEEMod's default settings for San Bernardino County, and consumption factors provided by Southern California Edison (SCE) and Southern California Gas Company, the electricity and natural gas provider for the Project site, respectively.

Project Construction Energy Consumption

During construction there would be a temporary consumption of energy resources required for the movement of equipment and materials. Compliance with local, state, and federal regulations would reduce short-term energy demand during the Project's construction to the extent feasible and Project construction would not result in a wasteful or inefficient use of energy. As summarized in the Table 15 of the Energy Impact Analysis (Appendix A), Project construction electrical usage would total approximately 67,491 kilowatt hours (kWh).

As shown in Tables 16 thru 19 of the Energy Impact Analysis, Project fuel consumption for construction equipment would amount to approximately 42,587 gallons of fuel, approximately 39,303 gallons for construction workers trips, approximately 18,057 gallons for construction vendors trips, and approximately 1,199 gallons for construction hauling trips. With respect to estimated vehicle miles traveled (VMT), the vendor and hauling trips would generate an estimated 128,563 VMT. Data regarding Project related construction worker trips were based on CalEEMod 2020.4.0 model defaults.

Construction equipment used over the approximately sixteen-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual Project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the Project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The Project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption

Project Operational Energy Consumption

Energy consumption in support of or related to Project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the Project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of Appendix A), it is assumed that an average trip for autos and light trucks was assumed to be 6.9 miles and 3- 4-axle trucks were assumed to travel an average of 16.6 miles. The Project includes the development of the site with residential uses; therefore, in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 20 of the Energy Analysis shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks would be estimated at approximately 171,045 gallons of fuel throughout the operation of the Project. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015. Therefore, the increase in fuel consumption from the proposed Project is insignificant in comparison to the State's demand. Therefore, Project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Electrical and Gas Consumption

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Southern California Edison) and natural gas (provided by Southern California Gas Company).

As shown in Table 21 of the Energy Analysis, the estimated electricity demand for the proposed Project is approximately 933,207 kWh per year[1]. In 2019, the residential sector of the County of San Bernardino consumed approximately 5,054

[1] Without the reduction of energy used by the existing residential uses that are to be removed.

million kWh of electricity. In addition, the estimated natural gas consumption for the proposed Project is approximately 3,159,560 kBTU per year[2]. In 2019, the residential sector of the County of San Bernardino consumed approximately 275million therms of gas. Therefore, the increase in both electricity and natural gas demand from the proposed Project is insignificant compared to the County's 2019 residential sector demand.

b) The proposed Project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the proposed Project will be required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by Southern California Edison and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual Project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources. However, the vehicles associated with the proposed Project would be required to comply with federal and state fuel efficiency standards.

Regarding the State's Renewable Energy Portfolio Standards, the Project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CALGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. Therefore, impacts in regard to the Project in conflicting with or obstructing a state or local plan for renewable energy would be less than significant.

7. **GEOLOGY AND SOILS**. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
(ii) Strong seismic ground shaking?			X	
(iii) Seismic-related ground failure, including liquefaction?			X	
(iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				

a) i-iv). The site does not lie within the boundaries of an Earthquake Fault Zone as defined by the State of California Alquist-Priolo Earthquake Fault Zoning Act. However, Southern California is a seismically active area. As such, seismic shaking may occur, and seismic ground shaking and ground rupture due to movement of a fault is a potential

[2] Without the reduction of natural gas used by the existing residential uses that are to be removed.

hazard in Yucaipa. The Project will be required to comply with the Yucaipa Municipal Code and the Building Code, which is designed to mitigate earthquake hazards. The Uniform Building Code (UBC) has identified groundwater within 50 feet of the surface as a potential problem for seismic-related ground failure, including liquefaction. According to the Yucaipa General Plan, ground water can vary within the City from depths lower than 300 feet below surface elevation to as close as 40 feet. Based upon information contained within the Yucaipa General Plan, Yucaipa Valley Water District, and the San Bernardino Municipal Valley Water District, the depth to ground water at the subject property and the surrounding Western Heights Sub-Basin is approximately 350 feet. Due to the depth of groundwater, the potential for liquefaction near the subject area is considered minimal. The Project site is also located on and surrounded by relatively flat land and is therefore not susceptible to seismically induced landslides.

b) The Project site is not traversed by any USGS identified drainage courses[3]. The Project would be required to prepare and implement all National Pollutant Discharge Elimination System (NPDES) permit requirements and appropriate BMPs (Best Management Practices) through a Storm Water Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP). These plans are a standard condition for Projects over one (1) acre in size and are intended to minimize soil erosion and prevent the off-site discharge of pollutants. Compliance with these provisions would ensure less than significant impacts for any future residential Project.

c) See above items 6 (a) and (b). Due to the depth of groundwater and relatively flat terrain of where the proposed use is to be located, the potential for liquefaction or landslide is minimal.

d) The area subject to the GPA is not identified as being within the City's Geologic Hazard Overlay as shown on General Plan Exhibit S-1, and is not expected to be susceptible to landslides and related phenomenon. The site is relatively flat, and is not located adjacent to any unstable areas, such as steep hillsides. As such, the proposed Project would not impact a geologic unit or soil that is unstable and would not cause such an area to become unstable as a result of the Project.

e) The property is located adjacent to an existing Yucaipa Valley Water District sewer line. Any future development would be conditioned to connect to the District's infrastructure, and the use of septic tanks would not be required.

f) Figure 5.5-1 (*Paleontological Sensitivity Map*) of the General Plan EIR identifies that the subject site is located within a Paleontological Resource Sensitivity Area. According to the General Plan EIR, any development that proposes grading to occur five feet below current elevation and in areas of moderate to high sensitivity or unknown paleontological sensitivity, to prepare a prepare a technical paleontological assessment by a qualified paleontologist in assessing/reporting the sensitivity of a Project site for buried paleontological resources to the City of Yucaipa prior to issuance of grading permits. Therefore, implementation of Mitigation Measure MM GEO 1 would ensure that that potential impacts to paleontological resources are reduced to less than significant.

Mitigation Measures:

GEO-1

Applicants for future development Projects in undeveloped and developed areas where grading is proposed five feet below current elevation and in areas of moderate to high sensitivity or unknown paleontological sensitivity to prepare a technical paleontological assessment prepared by a qualified paleontologist in assessing/reporting the sensitivity of a Project site for buried paleontological resources to the City of Yucaipa prior to issuance of grading permits. Fossils include large and small vertebrate and invertebrate fossils; the latter recovered by screen washing of bulk samples.

[3] US Fish and Wildlife Service National Wetlands Inventory Mapper, https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

If resources are known or reasonably anticipated, the assessment shall provide a detailed mitigation plan, including a monitoring program and recovery and/or in situ preservation plan, based on the recommendations of a qualified paleontologist. The mitigation plan shall include the following requirements:

- A paleontologist shall be retained for the Project and shall be on call during grading and other significant ground-disturbing activities.
- Should any potentially significant fossil resources be discovered, no further grading shall occur in the area of the discovery until the City concurs in writing that adequate provisions are in place to protect these resources.
- Unanticipated discoveries shall be evaluated for significance by a San Bernardino Certified Professional Paleontologist. If significance criteria are met, then the Project shall be required to collect and catalogue the fossils per San Bernardino County Museum guidelines and adequately curate fossils in an institution with appropriate staff and facilities for their scientific information potential to be preserved. A report of findings with an itemized accession inventory shall be prepared as evidence that monitoring has been successfully completed and shall be submitted and approved prior to the granting of occupancy permits.

8. **GREENHOUSE GAS EMISSIONS.** Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		X		

a) 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.

To determine whether if the Project's GHG emissions are significant, the Global Climate Change Analysis (Appendix A) utilized the SCAQMD draft screening threshold of 3,000 $MTCO_2e$ per year for all land uses. CalEEMod Version 2020.4.0 was used to calculate the GHG emissions from the proposed Project. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed Project. The vehicle trips associated with the proposed Project have been analyzed by inputting the Project-generated vehicular trips from the TIA into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed Project as well as the GHG emissions from the waste once it is interred into a landfill. AB 341 requires that 75 percent of waste be diverted from landfills by 2020, reductions for this are shown in the mitigated CalEEMod output values. No other changes were made to the default waste parameters, including any improvements that would occur through implementation of AB 1826 that governs the recycling of organic waste to further reduce GHG emissions.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to the default water usage parameters.

Construction

The construction related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction related GHG emissions were calculated by CalEEMod.

The GHG emissions were calculated based on the above-described parameters. The following table summarizes the Project's total emissions (without credit for any reductions from sustainable design and/or regulatory requirements or removal of existing uses) to be at 2,294.72 MTCO2e per year. Furthermore, with incorporation of the reduction from removal of the existing four (4) residential uses, the proposed Project's emissions would be lowered to 2,231.27 MTCO2e per year. According to the thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed Project would exceed the SCAQMD draft threshold of 3,000 MTCO2e per year for all land uses. Therefore, operation of the Project would not create a significant cumulative impact to global climate change. No mitigation is required.

Project -Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	**NonBio-CO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[1]	0.00	46.60	46.60	0.00	0.00	46.94
Energy Usage[2]	0.00	334.11	334.11	0.02	0.00	335.97
Mobile Sources[3]	0.00	1,730.62	1,730.62	0.10	0.09	1,759.15
Waste[4]	23.49	0.00	23.49	1.39	0.00	58.19
Water[5]	4.21	47.14	51.35	0.44	0.01	65.46
Construction[6]	0.00	28.59	28.59	0.00	0.00	29.01
Subtotal Emissions	27.70	2,187.07	2,214.77	1.95	0.10	**2,294.72**

-existing residential uses to be removed	-1.42	-59.51	-60.94	-0.07	0.00	-63.45
Total Emissions	26.28	2,127.56	2,153.83	1.88	0.10	**2,231.27**
SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**No**

Source:
Fallbrook Meadows Residential Project Air Quality, Global Climate Change, and Energy Impact Analysis, Table 11, Gandini Group Inc., September 14, 2021.
CalEEMod Version 2020.4.0 for Opening Year 2023.

Notes:

(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
(2) Energy usage consist of GHG emissions from electricity and natural gas usage.
(3) Mobile sources consist of GHG emissions from vehicles.
(4) Solid waste includes the CO2 and CH4 emissions created from the solid waste placed in landfills.
(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
(6) Construction GHG emissions CO2e based on a 30-year amortization rate.

b) The proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The City adopted the *City of Yucaipa Climate Action Plan* (CAP) in September 2015. The CAP presents the greenhouse gas (GHG) inventories, identifies the effectiveness of California initiatives to reduce GHG emissions, and identifies local measures that were selected by the City to reduce GHG emissions under the City's jurisdictional control to achieve the City's identified GHG reduction target. The City of Yucaipa participated in the *San Bernardino County Regional Greenhouse Gas Reduction Plan* which presents the collective results of all local efforts to reduce GHG emissions consistent with statewide GHG targets expressed in Assembly Bill (AB) 32, the "Global Warming Solutions Act of 2006" and Senate Bill (SB) 375. The City has selected a goal to reduce their community GHG emissions by 15% below 2008 baseline levels by the year 2020.

Because the City's CAP thresholds are currently based on the year 2020, and that the proposed Project is to be operational in 2023, a comparison analysis was required to determine consistency between the City's CAP as well as the as well as the CARB Scoping Plan. The procedures for evaluating GHG impacts and determining significance for CEQA purposes are streamlined by (1) applying an emissions level that is determined to be less than significant for small Projects, and (2) utilizing Screening Tables to mitigate Project GHG emissions that exceed the threshold level. That CAP states that a threshold level of 3,000 MTCO2e per year will be used to identify Projects that require the use of Screening Tables or a Project-specific technical analysis to quantify and mitigate Project emissions.

At a net level of 2,231.27 MTCO2e per year, the Project's GHG emissions do not exceed the SCAQMD threshold 3,000 MTCO2e per year for all land uses and would be in compliance with the reduction goals of the City's CAP, CARB Scoping Plan, AB-32, SB-32 and, does not need to accrue points through the CAP's Screening Tables. Furthermore, the Project will comply with applicable Green Building Standards and City of Yucaipa's policies regarding sustainability (as dictated by the City's General Plan). Therefore, impacts are less than significant.

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?			X	
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?				X

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				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?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

a-d) The GPA would permit residential development consistent with the proposed RM-24 land use designation, and allow for multiple-family uses. It is not anticipated that a residential Project would directly involve the routine transport of hazardous materials; however, equipment used at the site during construction activities could utilize substances considered by regulatory bodies as hazardous, such as diesel fuel and gasoline from typical construction equipment, and would therefore have the potential to discharge hazardous materials during construction. These types of materials are not acutely hazardous, and all storage, handling, use, and disposal of these materials are regulated by federal and state requirements, for which the Project construction activities would be required to strictly adhere to. These regulations include: the federal Occupational Safety and Health Act and Hazardous Materials Transportation Act; Title 8 of the California Code of Regulations (CalOSHA), and the state Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The amount of hazardous material discharge during construction is expected to be less than significant, and the Project would be required to comply with applicable laws, ordinances and procedures. Through compliance with the aforementioned laws and requirements, and also through the implementation of a SWPPP and the WQMP requirements to prevent the off-site discharge of pollutants during construction and operation of the Project, impacts would be less than significant

During operation of the Project, potential hazardous materials would be limited to routine elements associated with residential development, including the use of yard fertilizers, house cleaners and solvents, and chlorine for the swimming pool amenity, which would not represent a significant hazard. Further, no hazardous materials will be transported to or from the site during Project construction or operation. The site is also not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Because the Project site contains four (4) residences that have existed for more than 45 years, an asbestos containing material (ACM) and lead-based paint (LBP) survey will be required as a condition of approval and required to be conducted prior to the issuance of a demolition permit to assess each resident structure for the presence of ACMs and LBPs. If survey results indicate the presence of these hazardous materials, an ACM and/or LBP removal plan will be required to address the standard protocol for the removal and remediation of materials by a licensed contractor certified by CalOSHA, prior to or during demolition. Any ACM/LBP materials will then be required to be disposed of at a licensed and regulated facility that accepts ACM and LBP waste materials, consistent with existing regulations.

e) The Project site is not within two miles of a public or private airport. The nearest airport is Redlands Municipal Airport (REI), which is located over 7.5 miles northwest from the Project site. In addition, the Project is not within the Redlands Airport Land Use Compatibility Plan. No impacts would occur with the Project.

f) The proposed GPA would impact four parcels located between 3rd Street to the west, and 2nd Street to the east, at approximately 375 feet north of County Line Road. The subject site is currently designated for multiple residential uses, and that upon facilitation of the GPA, development of the proposed high density multiple residential use would not impact access to users traveling along the public right-of-way. Further, Figure S-5 of the Yucaipa General Plan does not designate 2nd Street and 3rd Street as a primary evacuation route; only County Line Road approximately 375 feet to the south is designated as a Local Evacuation Route. As such, the proposed Project will not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

g) The Project site is within an urbanized area and adjacent to existing residential development. The Project site is not within a special Fire Safety Review Area according to the City General Plan, nor adjacent to wildland areas. However, risks to future development from fire hazards are addressed through adherence to the City's Standard Conditions of Approval as required by the City Fire Department, which includes provisions for adequate fire access that are addressed through the Project's internal circulation design, sprinkler water systems within habitable living spaces, and the placement of new fire hydrants at applicable intervals that meet the water flow requirements of the Fire Code.

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?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) 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:			X	
(i) result in a substantial erosion or siltation on- or off-site;			X	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

c) Wastewater treatment for the Project area is provided by Yucaipa Valley Water District (YVWD), and the Project would be required to connect to the YVWD sewer collection and treatment system as a standard condition of approval. Prior to issuance of building permits, the Project would also be required to comply with all applicable National Discharge Pollutant Elimination System (NPDES) requirements through adoption and implementation of a SWPPP and WQMP during the construction and operational phases. The structural and nonstructural BMPs and other measures included in the SWPPP and WQMP would address water quality and waste discharge concerns associated the Project, and along with the sewer connection, a less than significant impact is anticipated.

b) The proposed Project site receives potable water service that is provided by the South Mesa Water Company. No hazardous materials or other materials will be injected into groundwater supplies and no wells are proposed for the Project which would have the potential to draw from the groundwater table. Impacts would be less than significant.

c (i thru iv), e). The Project site is not located within a drainage course, nor a designated floodway and or 100- and 500-year floodplain, and no defined blue line stream is depicted on the Yucaipa, CA U.S.G.S. Map for the Project area. The Project site is relatively flat, gently sloping upward from west to east, and does not feature any significant drainage features. Onsite runoff upon completion of the Project will be conveyed downslope from east to west via curb and gutter to where runoff will be discharged into an onsite, 7,000 square foot retention basin designed to accommodate 100-year storm events.

In compliance with stormwater discharges, the Project will be conditioned by the City to apply to the State Water Resources Control Board (SWRCB) for coverage under the Construction General Permit (Order No. 99-08-DWQ) (CAS000002), which applies to all stormwater discharges from Projects where clearing, grading, and excavation result in soil disturbance of at least one acre or more. The Project's area of disturbance encompasses approximately 8.39-acres. The Construction General Permit requires an applicant to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), which would include a list of best management practices (BMPs) that would be implemented to prevent soil erosion and to contain the potential for discharge of construction-related pollutants that could contaminate nearby water resources. The SWPPP may include, but not be limited to, the following BMPs:

- Temporary Soil Stabilization: sandbag barriers, straw bale barriers, sediment traps, and fiber rolls;
- Temporary Sediment Control: hydraulic mulch and geotextiles;
- Wind Erosion Control: water of the construction site, straw mulch;
- Tracking Control: staging/storage area and street sweeping;
- Non-Stormwater Management: clear water diversion and dewatering; and,
- Waste Management and Materials Pollution Control: vehicle and equipment cleaning, concrete waste management, and contaminated soil management.

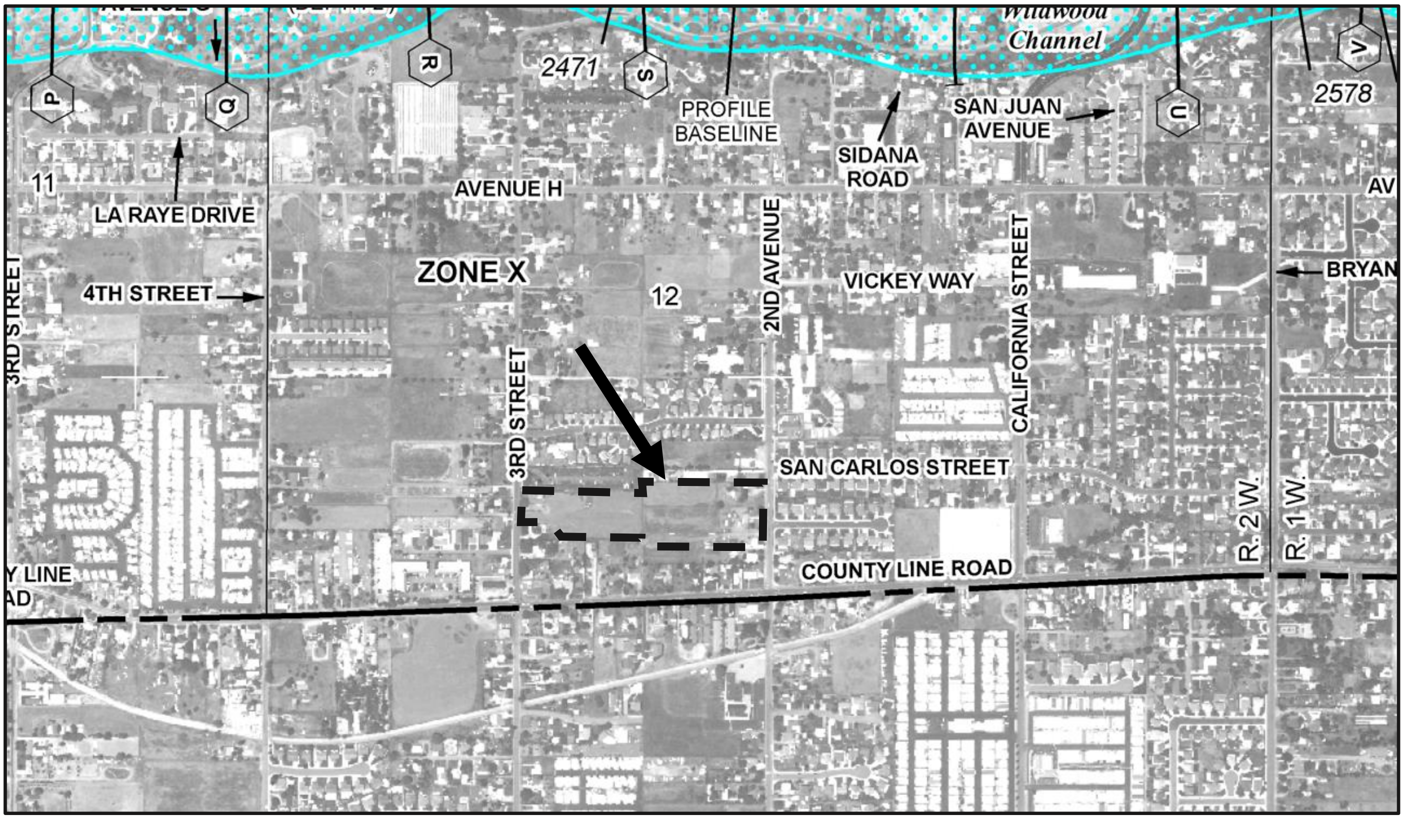
The Project will also be conditioned to prepare and implement a WQMP that would include BMPs to be implemented during post construction operations in order to ensure compliance with RWQCB water quality standards. Examples of WQMP BMP protocol applicable to the Project would include the following:

- Education for Property Owners, Operators, Tenants, Occupants, or Employees;
- Activity Restrictions;
- Irrigation System and Landscape Maintenance;
- Street Sweeping Private Streets and Parking Lots;
- Drainage Facility Inspection and Maintenance; and,
- Spill Prevention Control and Countermeasure Plan (SPCC)

The WQMP will be an active plan to be implemented throughout the life of Project and will require routine inspections by a qualified water quality specialist to assure compliance with the Santa Ana RWQCB. This will assure that the Project's impact with regard to violating any water quality standards will be reduced to less than significant.

d) The proposed Project site is not within a 100-year flood plain, based upon a review of the latest FEMA Flood Insurance Rate Map (FIRM) Map, 06071C8745H, revised August 28, 2008. As such, and upon facilitation of the proposed GPA, no future structures built under the High Density Multiple Residential land use designation for the Project site would be placed within a 100-year flood plain, nor would new structures impede or redirect flood flow.

Figure 4 FEMA Flood Map



Source:
Department of Homeland Security, FEMA Flood Map Service Center. https://msc.fema.gov/portal/home

As shown in Figure 4 above, the proposed Project would not be located within the boundaries of the 100- and 500-year flood plain. No upstream levee or dam would affect the Project site.

Based on review of the 2016 General Plan and recent aerial photo maps, the proposed Project is not subject to the potential effects of a seiche, tsunami, or mudflows caused by such due to lack of upstream water bodies. The City of Yucaipa is located just east of the I-10 freeway and is over 55 miles east of the Pacific Ocean with an average elevation of 2,400 feet above sea level. As such, the City is not under threat of a tsunami, otherwise known as a seismic sea wave. Similarly, the potential for a seiche to occur is remote, given the limited number of large water bodies within Yucaipa and its sphere of influence. Therefore, no impact is expected.

11. **LAND USE AND PLANNING**. Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

a) Dividing an established community typically involves creating a physical barrier that changes the connectivity between areas of the community. The Project site is located on four subject parcels containing four (4) existing residential homes with graded undeveloped land toward the rear of each lot. Currently, the existing RM-10M Land Use Designation either permits for the subject parcels containing single-family residence to remain, or to be demolished and removed followed by development of multiple family residences through the approval of a planning entitlement. The proposed GPA, with the four (4) parcels merged, would meet the minimum district size of 5 acres to change the land use designation of the property from RM-10M to High Density Multiple Residential (RM-24). The development of the four parcels with either single-family or multiple-family use development would not bisect any portion of the surrounding residential land designations with a non-residential land use designation (i.e., commercial, industrial), and would be completely contained within the Project area parcels. As such, no new structures that could be developed under the proposed GPA would have the potential to physically divide a community, and the Project does not propose any other action that would physically divide an established community.

b) The proposed GPA would change the City's General Plan/Land Use Map to allow for High Density Multiple Residential (RM-24) development as opposed to the current designation allowing for Multiple Residential (RM-10M) development. The proposed General Plan Amendment and Land Use Compliance Review (LUCR) is to allow for the development of a high density multiple-residential Project consisting of 200 apartment dwelling units on four (4) subject parcels, which would be merged under a Lot Merger application. Improvements to the Project site are required to occur consistent with adopted development standards and good planning practices. Grading and building improvements would be undertaken consistent with appropriate City standards and drainage design criteria. No policies or plans exist for avoiding or mitigating an environmental effect that have not been taken into consideration.

12. **MINERAL RESOURCES.** Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				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?				X

a-b) The City General Plan indicates the entire City is within an MRZ-3 (Mineral Resource Zone 3) classification, in which the significance of mineral deposit cannot be evaluated. No mining activities currently occur in the area, and no significant mineral resources are known to exist within the City of Yucaipa. Due to the size of the Project site and proximity to residential uses, the site is unlikely to be considered a viable site for mineral extraction.

13. **NOISE.** 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?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?		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?				X

a-b) The Project site is adjacent to residential land uses, which are considered noise sensitive land uses in the City General Plan. The General Plan and Municipal Code identify noise levels for various types of land uses, certain activities, and how noise levels are to be measured.

<u>Project Construction Noise:</u> Construction noise sources are regulated within the City of Yucaipa Municipal Code Section 87.0905(b) which limits construction activities to between the hours of 7:00 AM and 7:00 PM weekdays and Saturdays with no construction allowed on Sundays or Federal holidays. The City of Yucaipa does not include a numerical noise standard associated with construction noise.

A comparison of existing noise levels and existing plus Project construction noise levels from Table 7 of the Noise Impact Analysis (Appendix C) are presented below. Several monitoring sites were identified to assess the Project:

NM1 was chosen to represent noise levels at the property lines of the multi-family residential receptors to the north and the multi-family and single-family residential receptors to the west, NM2 was chosen to represent noise levels at the property lines of the single-family residential receptors to the south, NM3 was chosen to represent noise levels at the property lines of the single-family residential uses to the east, and NM4 was chosen to represent noise levels at the property lines of the single-family and church uses to the north and the school use to the northeast of the Project site. As shown in Table 7, modeled unmitigated construction noise levels ranged between 51.1 and 80.2 dBA Leq at the closest sensitive receptor property lines to the Project site.

Project impacts related to construction noise will be minimized with adherence to Municipal Code Section 87.0905(b) and implementation of Mitigation Measures NOI-1 through NOI-7.

Groundborne vibration and noise: There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, a vibratory roller could generate up to 0.21 Peak Particle Velocity (PPV) at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. Table 5 of the Noise Impact Analysis identifies a PPV level of 0.25 as the threshold at which there is a risk to “architectural” damage to historic and some old buildings.

Structures associated with the single-family residential use to the north are located between approximately four and 17 feet from the northern Project property line. At 4 feet, use of a vibratory roller would be expected to generate a PPV of 3.281 in/sec and a bulldozer would be expected to generate a PPV of 1.391 in/sec. Use of a vibratory roller or large bulldozer could be considered as an annoyance to the single-family receptor to the north; therefore, Mitigation Measure NOI-8 will be required.

At 7 feet, which is the distance to the next closest off-site building, the multi-family residential dwelling units to the north, use of a vibratory roller would be expected to generate a PPV of 1.471 in/sec and a bulldozer would be expected to generate a PPV of 0.601 in/sec. Use of a vibratory roller or large bulldozer could be considered as an annoyance to the multi-family receptors to the north; therefore, Mitigation Measure NOI-8 will be required.

Structures associated with the single-family residential uses to the south are located as close as approximately 13 feet from the southern Project property line. At 13 feet, use of a vibratory roller would be expected to generate a PPV of 0.56 in/sec and a bulldozer would be expected to generate a PPV of 0.237 in/sec. Therefore, use of a vibratory roller could be considered as an annoyance to the single-family receptors to the south; therefore, Mitigation Measure NOI-8 will be required.

Annoyance is expected to be short-term, occurring only during site grading and preparation. Implementation of Mitigation Measure NOI-8 would reduce potential impacts related to an annoyance that is related to vibration impacts to a level that is less than significant.

Project Operational Noise (permanent): On-site operational noise is usually only evaluated for commercial and industrial Projects. Quantitative analysis of on-site operational noise is typically not conducted for residential Projects as they usually do not include stationary noise sources that could result in substantial increases in ambient noise levels resulting in violation of established standards. Therefore, the evaluation of Project operational noise in this study is limited to the potential impacts associated with Project generated vehicular traffic (off-site noise). Depending upon how many units are proposed and the existing noise environment, Project generated vehicle trips could result in substantial increases in noise levels. Based on previous noise studies prepared for Projects located in the City, Project generated vehicle traffic is considered significant if Project-related traffic increases noise levels at nearby sensitive receptors by 5 dB.

The City of Yucaipa General Plan identifies exterior noise levels up to 60 dBA CNEL and interior noise levels of up to 45 dBA CNEL as the standard for multi-family residential uses. The Project site is bounded by 2nd street to the east, 3rd street to the west, and is approximately 375 feet north of County Line Road to the south. The City of Yucaipa General Plan Transportation Element identifies County Line Road, in the vicinity of the Project site, as a Secondary Highway (Arterial) (80-foot right-of-way) roadway and 2nd Street and 3rd Street as local roadways. As local roadways, 2nd Street and 3rd Street will not generate enough vehicle traffic to be acoustically significant.

Figure S-6 of the Public Safety Element of the City of Yucaipa General Plan provides noise contours for modeled future traffic volumes for County Line Road and demonstrates that the proposed Project will not be exposed to noise levels that exceed the City's 60 dBA CNEL exterior noise standard for the proposed Project (High Density Multiple Residential). In addition, typical new construction provides at least 20 dB of exterior to interior noise reduction with a closed-window condition. The Project would also not exceed the City's 45 dBA CNEL interior noise standard. Therefore, impacts are considered less than significant.

c) The Project site is not within two miles of an airport of any type. The nearest airport is Redlands Municipal Airport (REI), which is located 7.5 miles northwest from the Project site. In addition, the Project is not within the Redlands Airport Land Use Compatibility Plan. No impacts would occur with development of the Project.

<u>Construction Noise Mitigation Measures</u>

NOI-1 During all Project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

NOI-2 The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the Project site.

NOI-3 Equipment shall be shut off and not left to idle when not in use.

NOI-4 The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the Project site during all Project construction.

NOI-5 Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

NOI-6 The Project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the Project site during construction.

NOI-7 The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

<u>Vibration Mitigation Measures</u>

NOI-8 The use of vibratory rollers, or other similar vibratory equipment, is to be prohibited within 23 feet, and large bulldozers within 13 feet, of any residential structure to the north and/or south of the Project site.

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)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

a) The proposed Project site is located within an area generally developed with single family residences and vacant parcels. The Project includes the development of a net total of 200 dwelling units, or a population increase of approximately 564 people based upon the average Yucaipa household size 2.82 persons per household (Year 2021) as identified by the California Department of Finance (Table E-5). This increase represents a nominal difference in the City's expected build-out population of over 79,000 people and would result in attainable housing that will help the City meet its Regional Housing Needs Assessment requirements for the 6th Housing Cycle. In addition, existing infrastructure (sewer, water, electrical, gas) on 2nd Street and 3rd Street is adequate to accommodate the proposed Project and GPA. As such, impacts are expected to be less than significant.

b) There are three existing residences and one vacant residence located on the Project site. This Project would only create a temporary displacement of the three residences and would not require the construction of replacement housing as new dwelling units (200- units) would be constructed onsite.

15. **PUBLIC SERVICES**. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: :				
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

a) The City of Yucaipa is currently served by the California Department of Forestry (CAL FIRE). The Project site is accessible from an existing improved street and new on-site streets will be designed consistent with existing City Engineering and Fire Department standards, and would not require unique or altered fire protection services. As a standard condition of approval, developers are required to pay development impact fees for fire facilities that are assessed from the details of proposed Project. The proposed Project would have a less than significant impact on fire protection services, and would not affect fire department service ratios or response times, nor would it require the construction of any new fire facilities.

b) The San Bernardino County Sheriff's Department currently serves the Project site and surrounding area. As a standard condition of approval, the Project would be required to pay development impact fees for Public facilities based upon the size of the Project site. The proposed Project would not require unique police protection services, since the site has been and will continue to be accessible from 2nd Street and 3rd Street and that payment of development impact fees would off-set potential demands for increased facilities.

c) The Yucaipa-Calimesa School District would serve future development in the area. As a standard condition of approval, developers are required to pay development impact fees to the District for school facilities, prior to issuance of building permits. Under State law, impacts to school facilities are addressed by the State of California through specific procedures, such as development impact fees and the issuance of bonds.

d) The proposed Project will involve new residential development and, therefore, potentially increase the number of potential park users or affect existing park facilities. The City of Yucaipa has adopted development impact fees to off-set the potential impact of new users caused by new development. Any future residences will be required to pay these development impact fees. In addition, and as shown in Figure 3, *Site Plan Exhibit*, the proposed Project would provide recreation amenities including a tot lot, picnic tables under covered canopy, open space with jogging path, swimming pool and spa, and a club house to serve the residents of the development.

e) The proposed Project would not require new or altered public facilities or services. The City requires future development to pay development impact fees for a variety of public facilities, including drainage improvements, traffic, and civic center facilities. In addition, the Project will complete street improvements and onsite drainage improvements to meet state and local requirements, and impacts have been addressed as part of this MND. Other necessary improvements, such as water and sewer facilities, would be provided by other agencies that have the ability to require necessary facilities to be installed by the developer and/or require payment of fees to provide for that service.

16. **RECREATION.**				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment				X

a-b) See response to 15d. The Project includes open space and recreation facilities as part of the development, which is provided for use by the residents. The property owner of the apartment complex would assume maintenance responsibilities for the proposed recreation facilities as an ongoing condition of approval.

17. **TRANSPORTATION/TRAFFIC.** Would the Project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			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)?				X
d) Result in inadequate emergency access?			X	

a, b) The proposed GPA would change the land use designation from Multiple Residential (RMS-10M) to High Density Multiple Residential (RM-24). As a result, a high-density multiple family residential use (up to a density of 24 units per acre) could permit up to 201 units with facilitation of the proposed GPA. For comparison, the existing land use designation would permit 8.7 dwelling units per acre as a typical multiple family Project that would result in a total of 73 multiple family homes for the entire size of the subject parcels combined (8.39 acres), not including any Density Bonus Agreements or Accessory Dwelling Units, should the GPA not be approved. This GPA for the RM-24 designation would therefore result in a net increase of 128 dwelling units from the existing requirements. To assess potential traffic-related impacts, the applicant for the proposed Project commissioned a Traffic Impact Analysis (Appendix D) to address the change of use on their four (4) subject parcels. The Traffic Impact Analysis, prepared on September 9, 2021, by Ganddini Group Inc, documents the existing traffic conditions and the number of trips that would be added by development of Project. The analysis found that the proposed Project would result in approximately 1,426 daily trips, including 89 trips during the AM peak hour and 108 trips during the PM peak hour. Based upon the information provided by the Traffic Impact Analysis and the recommended Project design improvements (one shared left/right turn lane and stop control) for both driveway approaches off of 2nd Street and 3rd Street, the addition of these trips generated by the Project would not result in a reduced level of service to the existing transportation system, and therefore represents a nominal and insignificant change to the number of trips within the City.

VMT Screening

A Vehicle Miles Traveled (VMT) Analysis (November 12, 2021) was prepared to analyze the amount of vehicle miles generated as a result of the Project (Appendix D-2). In utilizing the San Bernardino County Transit Authority (SBCTA) VMT Screening Tool, the analysis obtained a baseline year (2021) VMT per population for the Project Traffic Area Zone (TAZ) equal to 29.7 vehicle miles traveled and a City established a threshold equal to 30.7 vehicle miles traveled. Therefore, the proposed Project is below the City baseline by approximately 3.29 percent without implementation of any Project design features or mitigation measures that would reduce the Project's baseline VMT. Therefore, the Project satisfies the low VMT screening criteria.

c)The Project would not result in the modification of existing adjacent roadways in such way that would increase hazards to the roadway's geometric design. As shown in Figure 3, the Project will provide one ingress/egress driveway on 2nd Street, one ingress/egress driveway on 3rd Street and one egress only driveway on 2nd Street. The Project also proposes the widening of 2nd Street and 3rd Street to serve for vehicles approaching and leaving the Project, and installation of Project right-of-way pedestrian sidewalks abutting these streets consistent with the City's General Plan and street design standards. Engineering development standards would be incorporated into the design of these improvements to include traffic signage and stop controlled signage to ensure the safety of pedestrian and automobile traffic entering and leaving the Project. To ensure incorporation of safety improvements these roadways, the Project will be conditioned to pay Development Impact Fees for traffic to fund the aforementioned improvements to 2nd Street and 3rd Street and for future improvements to the localized area. These fees are the City's equivalent of the "fair share" contribution to a local fund to upgrade the area's transportation infrastructure.

d) The proposed Project is located adjacent to existing paved streets (2nd Street and 3rd Street). Onsite driveways and parking would be designed to be consistent with the City's Engineering and Fire Department standards, and include adequate driveway widths, and adequate ingress and egress width for fire and first responder vehicles.

18. **TRIBAL RESOURCES.** Would the Project:				
a) 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:				
(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), or				X
(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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

a) The Project site features four (4) existing single-family residences that would be demolished and removed as part of the development. The four residences are located at the following addresses:

- 13644 Second Street
- 13662 Second Street
- 13682 Second Street
- 13649 Third Street

As described in the Historical/Archaeological Resources Survey Report (Appendix B), the three listed residences on Second Street and the single residence on Third Street have all been extensively altered on the exterior through various additions and replacements and therefore concluded in the Report as not being eligible for listing in the California Register of Historical Resources or the National Register of Historic Places (NRHP). As a result, no adverse change to the significance of a historical resource is expected to occur.

b) Conducting consultation early in the CEQA process allows tribal governments, public lead agencies, and Project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process.
In accordance with SB 18 requirements, the City sent a letter to the Native American Heritage Commission (NAHC) on January 10, 2022, in requesting for a list of all Native American Tribal Agency contacts in having a known cultural relational history with the Project area region.

In accordance with AB 52 requirements, the City sent invitation letters to representatives of the Native American contacts (provided by the NAHC on March 10, 2022) on April 12, 2022, formally inviting tribes to consult with the City on the GPA. The intent of the consultations is to provide an opportunity for interested Native American contacts to work together with the City during the Project planning process to identify and protect tribal cultural resources.

Response letters were received on May 11, 2022, from the Yuhaavatiam San Manuel Nation (YSMN), on May 16, 2022, from the Agua Caliente Band of Cahuilla Indians and on May 15, 2022 from the Morongo Band of Mission Indians in requesting consultation, which concluded on June 5, 2022. The letter from the Augustine band of Cahuilla Indians noted for the request for a copy of the Project Cultural Resources Report with copy of records search and copies of any cultural resource documentation available in relation to the Project. The letter from YSMN noted in requesting for conditions to be included pursuant to notifying the Tribe if historic-era resources are discovered and to be immediately followed up by preparation of a Monitoring and Treatment Plan to be created by the Project assigned archaeologist in coordination with YSMN and to provide an onsite monitor representing YWMN for the remainder of the Project development. The letter from the Morongo Band of Mission Indians noted for in the request of a copy of the Project Phase I Cultural Resources Report, mass grading maps (once available), a geotechnical report and shapefiles of the Project area of effect (APE).

Archaeological research in the area indicates the Project area appears to have been inhabited by the Mountain Serrano, but is also within the boundaries of traditional Cahuilla territory, which lies within the geographic center of Southern California and the Cocopa-Maricopa Trail, a major prehistoric trade route that linked the Colorado Desert with the Pacific Coast. Further, the name “Yucaipa” is a form of the Serrano word, “Yucaipat.” Given the territory’s close proximity to the Cocopa-Maricopa Trail, interactions with surrounding tribes were extensive. As such, future development could uncover such remnants from this history. In addition, the Yuhaavatiam San Manuel Nation identified that resources have been previously discovered within the vicinity of the site, and that there may be a possibility that resources could be uncovered. Due to the sensitivity of the site and the possibility of discovery during ground movement activities, measures have been developed with the tribes to ensure that potential impacts remain less than significant.

To address and mitigate potential impacts to this resource, future development would address the potential discoveries that could occur during land disturbing activities. Based upon the consultation process, the mitigation measures are as follows:

- **TRI-1:** Prior to grading permit issuance, if there are any changes to Project site design and/or proposed grades, the future developer shall contact the Yuhaaviatam of San Manuel Nation (YSMN) to provide an electronic copy of the revised plans for review. Additional consultation shall occur between the City, developer and Consulting Tribes to discuss the proposed changes and to review any new impacts and/or potential avoidance/preservation of the cultural resources on the Project. The developer shall make all attempts to avoid and/or preserve in place as many as possible of the cultural resources located on the Project site. In specific circumstances where existing and/or new resources are determined to be unavoidable and/or unable to be preserved in place despite all feasible alternatives, the developer shall make every effort to relocate the resource to a nearby open space or designated location on the property that is not subject to future development, erosion or flooding.

- **TRI-2:** Archaeological Monitoring/Testing. Due to the possibility of present archaeological materials within the Project site, as detailed by the Consulting Tribe, one of the following shall occur:

  - Archaeological testing shall be conducted prior to any and all ground-disturbing activity. The testing plan shall be approved by the Consulting Tribes and should be created upon review of available geological information, such as a geotechnical study, USGS geology maps, and USDS soil maps. Testing shall be implemented in-field by at least one Secretary of Interior Standards qualified archaeologist with at least 3 years of regional experience in archaeology and at least one Tribal representative from the Consulting Tribes. Any findings during testing shall be properly recorded on-site and reburied within the original find location (no collection shall be permitted). A testing report shall be completed, to include recordation documents (if any finds occur) and be provided to the Lead Agency for dissemination to the Consulting Tribes. The Lead Agency shall, in good faith, consult with the Consulting Tribes concerning the results of the testing plan and, if positive, work toward avoidance of the resources, if feasible, as well as implement the monitoring process, by way of an Archaeological Monitoring Plan. Should no findings occur during Tribal-approved testing, monitoring shall not occur on-site and the Consulting Tribes will be notified of any inadvertent discoveries.

    OR

  - At least 30-days prior to application for a grading permit and before any ground disturbing activities on the site take place, which includes but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, excavation, trenching, compaction, fence/gate removal and installation, drainage, irrigation removal and installation, hardscape installation [benches, signage, boulders, walls, seat walls, fountains, etc.], etc., the future developer shall retain a Secretary of Interior Standards qualified archaeologist with at least 3 years of regional experience and Tribal monitors representing the Consulting Tribes shall monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources. A sufficient number of archaeological and Tribal monitors shall be present each work day to ensure that simultaneously occurring ground disturbing activities receive thorough levels of monitoring coverage. Prior to the issuance of a grading permit, the applicant shall provide the City of Yucaipa evidence of monitors that meet the requirements of the YSMN.

  Should monitoring occur, the archaeologist, in consultation with Consulting Tribes, the developer, and the City of Yucaipa, shall develop an Archaeological Monitoring Plan (AMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the Project site. Details in the AMP shall include:

  - Project-related ground disturbance (including, but not limited to, brush clearing, grading, trenching, etc.) and development scheduling;

- The development of a rotating or simultaneous schedule in coordination with the developer 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 (if the tribes cannot come to a consensus on the rotating or simultaneous schedule of tribal monitoring, the Lead Agency shall designate the schedule for the onsite Native American Tribal Monitor for the proposed Project);

- The protocols and stipulations that the developer, City, Consulting 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 resources evaluation.

- **TRI-3**: Treatment and Disposition of Cultural Resources. In the event that Native American cultural resources are inadvertently discovered during the course of any ground disturbing activities, including but not limited to brush clearance, grading, trenching, archaeological testing, etc., for the proposed Project, the following procedures will be carried out for treatment and disposition of the discoveries:

  - Avoidance and Preservation in Place: Avoidance and preservation in place shall be the preferred treatment for any and all discoveries of archaeological materials. Should the resource not be a candidate for avoidance or preservation in place, a resource-specific mitigation plan shall be developed, reviewed by all Parties, and implemented following the guidelines listed below:

  - Temporary Curation and Storage for Removed Resources: For resources that cannot be left in place, they shall be temporarily curated in a secure location onsite at an agreed to location that is secure and accessed only by a limited number of on-site supervisors, specified Tribal monitors, and the archaeologist. The removal of any artifacts from the Project site will need to be thoroughly inventoried with tribal monitor oversite of the process; and

  - Treatment and Final Disposition of Removed Resources: For resources that cannot be left in place, the landowner(s) 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. The applicant shall relinquish the artifacts through one or more of the following methods and provide the City of Yucaipa with evidence of same:

    - Accommodate the process for onsite reburial of the discovered items with the Consulting Tribes. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing, basic analysis, and other analyses as recommended by the Project archeologist and approved by the Consulting Tribes have been completed, all documents should be at a level of standard professional practice to allow the writing of a report of professional quality;

    - A curation agreement with an appropriate qualified repository within San Bernardino County that meets federal standards per 36 CFR Part 79 and therefore would be professionally curated and made available to other archaeologists/researchers for further study, should the resources not be candidates for reburial. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San

Bernardino County, to be accompanied by payment of the fees necessary for permanent curation;

- If more than one Native American tribe or band is involved with the Project and cannot come to a consensus as to the disposition of cultural materials, they shall be curated at the San Bernardino County Museum by default.

- At the completion of all ground disturbing activities on the site, a Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project archaeologist and Native 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 and Consulting Tribes. Should the resources be placed within a curation facility as a final treatment, copies of all reports will be provided to the facility to remain with the collection.

- **TRI-4:** Discovery of Human Remains. In the event that human remains (or remains that may be human) are discovered at the Project site during grading or earthmoving, the construction contractors, Project archaeologist, and/or designated Native American Monitor shall immediately stop all activities within 100 feet of the find. The Project proponent shall then inform the San Bernardino County Coroner and the City of Yucaipa Community Development Department immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If human remains are determined as those of Native American origin, the applicant shall comply with the state relating to the disposition of Native American burials that fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC Section 5097). The coroner shall contact the NAHC to determine the most likely descendant(s)(MLD). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The disposition of the remains shall be overseen by the MLD to determine the most appropriate means of treating the human remains and any associated grave artifacts.

  The specific locations of Native American burials and reburials will be proprietary and not disclosed to the general public. The locations will be documented by the consulting archaeologist in conjunction with the various stakeholders and a report of findings will be filed with the San Bernardino County Museum.

  According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052) determined in consultation between the Project proponent and the MLD. In the event that the Project proponent and the MLD are in disagreement regarding the disposition of the remains, State law will apply and the median and decision process will occur with the NAHC (see Public Resources Code Section 5097.98(e) and 5097.94(k)).

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the waste water 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				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?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

a, b, c) The Yucaipa Valley Water District provides wastewater treatment facilities. The proposed residential development in the GPA area would be required to connect to the sewer system, and would execute a development agreement with the District. As part of the Project application, the applicant has obtained a letter from the District noting that they would be able to accommodate the proposed land use change and development. Potable water would be provided by South Mesa Water Company. As part of the application submittal, the Company noted that there was sufficient infrastructure to serve the proposed development.

d) Solid waste services in the City of Yucaipa are provided by Burrtec, and disposed of within the San Timoteo Sanitary Landfill. According to information from the CalRecycle website, operated by the State of California, this landfill has an average annual receiving capacity of 500,000 to 730,999 tons per year, and has a remaining capacity of over 21.4 million cubic yards[4]. Information on the CalRecycle website provides solid waste characterization databases by types of use, referenced from various environmental documents.

The agency's waste generation rates for multi-family development range from 4 to 8.6 pounds per day per dwelling unit[5][6]. With this range provided and in providing the upper threshold estimate (8.6 pounds per day), it is estimated that the Project at full occupancy would generate approximately 1,720 pounds of solid waste daily.

e) Per Title 8, Chapter 8.28 of the Municipal Code, all property within the City is required to subscribe to refuse collection and handling services. The program is designed to collect trash, recyclables, and green waste and to assist the City in meeting mandated AB 939 diversion goals established by the State of California. Solid waste collection and recycling services pursuant to Chapter 8.28 are a mandatory requirement for new development in the City of Yucaipa. The Project will be required to be served by the City-approved waste disposal service. The City of Yucaipa is currently served by a contract through Burrtec Wastes Industries, Inc. for waste collection. With the Project's adherence to Chapter 8.28 guidelines, Project impacts in regard to compliance with federal, state and local management regulations will be reduced to less than significant.

[4] CalRecycle. n.d. SWIS Facility Detail, San Timoteo Landfill. Accessed March 30, 2022. https://www2.calrecycle.ca.gov/SolidWaste/Site/DataExport.

[5] CalRecycle Residential Sector Generation Rates. Accessed March 8, 2022. https://www2.calrecycle.ca.gov/wastecharacterization/general/rates

[6] Although the State does not officially endorse this information, it does provide some point of reference.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
20. WILDFIRE				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				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?			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?			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?			X	

a) The Project site is located between 2nd Street and 3rd Street which are both existing 2-way, local collector paved roadways, and that development of the site would not impact access to users traveling along both public right-of-way streets. However, because the Project abuts both streets, the Project would be conditioned to construct the ultimate widening of both roadways along with installation of curb and gutter and sidewalk improvements pursuant to the requirements of the General Plan. Figure S-5 of the Yucaipa General Plan does not designate 2nd Street and 3rd Street as a local evacuation route; only County Line Road approximately 375 feet to the south is designated as a Local Evacuation Route. Therefore, the Project will not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

b-d) The Project site is within an urbanized area, adjacent to existing residential development, and is not adjacent to wildland areas. The Project site is also not located within a Fire Safety Review Area according to the City General Plan (Figure S-3), but would be subject to the standard Fire Department conditions of approval to reduce fire related risks. In addition, the City has also adopted the most recent version of the California Building and Fire Codes, which includes sections on fire-resistant construction material requirements based on building use and occupancy. The construction requirements are a function of building size, purpose, type, materials, location, proximity to other structures, and the type of fire suppression systems installed. Many of these requirements are also included as part of the Project's Conditions of Approval as a uniformly applicable development policy, which includes provisions for adequate fire access, sprinkler water systems within indoor spaces, and placement of new fire hydrants at applicable intervals that meet the water flow requirements of the Fire Code. Through these standard requirements, impacts from fire-related hazards would be less than significant. There are no other factors onsite that would exacerbate wildfire risks, or slopes that would pose significant risks, such as post-fire slope instability, or downstream flooding or landslides.

19. **MANDATORY FINDINGS OF SIGNIFICANCE.**				
a) Does the project have the potential to substantially 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, substantially 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			X	

projects, the effects of other current projects, and the effects of probable future projects.)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

a) The proposed Project will not result in significant impacts that have the potential to degrade the quality of the environment. No sensitive plant or animal species or habitats are expected to be significantly impacted by the Project site. In addition, no significant earth moving activities are proposed which could impact cultural or tribal resources. The proposed Project consists of a GPA that would facilitate high density multiple-family residential development in lieu of multiple residential development. As part of the Project, a privately gated 200-unit multi-family apartment Project is proposed on four (4) subject parcels. As noted within this MND, the proposed Project development that could occur under facilitation of the GPA, would not have significant impacts.

b) The proposed Project is limited to a GPA that would change the land use from multiple-family residential to high density multiple-family residential and would allow for a variety of residential use consisting of one-, two- and three-bedroom apartment units, and a an affordability provision that will be executed through a Density Bonus Agreement. .

Given the analysis contained herein related to the potential development that could occur, the cumulative effects of this Project are not expected to result in significant impacts. The evaluation of the proposed Project utilized topical sections related to agriculture, biology, cultural, air quality, geology/soils, greenhouse gases, hydrology, land use, noise, land use, mineral resources, population and housing, recreation, traffic, utilities, and services and did not identify potential significant or cumulative impacts that could not be mitigated to a level that is less than significant.

c) Future development that could occur as a result of the GPA will involve site improvements that are to be constructed consistent with existing City regulations, standards, and processes, and those of other agencies. The topical issues discussed within this document did not identify the potential for adverse effects due, in part, to the incorporation of mitigation measures and standard Conditions of Approval that be applied to any future development would address potential impacts or adverse effects on human beings.

SUPPORTING INFORMATION SOURCES:

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2. City of Yucaipa General Plan EIR, 2016
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5. California State Department of Conservation California Important Farmland Finder Interactive Map. Accessed February 24, 2022. https://maps.conservation.ca.gov/DLRP/CIFF/
6. California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State. Accessed March 18, 2022. https://dof.ca.gov/forecasting/demographics/estimates/
7. California Department of Toxic Substances Control. Accessed March 10, 2022. www.dtsc.ca.gov.
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11. CRM Tech. *Historical/Archaeological Resources Survey Report Tentative Tract Map Number 20031, Fallbrook Meadows Project, City of Yucaipa San Bernardino County, California*, June 19, 2018.
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13. Ganddini Group Inc. *Fallbrook Meadows Residential Project Air Quality, Global Climate Change, and Energy Impact Analysis*, September 14, 2021.
14. Ganddini Group Inc. *Fallbrook Meadows Residential Project Noise Impact Analysis*, September 14, 2021.
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20. Yucaipa Valley Water District. Accessed February 24, 2022. https://www.yvwd.us/
21. Yucaipa, CA U.S.G.S. Map

FALLBROOK MEADOWS RESIDENTIAL PROJECT AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Yucaipa

September 14, 2021

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

FALLBROOK MEADOWS RESIDENTIAL PROJECT AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Yucaipa

September 14, 2021

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Project No. 19403

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EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed Fallbrook Meadows Residential project and to identify measures that may be necessary to reduce potentially significant impacts.

Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Given the temporary and short-term construction schedule, the project would not result in a long-term (i.e., lifetime or 30-year) exposure to TACs as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, impacts from TACs during construction would be less than significant.

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

Operational-Source Emissions

Project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality or toxic air contaminant (TAC) impacts as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

Greenhouse Gases

Project-related GHG emissions would not exceed the SCAQMD draft screening threshold of 3,000 MTCO2e per year for all land uses.

Furthermore, the project's GHG emissions would not exceed the SCAQMD screening threshold (based on EO S-3-05). The project would not conflict with the goals of the City of Yucaipa CAP, AB-32, SB-32, or the CARB Scoping Plan; therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

Energy

For new development such as that proposed by the Fallbrook Meadows Residential project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CalGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other residential uses of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Impacts are considered to be less than significant.

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, and energy impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- analysis of the project's energy use during construction and operation
- recommendations for mitigation measures

The City of Yucaipa is the lead agency for this air quality and greenhouse gas analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

PROJECT LOCATION

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated for opening in 2023. The project is anticipated to be built in one phase with project construction anticipated to start no sooner than the beginning of February 2022 and being completed by the end of May 2023.

SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site include the single-family residential uses adjacent to the north and south, approximately 60 feet (~18 meters) to the east (across 2nd Street), and approximately 60 feet (~18 meters) to the west (across 3rd Street) and the multi-family residential uses located adjacent to the north of the project site. In addition, Calimesa Elementary School is located approximately 221 feet (~67 meters) northeast (across 2nd Street) of the project site.

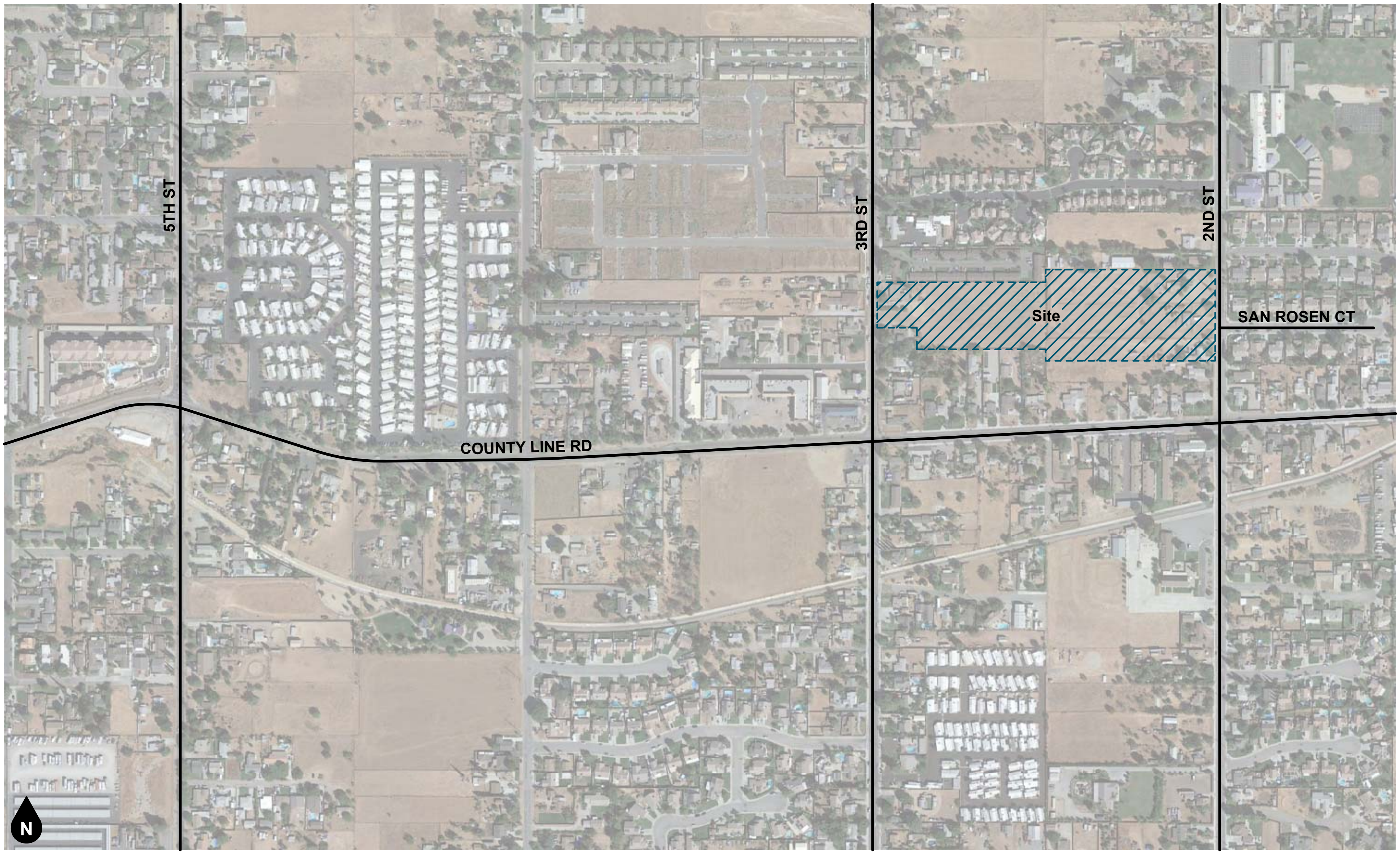

Figure 1
Project Location Map

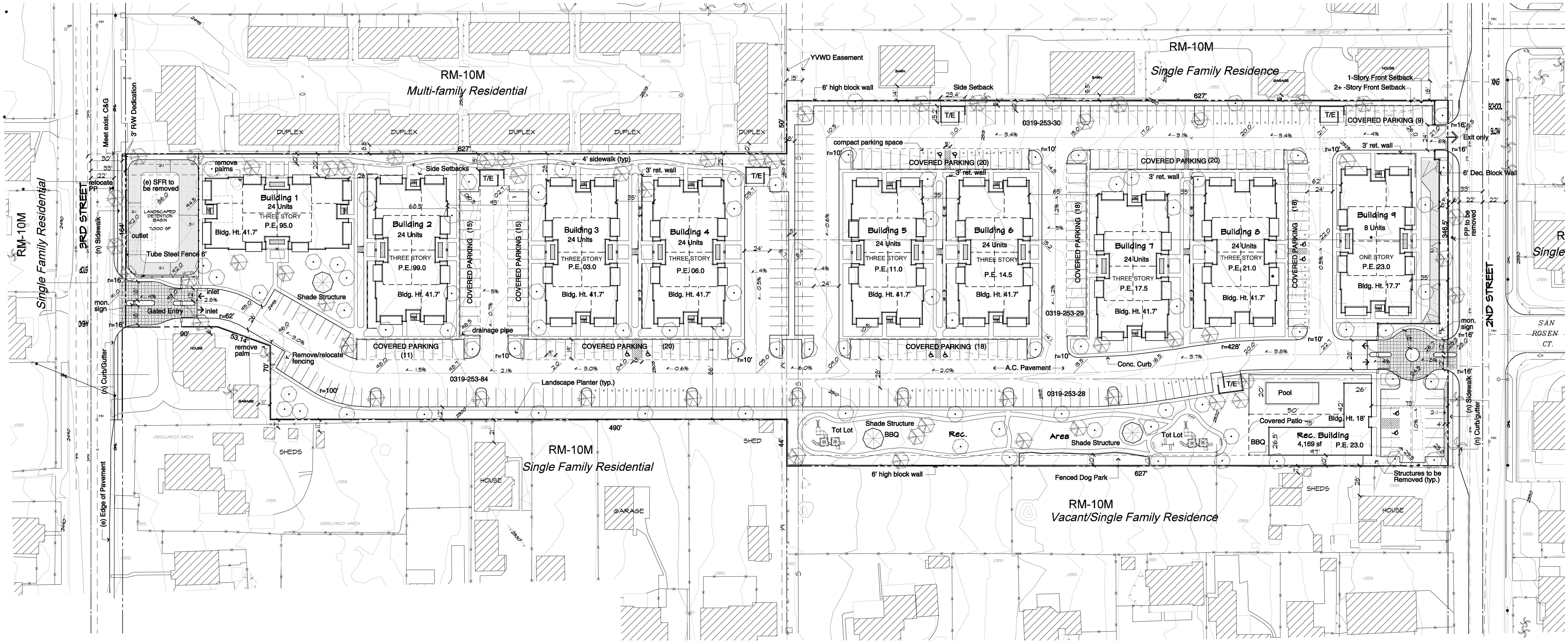

Figure 2
Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project site is located in the City of Yucaipa in San Bernardino County, which is part of the South Coast Air Basin (Basin) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter. The project site is located toward the northeast portion of the South Coast Air Basin near the foot of the San Bernardino Mountains, which define the eastern boundary of the South Coast Air Basin.

The climate of San Bernradino County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western Riverside County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western Riverside County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the South Coast Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the South Coast Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough vehicular volumes in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Redlands area, closest monitoring site with data, are shown below in Table 1. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	66.9	67.5	71	75.7	81	88.1	94.7	95.6	91.3	82.4	71.4	66.9
Avg. Min. Temperature	41.1	43	45.3	48.4	53.2	57.3	62.1	62.8	59.6	53.1	44.1	40.9
Avg. Total Precipitation (in.)	2.66	2.88	2.1	0.99	0.35	0.11	0.07	0.16	0.23	0.62	1.01	2.14

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5790
Data from the Redlands, CA station (047306).

Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

<u>Other Pollutants of Concern</u>

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in San Bernardino County. The nearest likely locations of naturally occurring asbestos, as identified in the <u>General Location Guide for Ultramafic Rocks in California</u> prepared by the California Division of Mines and Geology, is located in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 2.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), suspended particulate matter (PM-2.5), and nitrogen dioxide (NO_2).

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026, and apply to both passenger cars and light trucks. CARB. It also sets fuel specifications to further reduce vehicular emissions.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO2, NO2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South

Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projected attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

AB 617 Nonvehicular air pollution: criteria air pollutants and toxic air contaminants

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

Air Quality Management Plan

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

South Coast AQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 ppb) for South Coast Air Basin and Coachella Valley. To support the development of mobile source strategies for the 2022 AQMP, South Coast AQMD, in conjunction with California Air Resources Board, has established Mobile Source Working Groups which are open to all interested parties.

SCAQMD Rules and Regulations

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project may be required to comply with, either directly, or indirectly:

SCAQMD Rule 402

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

SCAQMD Rule 445

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.
(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

SCAQMD Rule 1143

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1186

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

SCAQMD Rule 1403

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

SCAQMD Rule 2202

On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

SCAQMD Rule 2305

The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program aims to reduce nitrogen oxide and diesel emissions associated with warehouses, help meet federal standards and improve public health. The WAIRE Program is an indirect source rule that regulates warehouse facilities to reduce emissions from the goods movement industry. Owners and operators of warehouses that have 100,000 square feet or more of indoor floor space in a single building must comply with the WAIRE Program. WAIRE is a menu-based point system in which warehouse operators are required to earn a specific number of points every year. The yearly number of points required is based on the number of trucks trips made to and from the warehouse each year, with larger trucks such as tractors or tractor-trailers multiplied by 2.5. Warehouse operators may be exempt from parts of the rule if they operate less than 50,000 square feet of warehousing activities, if the number of points required is less than 10, or if the WAIRE menu action chosen under performs due to circumstances beyond the operator's control, such as a manufacturer defect. SCAQMD Rule 316 establishes fees to fund Rule 2305 compliance activities.

Air Quality Guidance Documents

SCAQMD CEQA Handbook

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[1]. The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020. Connect SoCal is a long-range visioning plan that builds

[1] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

Local – City of Yucaipa

Local jurisdictions, such as the City of Yucaipa, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The Public Safety Element of the City of Yucaipa General Plan establishes goals and policies to improve air quality in the City. Applicable goals and policies include:

Goal S-7 Air Quality and Climate Change. Clean and healthful air resources that promotes public health, protects the natural environment, and mitigates local impacts to climate change.

Policy S-7.1 Integrated Planning. Integrate air quality planning with land use, economic development, and transportation-related planning to allow for the control and management of air quality.

Policy S-7.2 Transportation Sources. Encourage the expansion of transit, buildout of the pedestrian and bicycle route network, support of regional ride-share programs, and other efforts to reduce vehicle miles travelled from Yucaipa and associated vehicle emissions.

Policy S-7.3 Sensitive Land Uses. Protect residents from health risks by avoiding the placement of sensitive uses and land uses generating high levels of pollutants within close proximity to one another. Appropriate distances shall be determined based on best available knowledge.

Policy S-7.4 Regional Cooperation. Work with the South Coast Air Quality Management District, San Bernardino Association of Governments, local cities, and other agencies and stakeholders in implementing programs that reduce air pollution.

Policy S-7.8 Odor Management. Work with businesses to address odors and associated potential public nuisances from operations; where permissible under state law, require odor management plans where needed to minimize odors resulting from business operations.

Table 2
State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time: California Standards	Concentration / Averaging Time: Federal Primary Standards	Most Relevant Effects
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 $\mu g/m^3$/24-hour 20 $\mu g/m^3$/annual	150 $\mu g/m^3$/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$ / annual	35 $\mu g/m^3$/24-hour 12 $\mu g/m^3$/annual	
Sulfates	25 $\mu g/m^3$/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 $\mu g/m^3$/30-day	0.15 $\mu g/m^3$/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf

Table 3
South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Maintenance (Serious)
Nitrogen dioxide	Attainment	Maintenance (Primary)
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Maintenance (Serious)
PM2.5	Nonattainment	Nonattainment (Moderate)

Source (Federal and State Status): California Air Resources Board (2020) https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations & US EPA (2020) https://www.epa.gov/green-book.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan prepared by SCAQMD (March 2017) indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the East San Bernardino Valley Air Monitoring Area (Area 35). The nearest air monitoring station to the project site is the Redland - Dearborn Monitoring Station (Redlands Station). The Redlands Station is located approximately 6.74 miles northwest of the project site at 500 N. Dearborn, Redlands. As not all monitoring stations monitor all pollutants, data was also taken from the Banning Airport Monitoring Station (Banning Station) located approximately 12.16 miles southeast of the project site at 200 S. Hathaway Street, Banning was also utilized. However, it should be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site. Table 4 presents the monitored pollutant levels from the Redlands and Banning Stations.

Table 4 summarizes 2017 through 2019 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone standards.

Ozone

During the 2017 to 2019 monitoring period, the State 1-hour concentration standard for ozone was exceeded between 53 and 80 days each year at the Redlands Station. The State 8-hour ozone standard has been exceeded between 99 and 117 days each year over the past three years at the Redlands Station. The Federal 8-hour ozone standard was exceeded between 95 and 116 days each year over the past three years at the Redlands Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Banning Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

The Banning Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standards for PM10 were exceeded for two days each year in 2017 and 2018 over the last three years at the Redlands Station. Over the past three years, the Redlands Station did not record an exceedance of the Federal 24-hour standards for PM10.

Over the last three years, there was insufficient data for the Federal 24-hour standard for PM2.5 at the Banning Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

Table 4
Air Quality Monitoring Summary

Pollutant (Standard)[1]		Year 2017	2018	2019
Ozone:	Maximum 1-Hour Concentration (ppm)	0.156	0.136	0.137
	Days > CAAQS (0.09 ppm)	80	53	73
	Maximum 8-Hour Concentration (ppm)	0.135	0.115	0.118
	Days > NAAQS (0.070 ppm)	116	95	109
	Days > CAAQS (0.070 ppm)	117	99	111
Carbon Monoxide:[2]	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[2]	Maximum 1-Hour Concentration (ppm)	0.056	0.051	0.056
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	77.0	74.2	44.9
	Days > NAAQS (150 µg/m3)	0	0	0
	Days > CAAQS (50 µg/m3)	2	2	*
	Annual Average (µg/m3)	26.2	26.4	26.0
Ultra-Fine Particulates (PM2.5):[2]	Maximum 24-Hour Concentration (µg/m3)	34.9	32.0	23.4
	Days > NAAQS (35 µg/m3)	*	*	*
	Annual Average (µg/m3)	11.4	*	9.5

Notes:
Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Redlands-Dearborn Monitoring Station, unless otherwise noted.
(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million
* Means there was insufficient data available to determine value.
(2) Data taken from the Banning Airport Monitoring Station.

AIR QUALITY STANDARDS

Significance Thresholds

Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[2] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.

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

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook. In the interim, supplemental guidance has been adopted by the SCAQMD. The

[2] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

potential air quality impacts of the project are, therefore, evaluated according to numeric indicators developed by the SCAQMD in the CEQA Air Quality Handbook and supplemental guidance from the SCAQMD.[3]

Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 5.

Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significance Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significance Thresholds Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significance Thresholds Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5. Under the LST methodology, local air quality emissions from the project were analyzed using the SCAQMD's Mass Rate Localized Significance Thresholds Look-up Tables.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significance Thresholds. Table 5 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

[3] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

Table 5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3

Toxic Air Contaminants, Odor and GHG Thresholds	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
GHG	10,000 MT/yr CO2e for industrial projects

Ambient Air Quality Standards	
Pollutant	SCAQMD Standards
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3

Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of four existing single-family residential dwelling units totaling approximately 3,500 square feet; grading of approximately 8.4 acres; construction of 200 multi-family residential dwelling units and a 4,159 square foot clubhouse; paving of a parking lot with 414 parking spaces; and application of architectural coatings. No import or export of material is anticipated during grading. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than the beginning of February 2022 and being completed by the end of May 2023. The project is anticipated to be operational in 2023.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2020.4.0) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.[4]

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2017 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. EMFAC2017 and OFFROAD2011 are computer programs generated by 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. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

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, 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

[4] South Coast Air Quality Management District, California Emissions Estimator Model, http://www.aqmd.gov/caleemod/.

Notification Form to SCAQMD. Based on the size of the Project area (approximately 8.4 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are 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 has been included in the CalEEMod modeling for the proposed project.

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 of VOCs for building coatings and 100 grams per liter or less of VOCs for traffic coatings.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) grading, (3) building construction, (4) paving, and (5) application of architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). 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 the following parameters:

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

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 7, the maximum number of acres disturbed in a day would be 2.5 acres during grading. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significance 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, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the East San Bernardino Valley source receptor area (SRA) 35 and a disturbance value of two acres per day, to be conservative. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptors to the project site are the single-family residential uses located adjacent to the north and south and the multi-family residential uses located adjacent to the north of the project site; therefore, the SCAQMD Look-up Tables for 25 meters was used. Table 8 shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds.

The data provided in Table 8 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Construction-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

Construction-Related Toxic Air Contaminant Impacts

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. According to the Office of Environmental Health Hazard Assessment (OEHHA)[5] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[6] health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 16 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SCAQMD Rule 1403 if asbestos is found during the renovation and construction activities. Therefore, impacts from TACs during construction would be less than significant.

Construction-Related Odor Impacts

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 to cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel

[5] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[6] South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

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.

Table 6
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Demolition	On-Site[1]	2.64	25.72	20.59	0.04	1.30	1.16
	Off-Site[2]	0.07	0.15	0.64	0.00	0.18	0.05
	Subtotal	2.71	25.87	21.24	0.04	1.49	1.21
Grading	On-Site[1]	1.95	20.86	15.27	0.03	3.70	2.20
	Off-Site[2]	0.06	0.04	0.62	0.00	0.17	0.05
	Subtotal	2.01	20.90	15.89	0.03	3.87	2.25
Building Construction	On-Site[1]	1.71	15.62	16.36	0.03	0.81	0.76
	Off-Site[2]	1.24	3.87	11.97	0.04	3.44	0.96
	Subtotal	2.94	19.49	28.33	0.07	4.25	1.72
Paving	On-Site[1]	1.48	10.19	14.85	0.02	0.51	0.47
	Off-Site[2]	0.06	0.04	0.57	0.00	0.17	0.05
	Subtotal	1.54	10.23	15.42	0.02	0.68	0.51
Architectural Coating	On-Site[1]	62.38	1.30	1.81	0.00	0.07	0.07
	Off-Site[2]	0.21	0.13	2.00	0.01	0.60	0.16
	Subtotal	62.59	1.43	3.81	0.01	0.67	0.23
Total for overlapping phases[3]		67.07	31.15	47.56	0.10	5.59	2.46
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2020.4.0

(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and grading PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.

(2) Off-site emissions from equipment operated on public roads.

(3) Construction, painting and paving phases may overlap.

Table 7
Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Demolition	Rubber Tired Dozers	2	0.5	1
Total for phase		-	-	1
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors[1]	3	0.5	1.5
Total for phase		-	-	2.5

Notes:
Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, 2011b.
(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per SCAQMD staff.

Table 8
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Demolition	25.72	20.59	1.30	1.16
Grading	20.86	15.27	3.70	2.20
Building Construction	15.62	16.36	0.81	0.76
Paving	10.19	14.85	0.51	0.47
Architectural Coating	1.30	1.81	0.07	0.07
SCAQMD Thresholds[1]	170	1,174	7	5
Exceeds Threshold?	No	No	No	No

Notes:

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres, to be conservative, at a distance of 25 m in SRA 35 East San Benardino Valley.

(1) The nearest sensitive receptors are the single-family residential uses adjacent to the north and south and the multi-family residential uses located adjacent to the north of the project site; therefore, the 25 meter threshold was used.

Note: The project will disturb up to a maximum of 2.5 acres a day during grading (see Table 7).

Long-Term Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2023, which is the anticipated opening year per the Fallbrook Meadows Residential Project Traffic Impact Analysis (TIA) prepared by Ganddini Group, Inc. (September 2021) for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips (trip generation rate) from the TIA into the CalEEMod Model. The TIA found that the proposed project would create approximately 1,464 vehicle trips per day with a trip generation rate of 9.44 trips per dwelling unit per day. The TIA also showed that the existing single-family residential dwelling units that are to be removed generate a total of 38 vehicle trips per day with a trip generation rate of 7.32 trips per dwelling unit per day. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, 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. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 9. The results show that, even without the reduction from the existing residential uses that are to be demolished, none of the SCAQMD regional thresholds would be exceeded. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

Local CO Emission Impacts from Project-Generated Vehicular Trips

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 which were presented above.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above, 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.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The TIA showed that the proposed project would generate a maximum of approximately 1,426 net total daily vehicle trips. The intersection with the highest traffic volume is located at 5th Street and County Line Road and has a Year 2040 with Project AM peak hour volume of 815 vehicles. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. Therefore, as the intersection volume falls far short of 100,000 vehicles per day, 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.

Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. Single-family detached residential dwelling units are located adjacent to the west and north of the project site.

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 the development of the site with residential uses and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Operations-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project operation are not anticipated.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and 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.

Table 9
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	5.37	3.18	17.82	0.02	0.33	0.33
Energy Usage[2]	0.09	0.80	0.36	0.01	0.06	0.06
Mobile Sources[3]	5.07	7.00	49.92	0.11	10.65	2.89
Subtotal Emissions	10.53	10.98	68.09	0.13	11.04	3.29
-existing single-family residential uses to be removed	-1.28	-0.32	-3.75	-0.01	-0.58	-0.38
Total Emissions	9.25	10.66	64.35	0.13	10.46	2.91
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2020.4.0; the higher of either summer or winter emissions.
(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
(3) Mobile sources consist of emissions from vehicles and road dust.

Cumulative Air Quality Impacts

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[7] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

Project Specific Impacts

The project area is out of attainment for ozone, PM10, and PM2.5. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant.

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which, would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the project would result in a less than significant cumulative impact for operational emissions.

Air Quality Compliance

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 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.

[7] South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

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 sections.

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that, long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional 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.

Criteria 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 Yucaipa Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Multiple Residential (RM-10M) in the City of Yucaipa General Plan. The General Plan Community Design and Land Use Element states the RM-10M designation allows for 8.7 dwelling units per gross acre. The project proposes to develop the site with 200 multi-family residential dwelling units on approximately 8.4 acres resulting in approximately 23.8 dwelling units per acre. Therefore, the proposed project is not currently consistent with the existing land use and zoning. However, the project includes a General Plan Amendment and Change of Zone from RM-10M to R-24. As stated in the General Plan Community Design and Land Use Element, the R-24 designation allows for a density of 20 to 24 dwelling units per gross acre. Therefore, once the GPA and Chang of Zone are approved, the project would be consistent with the General Plan Land Use and Zoning designations. Although the project and GPA may initially result in an inconsistency with the AQMP on paper, the inconsistency would not necessarily constitute a conflict with the AQMP. The SCAQMD acknowledges that strict consistency with all aspects of the AQMP is not required in order to make a finding of no conflict. Rather, a project is considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The project would implement contemporary energy-efficient technologies and regulatory/operational programs required per Title 24, CalGreen and City standards. Generally, compliance with SCAQMD emissions reductions and control requirements also act to reduce project air pollutant emissions. In combination, project emissions-reducing design features and regulatory/operational programs are consistent with and support overarching AQMP air pollution reduction strategies. Project support of these strategies promotes timely attainment of AQMP air quality standards and would bring the project into conformance with the AQMP. 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.

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

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 (NOx) 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 following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

Methane (CH_4)

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 10. As shown in Table 10, the global warming potential of GHGs ranges from 1 to 22,800.

Table 10
Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	(100 Year Horizon)
Carbon Dioxide (CO_2)	--[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:
Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html
(1) Compared to the same quantity of CO_2 emissions.
(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

GREENHOUSE GAS STANDARDS AND REGULATION

International

Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

The Paris Agreement

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[8]

Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[9] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[10] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[11]

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposes to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposes to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those

[8] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

[9] The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.

[10] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

[11] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposes to establish a clean slate with respect to NHTSA's regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA).[12]

State of California

California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

[12] https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption

Executive Order S-3-05

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32 (California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006)

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO2e using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO2e (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO2e.

First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO2e.

2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[13] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

[13] California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

SB 32, Pavley. California Global Warming Solutions Act of 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards.

Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250.

Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6.

Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

California Code of Regulations (CCR) Title 24, Part 11 (California Green Building Standards)

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011.

2016 CALGreen Code: The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

Executive Order B-29-15

Executive Order B-29-15, mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

Executive Order N-79-20

Executive Order N-79-20 Signed in September 2020, Executive Order N-79-20 establishes as a goal that where feasible, all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, will be zero-emission by 2035. The executive order sets a similar goal requiring that all medium and heavy-duty vehicles will be zero-emission by 2045 where feasible. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium-and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new zero emission vehicles (ZEVs) "towards the target of 100 percent." The executive order directs the California Environmental Protection Agency, the California Geologic Energy Management Division (CalGEM), and the California Natural Resources Agency to transition and repurpose oil production facilities with a goal toward meeting carbon neutrality by 2045. Executive Order N-79-20 builds upon the CARB Advanced Clean Trucks regulation, which was adopted by CARB in July 2020.

SBX1 2

Signed into law in April 2011, SBX1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update required that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[14]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[15] As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The

[14] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

[15] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2020.

Regional – South Coast Air Quality Management District

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

SCAQMD Regulation XXVII, Climate Change

SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. 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 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 with all projects within its jurisdiction. 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 MTCO2e per year
- Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
- Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.

- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/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 SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, 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 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

SCAQMD Working Group

Since neither the CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

SCAQMD Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

SCAQMD Rule 2702

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Local – City of Yucaipa

City of Yucaipa Climate Action Plan

The City adopted the City of Yucaipa Climate Action Plan (CAP) in September 2015. The CAP presents the greenhouse gas (GHG) inventories, identifies the effectiveness of California initiatives to reduce GHG emissions, and identifies local measures that were selected by the City to reduce GHG emissions under the City's jurisdictional control to achieve the City's identified GHG reduction target. The City of Yucaipa participated in the San Bernardino County Regional Greenhouse Gas Reduction Plan which presents the collective results of all local efforts to reduce GHG emissions consistent with statewide GHG targets expressed in Assembly Bill (AB) 32, the "Global Warming Solutions Act of 2006" and Senate Bill (SB) 375. Yucaipa used the technical information within the San Bernardino County Regional Greenhouse Gas Reduction Plan in the development of the CAP. The City has selected a goal to reduce their community GHG emissions by 15% below 2008 baseline levels by the year 2020.

That CAP states that a threshold level of 3,000 MTCO2e per year will be used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. Appendix C of the CAP includes screening tables to be used by the City for review of development projects in order to ensure that the specific reduction strategies in the CAP are implemented as part of the CEQA process. The Screening Tables provide a menu of options that both ensures implementation of the reduction strategies and flexibility on how development projects will implement the reduction strategies to achieve an overall reduction of emissions, consistent with the reduction target of the CAP. The Screening Tables assigns points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as "feature"). The point values correspond to the minimum emissions reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG reduction measures. The point levels are based upon improvements compared to 2008 emission levels of efficiency. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the City's CAP. As such, those projects that garner a total of 100 points or greater would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

City of Yucaipa General Plan

The Public Safety Element of the City of Yucaipa General Plan establishes goals and policies to reduce greenhouse gases in the City. Applicable goals and policies include:

Goal S-7	Air Quality and Climate Change. Clean and healthful air resources that promotes public health, protects the natural environment, and mitigates local impacts to climate change.
Policy S-7.5	Energy Usage. Support the reduction and conservation of energy usage in residential and nonresidential buildings through adoption of building codes, promotion of energy-saving equipment, solar power, and other technology.
Policy S-7.6	Greenhouse Gas Reductions. Reduce communitywide greenhouse gas emissions locally through the implementation of Yucaipa's Climate Action Plan; actively support regional efforts to reduce greenhouse gases throughout the county.
Policy S-7.7	Open Spaces Preservation. Continue to preserve and protect Yucaipa's open natural spaces, maintain a community forest, and plant public landscaping to help filter air pollutants and improve air quality.

SIGNIFICANCE THRESHOLDS

Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[16].

Thresholds of Significance for this Project

To determine whether the project's GHG emissions are significant, this analysis uses the SCAQMD draft screening threshold of 3,000 MTCO2e per year for all land uses.

METHODOLOGY

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

CalEEMod Version 2020.4.0 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Output for year 2023 is available in Appendix C. Each source of GHG emissions is described in greater detail below.

[16] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the TIA into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions. See Section 2 for details.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. AB 341 requires that 75 percent of waste be diverted from landfills by 2020, reductions for this are shown in the mitigated CalEEMod output values. No other changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to the default water usage parameters.

Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod and in the manner detailed above in Section 2.

PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results are shown below in Table 11 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 11 shows that the total for the proposed project's emissions (without credit for any reductions from sustainable design and/or regulatory requirements or removal of existing uses) would be 2,294.72 MTCO2e per year. Furthermore, with incorporation of the reduction from removal of existing residential uses, the proposed project's emissions would be 2,231.27 MTCO2e per year. According to the thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would exceed the SCAQMD draft threshold of 3,000 $MTCO_2e$ per year for all land uses. Therefore, operation of the proposed project would not create a significant cumulative impact to global climate change. No mitigation is required.

Table 11
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	46.60	46.60	0.00	0.00	46.94
Energy Usage[2]	0.00	334.11	334.11	0.02	0.00	335.97
Mobile Sources[3]	0.00	1,730.62	1,730.62	0.10	0.09	1,759.15
Waste[4]	23.49	0.00	23.49	1.39	0.00	58.19
Water[5]	4.21	47.14	51.35	0.44	0.01	65.46
Construction[6]	0.00	28.59	28.59	0.00	0.00	29.01
Subtotal Emissions	27.70	2,187.07	2,214.77	1.95	0.10	2,294.72
-existing residential uses to be removed	-1.42	-59.51	-60.94	-0.07	0.00	-63.45
Total Emissions	26.28	2,127.56	2,153.83	1.88	0.10	2,231.27
SCAQMD Draft Screening Threshold						3,000
Exceeds Threshold?						No

Notes:
Source: CalEEMod Version 2020.4.0 for Opening Year 2023.
(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
(2) Energy usage consist of GHG emissions from electricity and natural gas usage.
(3) Mobile sources consist of GHG emissions from vehicles.
(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
(6) Construction GHG emissions CO2e based on a 30 year amortization rate.

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the applicable plan for the proposed project is the City of Yucaipa CAP; however, the City's CAP thresholds are based on the year 2020 and the proposed project is to be operational in 2023. Therefore, to determine consistency with applicable greenhouse gas plans, the project has been compared to both the City's CAP as well as the CARB Scoping Plan.

City of Yucaipa CAP

As stated in the CAP, the procedures for evaluating GHG impacts and determining significance for CEQA purposes are streamlined by (1) applying an emissions level that is determined to be less than significant for small projects, and (2) utilizing Screening Tables to mitigate project GHG emissions that exceed the threshold level. The CAP uses a threshold level of 3,000 MTCO2e per year to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions.

As shown above in Table 11, the proposed project's emissions would not exceed 3,000 MTCO2e per year. Therefore, the project is consistent with the City of Yucaipa CAP and does not need to accrue points through the CAP's Screening Tables.

Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of greenhouse gases in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

In November 2017, CARB release the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. In addition, Chapter 4 provides a broader description of the many actions and proposals being explored across the sectors, including the natural resources sector, to achieve the State's mid and long-term climate goals.

Guided by legislative direction, the actions identified in the 2017 Scoping Plan reduce overall GHG emissions in California and deliver policy signals that will continue to drive investment and certainty in a low carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and Trade Program, which constrains and reduces emissions at covered sources.

As the latest, 2017 Scoping Plan builds upon previous versions, project consistency with applicable strategies of both the 2008 and 2017 Plan are assessed in Table 12. As shown in Table 12, the project is consistent with the applicable strategies and would result in a less than significant impact.

At a net level of 2,231.27 $MTCO_2e$ per year, the project's GHG emissions do not exceed the SCAQMD threshold of 3,000 MTCO2e per year for all land uses and would be in compliance with the reduction goals of the City's CAP, CARB Scoping Plan, AB-32 and SB-32. Furthermore, the project will comply with applicable Green Building Standards and City of Yucaipa's policies regarding sustainability (as dictated by the City's General Plan). Impacts are considered to be less than significant.

Table 12 (1 of 2)
Project Consistency with CARB Scoping Plan Policies and Measures

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	Consistent. The project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	Consistent. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the project that are required to comply with the measures will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as any City recycling and waste reduction programs, which comply, with the 75 percent reduction required by 2020 per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The project will comply with all applicable City ordinances and CAL Green requirements.

Table 12 (2 of 2)
Project Consistency with CARB Scoping Plan Policies and Measures

2017 Scoping Plan Recommended Actions to Reduce Greenhouse Gas Emissions	Project Compliance with Recommended Action
Implement Mobile Source Strategy: Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Car regulations.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025 and at least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOX standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement SB 350 by 2030: Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	Consistent. The project will be compliant with the current Title 24 standards.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	Consistent. The project will be required to comply with City programs, such as any City recycling and waste reduction programs, which comply, with the 75 percent reduction required by 2020 per AB 341.

Notes:

(1) Source: CARB Scoping Plan (2008 and 2017)

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[17] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Consistent with CEQA Guidelines Section 15064h(3),[18] the City, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the goals and objectives of the City of Yucaipa CAP and the CARB Scoping Plan.

Thus, given the project's consistency with the City's CAP, CARB Scoping Plan, and SCAQMD's 3,000 MTCO2e per year threshold for all land uses, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Given this consistency, it is concluded that the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

[17] Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

[18] The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."

4. ENERGY ANALYSIS

EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

Overview

California's estimated annual energy use as of 2019 included:

- Approximately 277,704 gigawatt hours of electricity;[19]
- Approximately 2,154,030 million cubic feet of natural gas per year;[20] and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[21]

As of 2018, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.1 percent transportation;
- Approximately 23.5 percent industrial;
- Approximately 18.3 percent residential; and
- Approximately 19.2 percent commercial.[22]

California's electricity in-state generation system generates approximately 200,475 gigawatt-hours each year. In 2019, California produced approximately 72 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 9 percent) and the U.S. Southwest (approximately 19 percent). Natural gas is the main source for electricity generation at approximately 42.97 percent of the total in-state electric generation system power as shown in Table 13.

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel among the 50 states and accounted for one-fifth of the nation's jet fuel consumption in 2018.
- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation.

[19] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2020. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation.
[20] Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] August 31, 20020. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.
[21] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/
[22] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] January 16, 2020 https://www.eia.gov/state/?sid=CA#tabs-2

- In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California's net electricity generation.[23]

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons, within a service area encompassing approximately 50,000 square miles.[24] SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers.[25]

Table 14 identifies SCE's specific proportional shares of electricity sources in 2019. As shown in Table 14, the 2019 SCE Power Mix has renewable energy at 35 percent of the overall energy resources, of which biomass and waste is at 1 percent, geothermal is at 8 percent, eligible hydroelectric is at 1 percent, solar energy is at 16 percent, and wind power is at 12 percent; other energy sources include large hydroelectric at 8 percent, natural gas at 16 percent, nuclear at 8 percent and unspecified sources at 33 percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[26]

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[23] State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020.] http://www.eia.gov/state/?sid=CA#tabs2.

[24] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory

[25] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

[26] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 40 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[27,28] About 28 percent of total United States energy consumption in 2019 was for transporting people and goods from one place to another. In 2019, petroleum comprised about 91 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[29] In 2020, about 123.49 billion gallons (or about 2.94 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 337 million gallons (or about 8.03 million barrels) per day.[30]

REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[31]

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012.[32]

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[27] CARB. California Greenhouse Gas Emissions Inventory – 2020 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm

[28] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

[29] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation

[30] https://www.eia.gov/tools/faqs/faq.php?id=23&t=10

[31] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

[32] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule.

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2019 Integrated Energy Policy Report (2019 IEPR) was adopted February 20, 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast.[33]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

[33] California Energy Commission. Final 2019 Integrated Energy Policy Report. February 20, 2020. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 3 of this report.

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Assembly Bill 1493/Pavley Regulations

As discussed Section 3 of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. Although aimed at reducing GHG emissions, specifically, a co-benefit of the Pavley standards is an improvement in fuel efficiency and consequently a reduction in fuel consumption.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed Section 3 of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[34]

[34] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NOX) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

<u>Sustainable Communities Strategy</u>

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

<u>Local Regulations</u>

<u>City of Yucaipa General Plan</u>

The Public Services and Facilities Element of the City of Yucaipa General Plan establishes goals and policies related to energy conservation in the City. Applicable goals and policies include:

Goal PSF-8 Energy and Conservation. Reliable, adequate, and safe provision of electric, natural gas, telecommunications, and other similar infrastructure for Yucaipa residents and business.

Policy PSF-8.1 Reliable Energy. Work with local utility companies to ensure the reliable provision of electricity and natural gas services for existing and newly developing areas and to minimize rolling shortages and blackouts.

Policy PSF-8.2 Renewable Energy. Encourage the use of renewable energy sources (e.g., solar and other technologies) through demonstration projects at public facilities and development or financial incentives, where feasible.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2020.4.0 Daily and Annual Outputs contained in Appendix B and D, utilized for air quality and greenhouse gas analyses in Sections 2 and 3 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

The construction schedule is anticipated to occur between the beginning of February 2022 and the end of May 2023 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately sixteen-month schedule is relatively short and the project site is approximately 64.54 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by Southern California Edison. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[35], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with 200 multi-family residential dwelling units, which per CalEEMod estimates would total approximately 200,000 square feet. Based on Table 15, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $7,424.00. Furthermore, as of May 14, 2021, SCE's general

[35] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

service rate schedule (GS-1) is approximately $0.11 per kWh of electricity.[36] As shown in Table 15, the total electricity usage from project construction related activities is estimated to be approximately 67,491 kWh.

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 16 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average, aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 16 shows the results of the analysis of construction equipment.

As presented in Table 16, project construction activities would consume an estimated 42,587 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 9LDT2) at a mix of 50 percent/25 percent/25 percent, respectively, along area roadways.[37] With respect to estimated VMT, the construction worker trips would generate an estimated 1,036,820 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) using information generated using CARB's 2021 EMFAC model (see Appendix D for details). An aggregate fuel efficiency of 26.38 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 17 shows that an estimated 39,303 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Tables 18 and 19 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an

[36] Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doclib/public/regulatory/tariff/electric/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1.pdf

[37] CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for worker trips includes light duty autos and light duty trucks, LDA, LDT1, LDT2, at a mix of 50%/25%/25%, respectively.

estimated 128,563 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 7.59 mpg for medium heavy-duty trucks and 5.87 for heavy heavy duty trucks (see Appendix D for details).[38] Tables 18 and 19 show that an estimated 19,256 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately sixteen-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), it is assumed that an average trip for autos and light trucks was assumed to be 6.9 miles and 3- 4-axle trucks were assumed to travel an average of 16.6 miles.[39] The project includes the development of the site with residential uses; therefore, in order to present a worst-case scenario it was assumed that vehicles would operate 365 days per year. Table 20 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[40]

[38] CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for vendor trips includes medium-heavy duty and heavy-heavy duty trucks, MHDT and HHDT, at a mix of 50%/50%.

[39] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-O (home-other) or C-O (commercial-other).

[40] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2023). See Appendix C for EMFAC output.

The proposed project would generate 1,426 trips per day, after the reduction from removal of existing residential dwelling units. The vehicle fleet mix was used from the CalEEMod output. Table 20 shows that an estimated 171,045 gallons of fuel would be consumed per year for the operation of the proposed project.

Trip generation and VMT generated by the proposed project are consistent with other similar residential uses of similar scale and configuration as reflected respectively in the Institute of Transportation Engineers (ITE) Trip Generation Manual (20th Edition, 2017). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015.[41,42] Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Southern California Edison) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) and are provided in Table 21.

As shown in Table 21, the estimated electricity demand for the proposed project is approximately 933,207 kWh per year, without the reduction of energy used by the existing residential uses that are to be removed. In 2019, the residential sector of the County of San Bernardino consumed approximately 5,054 million kWh of electricity.[43] In addition, the estimated natural gas consumption for the proposed project is approximately 3,159,560 kBTU per year, without the reduction of natural gas used by the existing residential uses that are to be removed. In 2019, the residential sector of the County of San Bernardino consumed approximately 275million therms of gas.[44] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2019 residential sector demand.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

Furthermore, the proposed project energy demands in total would be comparable to other residential projects of similar scale and configuration. Therefore, the project facilities' energy demands and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

RENEWABLE ENERGY AND ENERGY EFFICIENCY PLAN CONSISTENCY

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

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41 https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics
42 https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics
43 California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx
44 California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by Southern California Edison and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources. However, the vehicles associated with the proposed project would be required to comply with federal and state fuel efficiency standards.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CALGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in Section 3 above, the proposed project would be consistent with the applicable goals of the City of Yucaipa CAP.

Conclusions

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a residential project that is not proposing any additional features that would require a larger energy demand than other residential projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. Notwithstanding, the project proposes residential uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

Table 13
Total Electricity System Power (California 2019)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	Total California Energy Mix (GWh)	Total California Power Mix
Coal	248	0.12%	219	7,765	7,985	10.34%	8,233	2.96%
Natural Gas	86,136	42.97%	62	8,859	8,921	11.55%	95,057	34.23%
Nuclear	16,163	8.06%	39	8,743	8,782	11.37%	24,945	8.98%
Oil	36	0.02%	0	0	0	0.00%	36	0.01%
Other (Petroleum Coke/Waste Heat)	411	0.20%	0	11	11	0.01%	422	0.15%
Large Hydro	33,145	16.53%	6,387	1,071	7,458	9.66%	40,603	14.62%
Unspecified Sources of Power	0	0.00%	6,609	13,767	20,376	26.38%	20,376	7.34%
Renewables	64,336	32.09%	10,615	13,081	23,696	30.68%	88,032	31.70%
Biomass	5,851	2.92%	903	33	936	1.21%	6,787	2.44%
Geothermal	10,943	5.46%	99	2,218	2,318	3.00%	13,260	4.77%
Somall Hydro	5,349	2.67%	292	4	296	0.38%	5,646	2.03%
Solar	28,513	14.22%	282	5,295	5,577	7.22%	34,090	12.28%
Wind	13,680	6.82%	9,038	5,531	14,569	18.87%	28,249	10.17%
Total	200,475	100.00%	23,930	53,299	77,229	100.00%	277,704	100.00%

Notes:

(1) Source: California Energy Commission. 2019 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation

Table 14
SCE 2019 Power Content Mix

Energy Resources	2019 SCE Power Mix
Eligible Renewable	35%
Biomass & Biowaste	1%
Geothermal	6%
Eligible Hydroelectric	1%
Solar	16%
Wind	12%
Coal	0%
Large Hydroelectric	8%
Natural Gas	16%
Nuclear	8%
Other	0%
Unspecified Sources of power*	33%
Total	100%

Notes:

(1) https://www.sce.com/sites/default/files/inline-files/SCE_2019PowerContentLabel.pdf

* Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Table 15
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)[1]	Construction Duration (months)	Total Project Construction Power Cost
$2.32	200.000	16	$7,424.00

Cost per kWh[2]	Total Project Construction Electricity Usage (kWh)
$0.11	67,491

Notes:

(1) Total square footage from CalEEMod default total floor surface area.

(2) Assumes the project will be under the GS-1 General Service rate under SCE.

Table 16
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	22	Concrete/Industrial Saws	1	8	81	0.73	473	563
	22	Excavator	3	8	158	0.38	1,441	1,714
	22	Rubber Tired Dozers	2	8	247	0.4	1,581	1,880
Grading	22	Excavator	1	8	158	0.38	480	571
	22	Graders	1	8	187	0.41	613	729
	22	Rubber Tired Dozers	1	8	247	0.4	790	940
	22	Tractors/Loaders/Backhoes	3	8	97	0.37	861	1,024
Building Construction	259	Cranes	1	7	231	0.29	469	6,565
	259	Forklifts	3	8	89	0.2	427	5,981
	259	Generator Sets	1	8	84	0.74	497	6,962
	259	Tractors/Loaders/Backhoes	3	7	97	0.37	754	10,552
	259	Welders	1	8	46	0.45	166	2,318
Paving	22	Pavers	2	8	130	0.42	874	1,039
	22	Paving Equipment	2	8	132	0.36	760	904
	22	Rollers	2	8	80	0.38	486	578
Architectural Coating	22	Air Compressors	1	6	78	0.48	225	267
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								42,587

Notes:

(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp. (Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Table 17
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	22	15	14.7	4851	26.38	184
Grading	22	15	14.7	4,851	26.38	184
Building Construction	259	264	14.7	1,005,127	26.38	38,102
Paving	22	15	14.7	4,851	26.38	184
Architectural Coating	22	53	14.7	17,140	26.38	650
Total Construction Worker Fuel Consumption						39,303

Notes:

(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

(2) CalEEMod worker vehicle class is based on an LD_Mix, which, per CalEEMod User's Guide (May 2021), inlcudes LDA, LDT1, and LDT2 at a mix of 50%/25%/25%, respectively.

Table 18
Construction Vendor Fuel Consumption Estimates (MHD & HHDT Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	22	0	6.9	0	6.73	0
Grading	22	0	6.9	0	6.73	0
Building Construction	259	68	6.9	121,523	6.73	18,057
Paving	22	0	6.9	0	6.73	0
Architectural Coating	22	0	6.9	0	6.73	0
Total Construction Vendor Fuel Consumption						18,057

Notes:

(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

(2) CalEEMod vendor vehicle class is based on an HDT_Mix, which, per CalEEMod User's Guide (May 2021), inlcudes HHDT and MHDT at a mix of 50%/50%.

Table 19
Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Total Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	22	16	20	7,040	5.87	1,199
Grading	22	0	20	0	5.87	0
Building Construction	259	0	20	0	5.87	0
Paving	22	0	20	0	5.87	0
Architectural Coating	22	0	20	0	5.87	0
Total Construction Hauling Fuel Consumption						1,199

Notes:
(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

Table 20
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles[2]	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	767	6.9	5292	29.76	177.83	64,909
Light Truck	Automobile	80	6.9	552	28.21	19.57	7,142
Light Truck	Automobile	246	6.9	1697	23.05	73.64	26,879
Medium Truck	Automobile	198	6.9	1366	19.28	70.86	25,864
Light Heavy Truck	2-Axle Truck	39	6.9	269	14.37	18.73	6,835
Light Heavy Truck 10,000 lbs +	2-Axle Truck	10	6.9	69	17.53	3.94	1,437
Medium Heavy Truck	3-Axle Truck	16	16.6	266	7.69	34.54	12,607
Heavy Heavy Truck	4-Axle Truck	25	16.6	415	5.97	69.51	25,373
Total		1,426	--	9,927	18.23	468.62	--
Total Annual Fuel Consumption							171,045

Notes:

(1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Table 21
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year[1,2]
Apartments Low Rise	3,025,100
Health Club[2]	134,460
Subtotal	3,159,560
-existing residential uses to be removed	-113,148
Total	3,046,412

Electricity Demand	kWh/year
Apartments Low Rise	833,990
Health Club[2]	41,257
Parking Lot	57,960
Subtotal	933,207
-existing residential uses to be removed	-31,859
Total	901,349

Notes:
(1) Taken from the CalEEMod 2020.4.0 annual output (Appendix C of this report).
(2) Operations from the 4,159 square foot associated clubhouse.

5. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SCAQMD Rule 403 is required.

No construction mitigation is required.

OPERATIONAL MEASURES

No operational mitigation is required.

6. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.
Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2017 California's 2017 Climate Change Scoping Plan. November.

2021 Historical Air Quality, Top 4 Summary

City of Yucaipa

2015 City of Yucaipa Climate Action Plan. September.
2016 City of Yucaipa General Plan. April.

Ganddini Group, Inc.

2021 Fallbrook Meadows Residential Project Traffic Impact Analysis. September 9.

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC).

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2012 Final 2012 Air Quality Management Plan

2016 2016 Air Quality Management Plan

2021 Historical Data by Year. 2013, 2014 and 2015 Air Quality Data Tables.
Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year

Southern California Association of Governments

2016 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials
(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A Glossary

Appendix B CalEEMod Model Daily Emissions Printouts

Appendix C CalEEMod Model Annual Emissions Printouts And EMFAC Data

APPENDIX A

GLOSSARY

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significance Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

Appendix B

CalEEMod Model Daily Emissions Printouts

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	200.00	Dwelling Unit	1.92	200,000.00	572
Parking Lot	414.00	Space	3.73	165,600.00	0
Health Club	4.16	1000sqft	0.10	4,159.00	0
Other Non-Asphalt Surfaces	2.65	Acre	2.65	115,434.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 8.4 ac w/ 200 MF DU (83,871 sf footprint), parking lot with 414 spaces, 4,159 sf clubhouse, & remainder landcaping, detention basin, & hardscape (~2.65 ac).

Construction Phase - Construction anticipated to begin February 2022 and be completed by end of May 2023.

Grading - Site anticipated to balance.

Demolition - Demolition of 4 existing single-family houses totaling ~3,500 SF.

Vehicle Trips - Per Traffic, 7.32 trips/DU/day. Associated clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits wood burning devices in new developments.

Sequestration - ~70 new trees to be planted.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 200du/8.4ac=23.8 DU/ac. Sidewalks on/connecting off-site. Site is ~0.06 miles north of Omnitrans Rts 308/309 stop County Line at Second. Downtown portion Yucaipa is ~1.89 miles north of site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	230.00	259.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	PhaseEndDate	4/24/2023	5/31/2023
tblConstructionPhase	PhaseEndDate	2/27/2023	3/30/2023
tblConstructionPhase	PhaseEndDate	2/28/2022	3/2/2022
tblConstructionPhase	PhaseEndDate	4/11/2022	4/3/2022
tblConstructionPhase	PhaseEndDate	3/27/2023	5/1/2023
tblConstructionPhase	PhaseStartDate	3/28/2023	5/2/2023
tblConstructionPhase	PhaseStartDate	4/12/2022	4/4/2022
tblConstructionPhase	PhaseStartDate	3/15/2022	3/3/2022
tblConstructionPhase	PhaseStartDate	2/28/2023	3/31/2023
tblFireplaces	NumberGas	170.00	180.00
tblFireplaces	NumberWood	10.00	0.00
tblLandUse	LotAcreage	12.50	1.92
tblSequestration	NumberOfNewTrees	0.00	70.00
tblVehicleTrips	ST_TR	8.14	7.32
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	6.28	7.32
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	10.00	0.00
tblWoodstoves	NumberNoncatalytic	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.9428	25.8588	28.3319	0.0669	7.2503	1.2446	8.1920	3.4692	1.1571	4.3356	0.0000	6,685.6610	6,685.6610	1.0585	0.2703	6,784.2236
2023	62.5882	17.3929	27.2005	0.0655	3.3866	0.7322	4.1188	0.9080	0.6890	1.5970	0.0000	6,557.4585	6,557.4585	0.7176	0.2561	6,651.4488
Maximum	**62.5882**	**25.8588**	**28.3319**	**0.0669**	**7.2503**	**1.2446**	**8.1920**	**3.4692**	**1.1571**	**4.3356**	**0.0000**	**6,685.6610**	**6,685.6610**	**1.0585**	**0.2703**	**6,784.2236**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.9428	25.8588	28.3319	0.0669	3.3866	1.2446	4.2465	1.3801	1.1571	2.2465	0.0000	6,685.6610	6,685.6610	1.0585	0.2703	6,784.2236
2023	62.5882	17.3929	27.2005	0.0655	3.3866	0.7322	4.1188	0.9080	0.6890	1.5970	0.0000	6,557.4585	6,557.4585	0.7176	0.2561	6,651.4488
Maximum	**62.5882**	**25.8588**	**28.3319**	**0.0669**	**3.3866**	**1.2446**	**4.2465**	**1.3801**	**1.1571**	**2.2465**	**0.0000**	**6,685.6610**	**6,685.6610**	**1.0585**	**0.2703**	**6,784.2236**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	36.32	0.00	32.05	47.73	0.00	35.21	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0
Energy	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.418 2	1,018.418 2	0.0195	0.0187	1,024.470 2
Mobile	5.0650	6.5959	49.9215	0.1083	10.5640	0.0824	10.6464	2.8176	0.0772	2.8948		11,146.31 69	11,146.31 69	0.5832	0.5091	11,312.60 44
Total	**10.5257**	**10.5723**	**68.0943**	**0.1333**	**10.5640**	**0.4798**	**11.0438**	**2.8176**	**0.4746**	**3.2922**	**0.0000**	**16,006.30 24**	**16,006.30 24**	**0.7046**	**0.5976**	**16,202.01 36**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0
Energy	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.418 2	1,018.418 2	0.0195	0.0187	1,024.470 2
Mobile	4.0758	4.1358	30.0887	0.0593	5.6702	0.0470	5.7172	1.5123	0.0440	1.5563		6,106.518 8	6,106.518 8	0.3912	0.3174	6,210.889 1
Total	**9.5365**	**8.1123**	**48.2615**	**0.0843**	**5.6702**	**0.4445**	**6.1146**	**1.5123**	**0.4414**	**1.9537**	**0.0000**	**10,966.50 43**	**10,966.50 43**	**0.5126**	**0.4060**	**11,100.29 82**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	9.40	23.27	29.13	36.73	46.33	7.38	44.63	46.33	6.99	40.65	0.00	31.49	31.49	27.26	32.07	31.49

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	3/2/2022	5	22	
2	Grading	Grading	3/3/2022	4/3/2022	5	22	
3	Building Construction	Building Construction	4/4/2022	3/30/2023	5	259	
4	Paving	Paving	3/31/2023	5/1/2023	5	22	
5	Architectural Coating	Architectural Coating	5/2/2023	5/31/2023	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 22

Acres of Paving: 6.38

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 6,239; Non-Residential Outdoor: 2,080; Striped Parking Area: 16,862 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	16.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1566	0.0000	0.1566	0.0237	0.0000	0.0237			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.781 2	3,746.781 2	1.0524		3,773.092 0
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1566**	**1.2427**	**1.3993**	**0.0237**	**1.1553**	**1.1790**		**3,746.781 2**	**3,746.781 2**	**1.0524**		**3,773.092 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7500e-003	0.0991	0.0259	4.3000e-004	0.0127	1.0400e-003	0.0138	3.4900e-003	1.0000e-003	4.4900e-003		46.5793	46.5793	1.9900e-003	7.3800e-003	48.8288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0635	0.0402	0.6179	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		157.4352	157.4352	4.0900e-003	3.9200e-003	158.7050
Total	**0.0663**	**0.1394**	**0.6438**	**1.9800e-003**	**0.1804**	**1.9200e-003**	**0.1823**	**0.0480**	**1.8100e-003**	**0.0498**		**204.0145**	**204.0145**	**6.0800e-003**	**0.0113**	**207.5338**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0611	0.0000	0.0611	9.2500e-003	0.0000	9.2500e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0611**	**1.2427**	**1.3037**	**9.2500e-003**	**1.1553**	**1.1645**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7500e-003	0.0991	0.0259	4.3000e-004	0.0127	1.0400e-003	0.0138	3.4900e-003	1.0000e-003	4.4900e-003		46.5793	46.5793	1.9900e-003	7.3800e-003	48.8288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0635	0.0402	0.6179	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		157.4352	157.4352	4.0900e-003	3.9200e-003	158.7050
Total	**0.0663**	**0.1394**	**0.6438**	**1.9800e-003**	**0.1804**	**1.9200e-003**	**0.1823**	**0.0480**	**1.8100e-003**	**0.0498**		**204.0145**	**204.0145**	**6.0800e-003**	**0.0113**	**207.5338**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0635	0.0402	0.6179	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		157.4352	157.4352	4.0900e-003	3.9200e-003	158.7050
Total	**0.0635**	**0.0402**	**0.6179**	**1.5500e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**157.4352**	**157.4352**	**4.0900e-003**	**3.9200e-003**	**158.7050**

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**2.7622**	**0.9409**	**3.7031**	**1.3357**	**0.8656**	**2.2012**	**0.0000**	**2,872.046 4**	**2,872.046 4**	**0.9289**		**2,895.268 4**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0635	0.0402	0.6179	1.5500e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		157.4352	157.4352	4.0900e-003	3.9200e-003	158.7050
Total	**0.0635**	**0.0402**	**0.6179**	**1.5500e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**157.4352**	**157.4352**	**4.0900e-003**	**3.9200e-003**	**158.7050**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1185	2.9777	1.0928	0.0127	0.4357	0.0354	0.4711	0.1255	0.0339	0.1593		1,360.4681	1,360.4681	0.0368	0.2013	1,421.3826
Worker	1.1181	0.7082	10.8757	0.0272	2.9509	0.0155	2.9664	0.7826	0.0143	0.7969		2,770.8594	2,770.8594	0.0721	0.0690	2,793.2088
Total	**1.2366**	**3.6859**	**11.9685**	**0.0399**	**3.3866**	**0.0509**	**3.4375**	**0.9080**	**0.0482**	**0.9562**		**4,131.3274**	**4,131.3274**	**0.1088**	**0.2703**	**4,214.5914**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1185	2.9777	1.0928	0.0127	0.4357	0.0354	0.4711	0.1255	0.0339	0.1593		1,360.4681	1,360.4681	0.0368	0.2013	1,421.3826
Worker	1.1181	0.7082	10.8757	0.0272	2.9509	0.0155	2.9664	0.7826	0.0143	0.7969		2,770.8594	2,770.8594	0.0721	0.0690	2,793.2088
Total	**1.2366**	**3.6859**	**11.9685**	**0.0399**	**3.3866**	**0.0509**	**3.4375**	**0.9080**	**0.0482**	**0.9562**		**4,131.3274**	**4,131.3274**	**0.1088**	**0.2703**	**4,214.5914**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0796	2.3851	1.0008	0.0122	0.4357	0.0179	0.4536	0.1255	0.0172	0.1426		1,305.0436	1,305.0436	0.0341	0.1927	1,363.3267
Worker	1.0323	0.6229	9.9557	0.0264	2.9509	0.0146	2.9655	0.7826	0.0134	0.7960		2,697.2049	2,697.2049	0.0644	0.0634	2,717.7161
Total	**1.1119**	**3.0080**	**10.9565**	**0.0385**	**3.3866**	**0.0325**	**3.4191**	**0.9080**	**0.0306**	**0.9386**		**4,002.2486**	**4,002.2486**	**0.0985**	**0.2561**	**4,081.0428**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0796	2.3851	1.0008	0.0122	0.4357	0.0179	0.4536	0.1255	0.0172	0.1426		1,305.0436	1,305.0436	0.0341	0.1927	1,363.3267
Worker	1.0323	0.6229	9.9557	0.0264	2.9509	0.0146	2.9655	0.7826	0.0134	0.7960		2,697.2049	2,697.2049	0.0644	0.0634	2,717.7161
Total	**1.1119**	**3.0080**	**10.9565**	**0.0385**	**3.3866**	**0.0325**	**3.4191**	**0.9080**	**0.0306**	**0.9386**		**4,002.2486**	**4,002.2486**	**0.0985**	**0.2561**	**4,081.0428**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.4442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4770**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0587	0.0354	0.5657	1.5000e-003	0.1677	8.3000e-004	0.1685	0.0445	7.6000e-004	0.0452		153.2503	153.2503	3.6600e-003	3.6000e-003	154.4157
Total	**0.0587**	**0.0354**	**0.5657**	**1.5000e-003**	**0.1677**	**8.3000e-004**	**0.1685**	**0.0445**	**7.6000e-004**	**0.0452**		**153.2503**	**153.2503**	**3.6600e-003**	**3.6000e-003**	**154.4157**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.4442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4770**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0587	0.0354	0.5657	1.5000e-003	0.1677	8.3000e-004	0.1685	0.0445	7.6000e-004	0.0452		153.2503	153.2503	3.6600e-003	3.6000e-003	154.4157
Total	**0.0587**	**0.0354**	**0.5657**	**1.5000e-003**	**0.1677**	**8.3000e-004**	**0.1685**	**0.0445**	**7.6000e-004**	**0.0452**		**153.2503**	**153.2503**	**3.6600e-003**	**3.6000e-003**	**154.4157**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**62.3809**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2072	0.1251	1.9987	5.2900e-003	0.5924	2.9300e-003	0.5953	0.1571	2.6900e-003	0.1598		541.4843	541.4843	0.0129	0.0127	545.6021
Total	**0.2072**	**0.1251**	**1.9987**	**5.2900e-003**	**0.5924**	**2.9300e-003**	**0.5953**	**0.1571**	**2.6900e-003**	**0.1598**		**541.4843**	**541.4843**	**0.0129**	**0.0127**	**545.6021**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**62.3809**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2072	0.1251	1.9987	5.2900e-003	0.5924	2.9300e-003	0.5953	0.1571	2.6900e-003	0.1598		541.4843	541.4843	0.0129	0.0127	545.6021
Total	**0.2072**	**0.1251**	**1.9987**	**5.2900e-003**	**0.5924**	**2.9300e-003**	**0.5953**	**0.1571**	**2.6900e-003**	**0.1598**		**541.4843**	**541.4843**	**0.0129**	**0.0127**	**545.6021**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0758	4.1358	30.0887	0.0593	5.6702	0.0470	5.7172	1.5123	0.0440	1.5563		6,106.518 8	6,106.518 8	0.3912	0.3174	6,210.889 1
Unmitigated	5.0650	6.5959	49.9215	0.1083	10.5640	0.0824	10.6464	2.8176	0.0772	2.8948		11,146.31 69	11,146.31 69	0.5832	0.5091	11,312.60 44

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,464.00	1,464.00	1464.00	5,002,710	2,685,187
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,464.00	1,464.00	1,464.00	5,002,710	2,685,187

4.3 Trip Type Information

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Health Club	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Other Non-Asphalt Surfaces	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.4182	1,018.4182	0.0195	0.0187	1,024.4702
NaturalGas Unmitigated	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.4182	1,018.4182	0.0195	0.0187	1,024.4702

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8288.17	0.0894	0.7638	0.3250	4.8800e-003		0.0618	0.0618		0.0618	0.0618		975.0788	975.0788	0.0187	0.0179	980.8732
Health Club	368.385	3.9700e-003	0.0361	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003		43.3394	43.3394	8.3000e-004	7.9000e-004	43.5969
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0934**	**0.7999**	**0.3554**	**5.1000e-003**		**0.0645**	**0.0645**		**0.0645**	**0.0645**		**1,018.4182**	**1,018.4182**	**0.0195**	**0.0187**	**1,024.4702**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8.28817	0.0894	0.7638	0.3250	4.8800e-003		0.0618	0.0618		0.0618	0.0618		975.0788	975.0788	0.0187	0.0179	980.8732
Health Club	0.368385	3.9700e-003	0.0361	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003		43.3394	43.3394	8.3000e-004	7.9000e-004	43.5969
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0934**	**0.7999**	**0.3554**	**5.1000e-003**		**0.0645**	**0.0645**		**0.0645**	**0.0645**		**1,018.4182**	**1,018.4182**	**0.0195**	**0.0187**	**1,024.4702**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.5673	3,841.5673	0.1019	0.0699	3,864.9390
Unmitigated	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.5673	3,841.5673	0.1019	0.0699	3,864.9390

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3494	2.9859	1.2706	0.0191		0.2414	0.2414		0.2414	0.2414	0.0000	3,811.7647	3,811.7647	0.0731	0.0699	3,834.4161
Landscaping	0.5012	0.1906	16.5469	8.7000e-004		0.0915	0.0915		0.0915	0.0915		29.8026	29.8026	0.0288		30.5229
Total	**5.3673**	**3.1765**	**17.8175**	**0.0199**		**0.3329**	**0.3329**		**0.3329**	**0.3329**	**0.0000**	**3,841.5673**	**3,841.5673**	**0.1019**	**0.0699**	**3,864.9390**

6.2 Area by SubCategory

<u>Mitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3494	2.9859	1.2706	0.0191		0.2414	0.2414		0.2414	0.2414	0.0000	3,811.7647	3,811.7647	0.0731	0.0699	3,834.4161
Landscaping	0.5012	0.1906	16.5469	8.7000e-004		0.0915	0.0915		0.0915	0.0915		29.8026	29.8026	0.0288		30.5229
Total	**5.3673**	**3.1765**	**17.8175**	**0.0199**		**0.3329**	**0.3329**		**0.3329**	**0.3329**	**0.0000**	**3,841.5673**	**3,841.5673**	**0.1019**	**0.0699**	**3,864.9390**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	200.00	Dwelling Unit	1.92	200,000.00	572
Parking Lot	414.00	Space	3.73	165,600.00	0
Health Club	4.16	1000sqft	0.10	4,159.00	0
Other Non-Asphalt Surfaces	2.65	Acre	2.65	115,434.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 8.4 ac w/ 200 MF DU (83,871 sf footprint), parking lot with 414 spaces, 4,159 sf clubhouse, & remainder landcaping, detention basin, & hardscape (~2.65 ac).

Construction Phase - Construction anticipated to begin February 2022 and be completed by end of May 2023.

Grading - Site anticipated to balance.

Demolition - Demolition of 4 existing single-family houses totaling ~3,500 SF.

Vehicle Trips - Per Traffic, 7.32 trips/DU/day. Associated clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits wood burning devices in new developments.

Sequestration - ~70 new trees to be planted.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 200du/8.4ac=23.8 DU/ac. Sidewalks on/connecting off-site. Site is ~0.06 miles north of Omnitrans Rts 308/309 stop County Line at Second. Downtown portion Yucaipa is ~1.89 miles north of site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	230.00	259.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	PhaseEndDate	4/24/2023	5/31/2023
tblConstructionPhase	PhaseEndDate	2/27/2023	3/30/2023
tblConstructionPhase	PhaseEndDate	2/28/2022	3/2/2022
tblConstructionPhase	PhaseEndDate	4/11/2022	4/3/2022
tblConstructionPhase	PhaseEndDate	3/27/2023	5/1/2023
tblConstructionPhase	PhaseStartDate	3/28/2023	5/2/2023
tblConstructionPhase	PhaseStartDate	4/12/2022	4/4/2022
tblConstructionPhase	PhaseStartDate	3/15/2022	3/3/2022
tblConstructionPhase	PhaseStartDate	2/28/2023	3/31/2023
tblFireplaces	NumberGas	170.00	180.00
tblFireplaces	NumberWood	10.00	0.00
tblLandUse	LotAcreage	12.50	1.92
tblSequestration	NumberOfNewTrees	0.00	70.00
tblVehicleTrips	ST_TR	8.14	7.32
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	6.28	7.32
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	10.00	0.00
tblWoodstoves	NumberNoncatalytic	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.8942	25.8658	26.4284	0.0643	7.2503	1.2446	8.1920	3.4692	1.1571	4.3356	0.0000	6,425.8573	6,425.8573	1.0585	0.2729	6,525.1807
2023	62.5806	17.5591	25.4698	0.0630	3.3866	0.7323	4.1189	0.9080	0.6891	1.5971	0.0000	6,307.0175	6,307.0175	0.7176	0.2588	6,401.7891
Maximum	**62.5806**	**25.8658**	**26.4284**	**0.0643**	**7.2503**	**1.2446**	**8.1920**	**3.4692**	**1.1571**	**4.3356**	**0.0000**	**6,425.8573**	**6,425.8573**	**1.0585**	**0.2729**	**6,525.1807**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.8942	25.8658	26.4284	0.0643	3.3866	1.2446	4.2466	1.3801	1.1571	2.2465	0.0000	6,425.8573	6,425.8573	1.0585	0.2729	6,525.1807
2023	62.5806	17.5591	25.4698	0.0630	3.3866	0.7323	4.1189	0.9080	0.6891	1.5971	0.0000	6,307.0175	6,307.0175	0.7176	0.2588	6,401.7891
Maximum	**62.5806**	**25.8658**	**26.4284**	**0.0643**	**3.3866**	**1.2446**	**4.2466**	**1.3801**	**1.1571**	**2.2465**	**0.0000**	**6,425.8573**	**6,425.8573**	**1.0585**	**0.2729**	**6,525.1807**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	36.32	0.00	32.05	47.73	0.00	35.21	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0
Energy	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.418 2	1,018.418 2	0.0195	0.0187	1,024.470 2
Mobile	4.4176	7.0035	44.4703	0.1004	10.5640	0.0825	10.6465	2.8176	0.0772	2.8948		10,339.75 17	10,339.75 17	0.5968	0.5220	10,510.21 82
Total	**9.8783**	**10.9799**	**62.6431**	**0.1254**	**10.5640**	**0.4799**	**11.0439**	**2.8176**	**0.4746**	**3.2922**	**0.0000**	**15,199.73 72**	**15,199.73 72**	**0.7182**	**0.6105**	**15,399.62 74**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0
Energy	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.418 2	1,018.418 2	0.0195	0.0187	1,024.470 2
Mobile	3.4471	4.3937	27.6938	0.0551	5.6702	0.0471	5.7173	1.5123	0.0441	1.5564		5,675.712 5	5,675.712 5	0.4109	0.3261	5,783.166 7
Total	**8.9078**	**8.3701**	**45.8666**	**0.0801**	**5.6702**	**0.4445**	**6.1147**	**1.5123**	**0.4415**	**1.9538**	**0.0000**	**10,535.69 80**	**10,535.69 80**	**0.5323**	**0.4147**	**10,672.57 58**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	9.82	23.77	26.78	36.11	46.33	7.37	44.63	46.33	6.99	40.65	0.00	30.68	30.68	25.89	32.08	30.70

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	3/2/2022	5	22	
2	Grading	Grading	3/3/2022	4/3/2022	5	22	
3	Building Construction	Building Construction	4/4/2022	3/30/2023	5	259	
4	Paving	Paving	3/31/2023	5/1/2023	5	22	
5	Architectural Coating	Architectural Coating	5/2/2023	5/31/2023	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 22

Acres of Paving: 6.38

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 6,239; Non-Residential Outdoor: 2,080; Striped Parking Area: 16,862 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	16.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1566	0.0000	0.1566	0.0237	0.0000	0.0237			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1566**	**1.2427**	**1.3993**	**0.0237**	**1.1553**	**1.1790**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6400e-003	0.1041	0.0265	4.3000e-004	0.0127	1.0400e-003	0.0138	3.4900e-003	1.0000e-003	4.4900e-003		46.6141	46.6141	1.9900e-003	7.3900e-003	48.8651
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0423	0.5076	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		142.5884	142.5884	4.0800e-003	4.0400e-003	143.8959
Total	**0.0637**	**0.1464**	**0.5341**	**1.8300e-003**	**0.1804**	**1.9200e-003**	**0.1823**	**0.0480**	**1.8100e-003**	**0.0498**		**189.2024**	**189.2024**	**6.0700e-003**	**0.0114**	**192.7609**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0611	0.0000	0.0611	9.2500e-003	0.0000	9.2500e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0611**	**1.2427**	**1.3037**	**9.2500e-003**	**1.1553**	**1.1645**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6400e-003	0.1041	0.0265	4.3000e-004	0.0127	1.0400e-003	0.0138	3.4900e-003	1.0000e-003	4.4900e-003		46.6141	46.6141	1.9900e-003	7.3900e-003	48.8651
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0423	0.5076	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		142.5884	142.5884	4.0800e-003	4.0400e-003	143.8959
Total	**0.0637**	**0.1464**	**0.5341**	**1.8300e-003**	**0.1804**	**1.9200e-003**	**0.1823**	**0.0480**	**1.8100e-003**	**0.0498**		**189.2024**	**189.2024**	**6.0700e-003**	**0.0114**	**192.7609**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.046 4**	**2,872.046 4**	**0.9289**		**2,895.268 4**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0423	0.5076	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		142.5884	142.5884	4.0800e-003	4.0400e-003	143.8959
Total	**0.0610**	**0.0423**	**0.5076**	**1.4000e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**142.5884**	**142.5884**	**4.0800e-003**	**4.0400e-003**	**143.8959**

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**2.7622**	**0.9409**	**3.7031**	**1.3357**	**0.8656**	**2.2012**	**0.0000**	**2,872.046 4**	**2,872.046 4**	**0.9289**		**2,895.268 4**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0610	0.0423	0.5076	1.4000e-003	0.1677	8.8000e-004	0.1685	0.0445	8.1000e-004	0.0453		142.5884	142.5884	4.0800e-003	4.0400e-003	143.8959
Total	**0.0610**	**0.0423**	**0.5076**	**1.4000e-003**	**0.1677**	**8.8000e-004**	**0.1685**	**0.0445**	**8.1000e-004**	**0.0453**		**142.5884**	**142.5884**	**4.0800e-003**	**4.0400e-003**	**143.8959**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1139	3.1260	1.1313	0.0127	0.4357	0.0355	0.4712	0.1255	0.0340	0.1595		1,361.9687	1,361.9687	0.0365	0.2017	1,422.9816
Worker	1.0741	0.7449	8.9337	0.0247	2.9509	0.0155	2.9664	0.7826	0.0143	0.7969		2,509.5550	2,509.5550	0.0719	0.0712	2,532.5669
Total	**1.1880**	**3.8708**	**10.0650**	**0.0374**	**3.3866**	**0.0510**	**3.4376**	**0.9080**	**0.0483**	**0.9563**		**3,871.5237**	**3,871.5237**	**0.1084**	**0.2729**	**3,955.5485**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1139	3.1260	1.1313	0.0127	0.4357	0.0355	0.4712	0.1255	0.0340	0.1595		1,361.9687	1,361.9687	0.0365	0.2017	1,422.9816
Worker	1.0741	0.7449	8.9337	0.0247	2.9509	0.0155	2.9664	0.7826	0.0143	0.7969		2,509.5550	2,509.5550	0.0719	0.0712	2,532.5669
Total	**1.1880**	**3.8708**	**10.0650**	**0.0374**	**3.3866**	**0.0510**	**3.4376**	**0.9080**	**0.0483**	**0.9563**		**3,871.5237**	**3,871.5237**	**0.1084**	**0.2729**	**3,955.5485**

19403 Fallbrook Meadows Residential Project - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0741	2.5193	1.0317	0.0122	0.4357	0.0180	0.4537	0.1255	0.0172	0.1427		1,308.2085	1,308.2085	0.0338	0.1933	1,366.6631
Worker	0.9944	0.6549	8.1941	0.0239	2.9509	0.0146	2.9655	0.7826	0.0134	0.7960		2,443.5991	2,443.5991	0.0645	0.0655	2,464.7199
Total	**1.0684**	**3.1743**	**9.2258**	**0.0361**	**3.3866**	**0.0326**	**3.4191**	**0.9080**	**0.0306**	**0.9387**		**3,751.8076**	**3,751.8076**	**0.0983**	**0.2588**	**3,831.3830**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0741	2.5193	1.0317	0.0122	0.4357	0.0180	0.4537	0.1255	0.0172	0.1427		1,308.2085	1,308.2085	0.0338	0.1933	1,366.6631
Worker	0.9944	0.6549	8.1941	0.0239	2.9509	0.0146	2.9655	0.7826	0.0134	0.7960		2,443.5991	2,443.5991	0.0645	0.0655	2,464.7199
Total	**1.0684**	**3.1743**	**9.2258**	**0.0361**	**3.3866**	**0.0326**	**3.4191**	**0.9080**	**0.0306**	**0.9387**		**3,751.8076**	**3,751.8076**	**0.0983**	**0.2588**	**3,831.3830**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.4442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4770**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0565	0.0372	0.4656	1.3600e-003	0.1677	8.3000e-004	0.1685	0.0445	7.6000e-004	0.0452		138.8409	138.8409	3.6600e-003	3.7200e-003	140.0409
Total	**0.0565**	**0.0372**	**0.4656**	**1.3600e-003**	**0.1677**	**8.3000e-004**	**0.1685**	**0.0445**	**7.6000e-004**	**0.0452**		**138.8409**	**138.8409**	**3.6600e-003**	**3.7200e-003**	**140.0409**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.4442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4770**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0565	0.0372	0.4656	1.3600e-003	0.1677	8.3000e-004	0.1685	0.0445	7.6000e-004	0.0452		138.8409	138.8409	3.6600e-003	3.7200e-003	140.0409
Total	**0.0565**	**0.0372**	**0.4656**	**1.3600e-003**	**0.1677**	**8.3000e-004**	**0.1685**	**0.0445**	**7.6000e-004**	**0.0452**		**138.8409**	**138.8409**	**3.6600e-003**	**3.7200e-003**	**140.0409**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**62.3809**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1996	0.1315	1.6450	4.7900e-003	0.5924	2.9300e-003	0.5953	0.1571	2.6900e-003	0.1598		490.5710	490.5710	0.0130	0.0131	494.8112
Total	**0.1996**	**0.1315**	**1.6450**	**4.7900e-003**	**0.5924**	**2.9300e-003**	**0.5953**	**0.1571**	**2.6900e-003**	**0.1598**		**490.5710**	**490.5710**	**0.0130**	**0.0131**	**494.8112**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1893					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**62.3809**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1996	0.1315	1.6450	4.7900e-003	0.5924	2.9300e-003	0.5953	0.1571	2.6900e-003	0.1598		490.5710	490.5710	0.0130	0.0131	494.8112
Total	**0.1996**	**0.1315**	**1.6450**	**4.7900e-003**	**0.5924**	**2.9300e-003**	**0.5953**	**0.1571**	**2.6900e-003**	**0.1598**		**490.5710**	**490.5710**	**0.0130**	**0.0131**	**494.8112**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4471	4.3937	27.6938	0.0551	5.6702	0.0471	5.7173	1.5123	0.0441	1.5564		5,675.712 5	5,675.712 5	0.4109	0.3261	5,783.166 7
Unmitigated	4.4176	7.0035	44.4703	0.1004	10.5640	0.0825	10.6465	2.8176	0.0772	2.8948		10,339.75 17	10,339.75 17	0.5968	0.5220	10,510.21 82

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,464.00	1,464.00	1464.00	5,002,710	2,685,187
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,464.00	1,464.00	1,464.00	5,002,710	2,685,187

4.3 Trip Type Information

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Health Club	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Other Non-Asphalt Surfaces	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.4182	1,018.4182	0.0195	0.0187	1,024.4702
NaturalGas Unmitigated	0.0934	0.7999	0.3554	5.0900e-003		0.0645	0.0645		0.0645	0.0645		1,018.4182	1,018.4182	0.0195	0.0187	1,024.4702

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8288.17	0.0894	0.7638	0.3250	4.8800e-003		0.0618	0.0618		0.0618	0.0618		975.0788	975.0788	0.0187	0.0179	980.8732
Health Club	368.385	3.9700e-003	0.0361	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003		43.3394	43.3394	8.3000e-004	7.9000e-004	43.5969
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0934**	**0.7999**	**0.3554**	**5.1000e-003**		**0.0645**	**0.0645**		**0.0645**	**0.0645**		**1,018.4182**	**1,018.4182**	**0.0195**	**0.0187**	**1,024.4702**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8.28817	0.0894	0.7638	0.3250	4.8800e-003		0.0618	0.0618		0.0618	0.0618		975.0788	975.0788	0.0187	0.0179	980.8732
Health Club	0.368385	3.9700e-003	0.0361	0.0303	2.2000e-004		2.7400e-003	2.7400e-003		2.7400e-003	2.7400e-003		43.3394	43.3394	8.3000e-004	7.9000e-004	43.5969
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0934**	**0.7999**	**0.3554**	**5.1000e-003**		**0.0645**	**0.0645**		**0.0645**	**0.0645**		**1,018.4182**	**1,018.4182**	**0.0195**	**0.0187**	**1,024.4702**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0
Unmitigated	5.3673	3.1765	17.8175	0.0199		0.3329	0.3329		0.3329	0.3329	0.0000	3,841.567 3	3,841.567 3	0.1019	0.0699	3,864.939 0

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3494	2.9859	1.2706	0.0191		0.2414	0.2414		0.2414	0.2414	0.0000	3,811.764 7	3,811.764 7	0.0731	0.0699	3,834.416 1
Landscaping	0.5012	0.1906	16.5469	8.7000e-004		0.0915	0.0915		0.0915	0.0915		29.8026	29.8026	0.0288		30.5229
Total	**5.3673**	**3.1765**	**17.8175**	**0.0199**		**0.3329**	**0.3329**		**0.3329**	**0.3329**	**0.0000**	**3,841.567 3**	**3,841.567 3**	**0.1019**	**0.0699**	**3,864.939 0**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1419					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3494	2.9859	1.2706	0.0191		0.2414	0.2414		0.2414	0.2414	0.0000	3,811.7647	3,811.7647	0.0731	0.0699	3,834.4161
Landscaping	0.5012	0.1906	16.5469	8.7000e-004		0.0915	0.0915		0.0915	0.0915		29.8026	29.8026	0.0288		30.5229
Total	**5.3673**	**3.1765**	**17.8175**	**0.0199**		**0.3329**	**0.3329**		**0.3329**	**0.3329**	**0.0000**	**3,841.5673**	**3,841.5673**	**0.1019**	**0.0699**	**3,864.9390**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	4.00	Dwelling Unit	8.40	3,500.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - OPERATIONAL ANALYS ONLY - existing uses to be removed

Land Use - 4 existing single-family residential uses totaling ~3,500 square feet to be demolished. Site is a total of 8.4 ac.

Vehicle Trips - Per Traffic, 9.44 trips/DU/day for the existing SF uses to be demolished.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	7,200.00	3,500.00
tblLandUse	LotAcreage	1.30	8.40
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	9.44

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19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Energy	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Mobile	0.1384	0.1958	1.3705	2.8900e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4000e-003	0.0751		296.3782	296.3782	0.0159	0.0139	300.9155
Total	**1.2752**	**0.3111**	**3.7472**	**8.2800e-003**	**0.2725**	**0.3123**	**0.5848**	**0.0727**	**0.3121**	**0.3848**	**37.4677**	**405.4422**	**442.9099**	**0.1289**	**0.0171**	**451.2295**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Energy	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Mobile	0.1384	0.1958	1.3705	2.8900e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4000e-003	0.0751		296.3782	296.3782	0.0159	0.0139	300.9155
Total	**1.2752**	**0.3111**	**3.7472**	**8.2800e-003**	**0.2725**	**0.3123**	**0.5848**	**0.0727**	**0.3121**	**0.3848**	**37.4677**	**405.4422**	**442.9099**	**0.1289**	**0.0171**	**451.2295**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1384	0.1958	1.3705	2.8900e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4000e-003	0.0751		296.3782	296.3782	0.0159	0.0139	300.9155
Unmitigated	0.1384	0.1958	1.3705	2.8900e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4000e-003	0.0751		296.3782	296.3782	0.0159	0.0139	300.9155

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	37.76	37.76	37.76	129,032	129,032
Total	37.76	37.76	37.76	129,032	129,032

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.534251	0.055593	0.171990	0.141576	0.027719	0.007281	0.011628	0.017336	0.000569	0.000257	0.025522	0.000954	0.005323

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19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
NaturalGas Unmitigated	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	309.994	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Total		**3.3400e-003**	**0.0286**	**0.0122**	**1.8000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**		**36.4699**	**36.4699**	**7.0000e-004**	**6.7000e-004**	**36.6866**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.309994	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Total		**3.3400e-003**	**0.0286**	**0.0122**	**1.8000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**		**36.4699**	**36.4699**	**7.0000e-004**	**6.7000e-004**	**36.6866**

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Unmitigated	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.0481	0.0830	2.0342	5.1900e-003		0.3056	0.3056		0.3056	0.3056	37.4677	72.0000	109.4677	0.1117	2.5400e-003	113.0189
Landscaping	9.9800e-003	3.8100e-003	0.3304	2.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003		0.5942	0.5942	5.7000e-004		0.6085
Total	**1.1334**	**0.0868**	**2.3646**	**5.2100e-003**		**0.3074**	**0.3074**		**0.3074**	**0.3074**	**37.4677**	**72.5942**	**110.0619**	**0.1123**	**2.5400e-003**	**113.6274**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.0481	0.0830	2.0342	5.1900e-003		0.3056	0.3056		0.3056	0.3056	37.4677	72.0000	109.4677	0.1117	2.5400e-003	113.0189
Landscaping	9.9800e-003	3.8100e-003	0.3304	2.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003		0.5942	0.5942	5.7000e-004		0.6085
Total	**1.1334**	**0.0868**	**2.3646**	**5.2100e-003**		**0.3074**	**0.3074**		**0.3074**	**0.3074**	**37.4677**	**72.5942**	**110.0619**	**0.1123**	**2.5400e-003**	**113.6274**

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	4.00	Dwelling Unit	8.40	3,500.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - OPERATIONAL ANALYS ONLY - existing uses to be removed

Land Use - 4 existing single-family residential uses totaling ~3,500 square feet to be demolished. Site is a total of 8.4 ac.

Vehicle Trips - Per Traffic, 9.44 trips/DU/day for the existing SF uses to be demolished.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	7,200.00	3,500.00
tblLandUse	LotAcreage	1.30	8.40
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	9.44

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Energy	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Mobile	0.1209	0.2073	1.2173	2.6800e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4100e-003	0.0751		274.9206	274.9206	0.0163	0.0142	279.5705
Total	**1.2577**	**0.3227**	**3.5940**	**8.0700e-003**	**0.2725**	**0.3123**	**0.5848**	**0.0727**	**0.3121**	**0.3848**	**37.4677**	**383.9846**	**421.4523**	**0.1293**	**0.0175**	**429.8845**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Energy	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Mobile	0.1209	0.2073	1.2173	2.6800e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4100e-003	0.0751		274.9206	274.9206	0.0163	0.0142	279.5705
Total	**1.2577**	**0.3227**	**3.5940**	**8.0700e-003**	**0.2725**	**0.3123**	**0.5848**	**0.0727**	**0.3121**	**0.3848**	**37.4677**	**383.9846**	**421.4523**	**0.1293**	**0.0175**	**429.8845**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1209	0.2073	1.2173	2.6800e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4100e-003	0.0751		274.9206	274.9206	0.0163	0.0142	279.5705
Unmitigated	0.1209	0.2073	1.2173	2.6800e-003	0.2725	2.5600e-003	0.2751	0.0727	2.4100e-003	0.0751		274.9206	274.9206	0.0163	0.0142	279.5705

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	37.76	37.76	37.76	129,032	129,032
Total	37.76	37.76	37.76	129,032	129,032

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.534251	0.055593	0.171990	0.141576	0.027719	0.007281	0.011628	0.017336	0.000569	0.000257	0.025522	0.000954	0.005323

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
NaturalGas Unmitigated	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	309.994	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Total		**3.3400e-003**	**0.0286**	**0.0122**	**1.8000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**		**36.4699**	**36.4699**	**7.0000e-004**	**6.7000e-004**	**36.6866**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.309994	3.3400e-003	0.0286	0.0122	1.8000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003		36.4699	36.4699	7.0000e-004	6.7000e-004	36.6866
Total		**3.3400e-003**	**0.0286**	**0.0122**	**1.8000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**		**36.4699**	**36.4699**	**7.0000e-004**	**6.7000e-004**	**36.6866**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274
Unmitigated	1.1334	0.0868	2.3646	5.2100e-003		0.3074	0.3074		0.3074	0.3074	37.4677	72.5942	110.0619	0.1123	2.5400e-003	113.6274

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.0481	0.0830	2.0342	5.1900e-003		0.3056	0.3056		0.3056	0.3056	37.4677	72.0000	109.4677	0.1117	2.5400e-003	113.0189
Landscaping	9.9800e-003	3.8100e-003	0.3304	2.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003		0.5942	0.5942	5.7000e-004		0.6085
Total	**1.1334**	**0.0868**	**2.3646**	**5.2100e-003**		**0.3074**	**0.3074**		**0.3074**	**0.3074**	**37.4677**	**72.5942**	**110.0619**	**0.1123**	**2.5400e-003**	**113.6274**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.0481	0.0830	2.0342	5.1900e-003		0.3056	0.3056		0.3056	0.3056	37.4677	72.0000	109.4677	0.1117	2.5400e-003	113.0189
Landscaping	9.9800e-003	3.8100e-003	0.3304	2.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003		0.5942	0.5942	5.7000e-004		0.6085
Total	**1.1334**	**0.0868**	**2.3646**	**5.2100e-003**		**0.3074**	**0.3074**		**0.3074**	**0.3074**	**37.4677**	**72.5942**	**110.0619**	**0.1123**	**2.5400e-003**	**113.6274**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

CALEEMOD MODEL ANNUAL EMISSIONS PRINTOUTS AND EMFAC DATA

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	200.00	Dwelling Unit	1.92	200,000.00	572
Parking Lot	414.00	Space	3.73	165,600.00	0
Health Club	4.16	1000sqft	0.10	4,159.00	0
Other Non-Asphalt Surfaces	2.65	Acre	2.65	115,434.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 8.4 ac w/ 200 MF DU (83,871 sf footprint), parking lot with 414 spaces, 4,159 sf clubhouse, & remainder landcaping, detention basin, & hardscape (~2.65 ac).

Construction Phase - Construction anticipated to begin February 2022 and be completed by end of May 2023.

Grading - Site anticipated to balance.

Demolition - Demolition of 4 existing single-family houses totaling ~3,500 SF.

Vehicle Trips - Per Traffic, 7.32 trips/DU/day. Associated clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits wood burning devices in new developments.

Sequestration - ~70 new trees to be planted.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 200du/8.4ac=23.8 DU/ac. Sidewalks on/connecting off-site. Site is ~0.06 miles north of Omnitrans Rts 308/309 stop County Line at Second. Downtown portion Yucaipa is ~1.89 miles north of site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	230.00	259.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	PhaseEndDate	4/24/2023	5/31/2023
tblConstructionPhase	PhaseEndDate	2/27/2023	3/30/2023
tblConstructionPhase	PhaseEndDate	2/28/2022	3/2/2022
tblConstructionPhase	PhaseEndDate	4/11/2022	4/3/2022
tblConstructionPhase	PhaseEndDate	3/27/2023	5/1/2023
tblConstructionPhase	PhaseStartDate	3/28/2023	5/2/2023
tblConstructionPhase	PhaseStartDate	4/12/2022	4/4/2022
tblConstructionPhase	PhaseStartDate	3/15/2022	3/3/2022
tblConstructionPhase	PhaseStartDate	2/28/2023	3/31/2023
tblFireplaces	NumberGas	170.00	180.00
tblFireplaces	NumberWood	10.00	0.00
tblLandUse	LotAcreage	12.50	1.92
tblSequestration	NumberOfNewTrees	0.00	70.00
tblVehicleTrips	ST_TR	8.14	7.32
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	6.28	7.32
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	10.00	0.00
tblWoodstoves	NumberNoncatalytic	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3264	2.4185	3.0236	7.1100e-003	0.4074	0.1079	0.5153	0.1260	0.1012	0.2271	0.0000	642.1300	642.1300	0.0837	0.0245	651.5210
2023	0.7873	0.6910	1.0319	2.3800e-003	0.1146	0.0299	0.1444	0.0307	0.0280	0.0588	0.0000	215.6904	215.6904	0.0280	7.7400e-003	218.6971
Maximum	**0.7873**	**2.4185**	**3.0236**	**7.1100e-003**	**0.4074**	**0.1079**	**0.5153**	**0.1260**	**0.1012**	**0.2271**	**0.0000**	**642.1300**	**642.1300**	**0.0837**	**0.0245**	**651.5210**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3264	2.4185	3.0236	7.1100e-003	0.3589	0.1079	0.4668	0.1028	0.1012	0.2040	0.0000	642.1296	642.1296	0.0837	0.0245	651.5207
2023	0.7873	0.6910	1.0319	2.3800e-003	0.1146	0.0299	0.1444	0.0307	0.0280	0.0588	0.0000	215.6903	215.6903	0.0280	7.7400e-003	218.6969
Maximum	**0.7873**	**2.4185**	**3.0236**	**7.1100e-003**	**0.3589**	**0.1079**	**0.4668**	**0.1028**	**0.1012**	**0.2040**	**0.0000**	**642.1296**	**642.1296**	**0.0837**	**0.0245**	**651.5207**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	9.30	0.01	7.36	14.77	0.00	8.09	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-1-2022	4-30-2022	0.7824	0.7824
2	5-1-2022	7-31-2022	0.7309	0.7309
3	8-1-2022	10-31-2022	0.7324	0.7324
4	11-1-2022	1-31-2023	0.7112	0.7112
5	2-1-2023	4-30-2023	0.5487	0.5487
6	5-1-2023	7-31-2023	0.6901	0.6901
		Highest	0.7824	0.7824

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8913	0.0612	2.0842	3.5000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	46.6042	46.6042	4.1000e-003	7.9000e-004	46.9428
Energy	0.0170	0.1460	0.0649	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	334.1107	334.1107	0.0172	4.7800e-003	335.9665
Mobile	0.7979	1.3015	8.4347	0.0185	1.8864	0.0150	1.9014	0.5039	0.0140	0.5179	0.0000	1,730.6187	1,730.6187	0.0996	0.0874	1,759.1533
Waste						0.0000	0.0000		0.0000	0.0000	23.4881	0.0000	23.4881	1.3881	0.0000	58.1907
Water						0.0000	0.0000		0.0000	0.0000	4.2121	47.1424	51.3546	0.4366	0.0107	65.4576
Total	**1.7063**	**1.5086**	**10.5838**	**0.0198**	**1.8864**	**0.0412**	**1.9276**	**0.5039**	**0.0403**	**0.5442**	**27.7002**	**2,158.4761**	**2,186.1763**	**1.9456**	**0.1037**	**2,265.7108**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8913	0.0612	2.0842	3.5000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	46.6042	46.6042	4.1000e-003	7.9000e-004	46.9428
Energy	0.0170	0.1460	0.0649	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	334.1107	334.1107	0.0172	4.7800e-003	335.9665
Mobile	0.6180	0.8126	5.2336	0.0102	1.0125	8.5600e-003	1.0211	0.2705	8.0000e-003	0.2785	0.0000	949.5824	949.5824	0.0685	0.0545	967.5331
Waste						0.0000	0.0000		0.0000	0.0000	5.8720	0.0000	5.8720	0.3470	0.0000	14.5477
Water						0.0000	0.0000		0.0000	0.0000	3.3697	41.0106	44.3803	0.3496	8.5900e-003	55.6797
Total	**1.5264**	**1.0197**	**7.3827**	**0.0114**	**1.0125**	**0.0348**	**1.0473**	**0.2705**	**0.0342**	**0.3047**	**9.2417**	**1,371.3080**	**1,380.5497**	**0.7864**	**0.0687**	**1,420.6698**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.54**	**32.41**	**30.25**	**42.22**	**46.33**	**15.60**	**45.67**	**46.32**	**14.98**	**44.01**	**66.64**	**36.47**	**36.85**	**59.58**	**33.78**	**37.30**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	49.5600
Total	**49.5600**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	3/2/2022	5	22	
2	Grading	Grading	3/3/2022	4/3/2022	5	22	
3	Building Construction	Building Construction	4/4/2022	3/30/2023	5	259	
4	Paving	Paving	3/31/2023	5/1/2023	5	22	
5	Architectural Coating	Architectural Coating	5/2/2023	5/31/2023	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 22

Acres of Paving: 6.38

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 6,239; Non-Residential Outdoor: 2,080; Striped Parking Area: 16,862 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	16.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7200e-003	0.0000	1.7200e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3893	37.3893	0.0105	0.0000	37.6518
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**	**1.7200e-003**	**0.0137**	**0.0154**	**2.6000e-004**	**0.0127**	**0.0130**	**0.0000**	**37.3893**	**37.3893**	**0.0105**	**0.0000**	**37.6518**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1500e-003	2.9000e-004	0.0000	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4650	0.4650	2.0000e-005	7.0000e-005	0.4874
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	**6.5000e-004**	**1.6400e-003**	**6.1400e-003**	**2.0000e-005**	**1.9500e-003**	**2.0000e-005**	**1.9700e-003**	**5.2000e-004**	**2.0000e-005**	**5.4000e-004**	**0.0000**	**1.9162**	**1.9162**	**6.0000e-005**	**1.1000e-004**	**1.9521**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.7000e-004	0.0000	6.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0290	0.2829	0.2265	4.3000e-004		0.0137	0.0137		0.0127	0.0127	0.0000	37.3892	37.3892	0.0105	0.0000	37.6518
Total	**0.0290**	**0.2829**	**0.2265**	**4.3000e-004**	**6.7000e-004**	**0.0137**	**0.0143**	**1.0000e-004**	**0.0127**	**0.0128**	**0.0000**	**37.3892**	**37.3892**	**0.0105**	**0.0000**	**37.6518**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1500e-003	2.9000e-004	0.0000	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4650	0.4650	2.0000e-005	7.0000e-005	0.4874
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	**6.5000e-004**	**1.6400e-003**	**6.1400e-003**	**2.0000e-005**	**1.9500e-003**	**2.0000e-005**	**1.9700e-003**	**5.2000e-004**	**2.0000e-005**	**5.4000e-004**	**0.0000**	**1.9162**	**1.9162**	**6.0000e-005**	**1.1000e-004**	**1.9521**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0779	0.0000	0.0779	0.0377	0.0000	0.0377	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.2294	0.1680	3.3000e-004		0.0104	0.0104		9.5200e-003	9.5200e-003	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8920
Total	**0.0214**	**0.2294**	**0.1680**	**3.3000e-004**	**0.0779**	**0.0104**	**0.0883**	**0.0377**	**9.5200e-003**	**0.0472**	**0.0000**	**28.6602**	**28.6602**	**9.2700e-003**	**0.0000**	**28.8920**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	**6.2000e-004**	**4.9000e-004**	**5.8500e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4512**	**1.4512**	**4.0000e-005**	**4.0000e-005**	**1.4647**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0304	0.0000	0.0304	0.0147	0.0000	0.0147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.2294	0.1680	3.3000e-004		0.0104	0.0104		9.5200e-003	9.5200e-003	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8919
Total	**0.0214**	**0.2294**	**0.1680**	**3.3000e-004**	**0.0304**	**0.0104**	**0.0407**	**0.0147**	**9.5200e-003**	**0.0242**	**0.0000**	**28.6602**	**28.6602**	**9.2700e-003**	**0.0000**	**28.8919**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	**6.2000e-004**	**4.9000e-004**	**5.8500e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4512**	**1.4512**	**4.0000e-005**	**4.0000e-005**	**1.4647**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9321	225.9321	0.0541	0.0000	227.2853
Total	**0.1664**	**1.5225**	**1.5954**	**2.6300e-003**		**0.0789**	**0.0789**		**0.0742**	**0.0742**	**0.0000**	**225.9321**	**225.9321**	**0.0541**	**0.0000**	**227.2853**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.3054	0.1083	1.2400e-003	0.0418	3.4600e-003	0.0453	0.0121	3.3100e-003	0.0154	0.0000	120.3901	120.3901	3.2400e-003	0.0178	125.7843
Worker	0.0970	0.0762	0.9134	2.4500e-003	0.2822	1.5100e-003	0.2837	0.0750	1.3900e-003	0.0764	0.0000	226.3909	226.3909	6.4500e-003	6.5100e-003	228.4908
Total	**0.1083**	**0.3816**	**1.0217**	**3.6900e-003**	**0.3240**	**4.9700e-003**	**0.3290**	**0.0870**	**4.7000e-003**	**0.0917**	**0.0000**	**346.7810**	**346.7810**	**9.6900e-003**	**0.0243**	**354.2752**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1664	1.5225	1.5954	2.6300e-003		0.0789	0.0789		0.0742	0.0742	0.0000	225.9318	225.9318	0.0541	0.0000	227.2850
Total	**0.1664**	**1.5225**	**1.5954**	**2.6300e-003**		**0.0789**	**0.0789**		**0.0742**	**0.0742**	**0.0000**	**225.9318**	**225.9318**	**0.0541**	**0.0000**	**227.2850**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.3054	0.1083	1.2400e-003	0.0418	3.4600e-003	0.0453	0.0121	3.3100e-003	0.0154	0.0000	120.3901	120.3901	3.2400e-003	0.0178	125.7843
Worker	0.0970	0.0762	0.9134	2.4500e-003	0.2822	1.5100e-003	0.2837	0.0750	1.3900e-003	0.0764	0.0000	226.3909	226.3909	6.4500e-003	6.5100e-003	228.4908
Total	**0.1083**	**0.3816**	**1.0217**	**3.6900e-003**	**0.3240**	**4.9700e-003**	**0.3290**	**0.0870**	**4.7000e-003**	**0.0917**	**0.0000**	**346.7810**	**346.7810**	**9.6900e-003**	**0.0243**	**354.2752**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0503	0.4603	0.5198	8.6000e-004		0.0224	0.0224		0.0211	0.0211	0.0000	74.1775	74.1775	0.0177	0.0000	74.6187
Total	**0.0503**	**0.4603**	**0.5198**	**8.6000e-004**		**0.0224**	**0.0224**		**0.0211**	**0.0211**	**0.0000**	**74.1775**	**74.1775**	**0.0177**	**0.0000**	**74.6187**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4500e-003	0.0803	0.0325	3.9000e-004	0.0137	5.7000e-004	0.0143	3.9600e-003	5.5000e-004	4.5100e-003	0.0000	37.9240	37.9240	9.9000e-004	5.6000e-003	39.6188
Worker	0.0294	0.0220	0.2749	7.8000e-004	0.0926	4.7000e-004	0.0931	0.0246	4.3000e-004	0.0250	0.0000	72.3452	72.3452	1.9000e-003	1.9600e-003	72.9776
Total	**0.0319**	**0.1023**	**0.3074**	**1.1700e-003**	**0.1064**	**1.0400e-003**	**0.1074**	**0.0286**	**9.8000e-004**	**0.0295**	**0.0000**	**110.2692**	**110.2692**	**2.8900e-003**	**7.5600e-003**	**112.5964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0503	0.4603	0.5198	8.6000e-004		0.0224	0.0224		0.0211	0.0211	0.0000	74.1774	74.1774	0.0177	0.0000	74.6186
Total	**0.0503**	**0.4603**	**0.5198**	**8.6000e-004**		**0.0224**	**0.0224**		**0.0211**	**0.0211**	**0.0000**	**74.1774**	**74.1774**	**0.0177**	**0.0000**	**74.6186**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4500e-003	0.0803	0.0325	3.9000e-004	0.0137	5.7000e-004	0.0143	3.9600e-003	5.5000e-004	4.5100e-003	0.0000	37.9240	37.9240	9.9000e-004	5.6000e-003	39.6188
Worker	0.0294	0.0220	0.2749	7.8000e-004	0.0926	4.7000e-004	0.0931	0.0246	4.3000e-004	0.0250	0.0000	72.3452	72.3452	1.9000e-003	1.9600e-003	72.9776
Total	**0.0319**	**0.1023**	**0.3074**	**1.1700e-003**	**0.1064**	**1.0400e-003**	**0.1074**	**0.0286**	**9.8000e-004**	**0.0295**	**0.0000**	**110.2692**	**110.2692**	**2.8900e-003**	**7.5600e-003**	**112.5964**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1121	0.1604	2.5000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	22.0296	22.0296	7.1200e-003	0.0000	22.2077
Paving	4.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0163**	**0.1121**	**0.1604**	**2.5000e-004**		**5.6100e-003**	**5.6100e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**22.0296**	**22.0296**	**7.1200e-003**	**0.0000**	**22.2077**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.3000e-004	5.3700e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4130	1.4130	4.0000e-005	4.0000e-005	1.4253
Total	**5.7000e-004**	**4.3000e-004**	**5.3700e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4130**	**1.4130**	**4.0000e-005**	**4.0000e-005**	**1.4253**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1121	0.1604	2.5000e-004		5.6100e-003	5.6100e-003		5.1600e-003	5.1600e-003	0.0000	22.0295	22.0295	7.1200e-003	0.0000	22.2077
Paving	4.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0163**	**0.1121**	**0.1604**	**2.5000e-004**		**5.6100e-003**	**5.6100e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**22.0295**	**22.0295**	**7.1200e-003**	**0.0000**	**22.2077**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.3000e-004	5.3700e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4130	1.4130	4.0000e-005	4.0000e-005	1.4253
Total	**5.7000e-004**	**4.3000e-004**	**5.3700e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4130**	**1.4130**	**4.0000e-005**	**4.0000e-005**	**1.4253**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0143	0.0199	3.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	2.8086	2.8086	1.7000e-004	0.0000	2.8128
Total	**0.6862**	**0.0143**	**0.0199**	**3.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.7000e-004**	**0.0000**	**2.8128**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0300e-003	1.5200e-003	0.0190	5.0000e-005	6.3900e-003	3.0000e-005	6.4200e-003	1.7000e-003	3.0000e-005	1.7300e-003	0.0000	4.9926	4.9926	1.3000e-004	1.4000e-004	5.0362
Total	**2.0300e-003**	**1.5200e-003**	**0.0190**	**5.0000e-005**	**6.3900e-003**	**3.0000e-005**	**6.4200e-003**	**1.7000e-003**	**3.0000e-005**	**1.7300e-003**	**0.0000**	**4.9926**	**4.9926**	**1.3000e-004**	**1.4000e-004**	**5.0362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0143	0.0199	3.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	2.8086	2.8086	1.7000e-004	0.0000	2.8128
Total	**0.6862**	**0.0143**	**0.0199**	**3.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.7000e-004**	**0.0000**	**2.8128**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0300e-003	1.5200e-003	0.0190	5.0000e-005	6.3900e-003	3.0000e-005	6.4200e-003	1.7000e-003	3.0000e-005	1.7300e-003	0.0000	4.9926	4.9926	1.3000e-004	1.4000e-004	5.0362
Total	**2.0300e-003**	**1.5200e-003**	**0.0190**	**5.0000e-005**	**6.3900e-003**	**3.0000e-005**	**6.4200e-003**	**1.7000e-003**	**3.0000e-005**	**1.7300e-003**	**0.0000**	**4.9926**	**4.9926**	**1.3000e-004**	**1.4000e-004**	**5.0362**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6180	0.8126	5.2336	0.0102	1.0125	8.5600e-003	1.0211	0.2705	8.0000e-003	0.2785	0.0000	949.5824	949.5824	0.0685	0.0545	967.5331
Unmitigated	0.7979	1.3015	8.4347	0.0185	1.8864	0.0150	1.9014	0.5039	0.0140	0.5179	0.0000	1,730.6187	1,730.6187	0.0996	0.0874	1,759.1533

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,464.00	1,464.00	1464.00	5,002,710	2,685,187
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,464.00	1,464.00	1,464.00	5,002,710	2,685,187

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Health Club	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Other Non-Asphalt Surfaces	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	165.5002	165.5002	0.0140	1.6900e-003	166.3539
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	165.5002	165.5002	0.0140	1.6900e-003	166.3539
NaturalGas Mitigated	0.0170	0.1460	0.0649	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	168.6106	168.6106	3.2300e-003	3.0900e-003	169.6125
NaturalGas Unmitigated	0.0170	0.1460	0.0649	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	168.6106	168.6106	3.2300e-003	3.0900e-003	169.6125

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.02518e+006	0.0163	0.1394	0.0593	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.4352	161.4352	3.0900e-003	2.9600e-003	162.3946
Health Club	134460	7.3000e-004	6.5900e-003	5.5400e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1753	7.1753	1.4000e-004	1.3000e-004	7.2180
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0170**	**0.1460**	**0.0649**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**168.6106**	**168.6106**	**3.2300e-003**	**3.0900e-003**	**169.6125**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.02518e+006	0.0163	0.1394	0.0593	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.4352	161.4352	3.0900e-003	2.9600e-003	162.3946
Health Club	134460	7.3000e-004	6.5900e-003	5.5400e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1753	7.1753	1.4000e-004	1.3000e-004	7.2180
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0170**	**0.1460**	**0.0649**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**168.6106**	**168.6106**	**3.2300e-003**	**3.0900e-003**	**169.6125**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	833990	147.9044	0.0125	1.5100e-003	148.6674
Health Club	41257.3	7.3168	6.2000e-004	7.0000e-005	7.3545
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	57960	10.2790	8.7000e-004	1.1000e-004	10.3320
Total		**165.5002**	**0.0140**	**1.6900e-003**	**166.3539**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	833990	147.9044	0.0125	1.5100e-003	148.6674
Health Club	41257.3	7.3168	6.2000e-004	7.0000e-005	7.3545
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	57960	10.2790	8.7000e-004	1.1000e-004	10.3320
Total		**165.5002**	**0.0140**	**1.6900e-003**	**166.3539**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8913	0.0612	2.0842	3.5000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	46.6042	46.6042	4.1000e-003	7.9000e-004	46.9428
Unmitigated	0.8913	0.0612	2.0842	3.5000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	46.6042	46.6042	4.1000e-003	7.9000e-004	46.9428

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0684					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7559					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3700e-003	0.0373	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2247	43.2247	8.3000e-004	7.9000e-004	43.4816
Landscaping	0.0627	0.0238	2.0684	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3796	3.3796	3.2700e-003	0.0000	3.4612
Total	**0.8913**	**0.0612**	**2.0842**	**3.5000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**46.6042**	**46.6042**	**4.1000e-003**	**7.9000e-004**	**46.9428**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0684					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7559					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3700e-003	0.0373	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2247	43.2247	8.3000e-004	7.9000e-004	43.4816
Landscaping	0.0627	0.0238	2.0684	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3796	3.3796	3.2700e-003	0.0000	3.4612
Total	**0.8913**	**0.0612**	**2.0842**	**3.5000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**46.6042**	**46.6042**	**4.1000e-003**	**7.9000e-004**	**46.9428**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	44.3803	0.3496	8.5900e-003	55.6797
Unmitigated	51.3546	0.4366	0.0107	65.4576

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Low Rise	13.0308 / 8.21507	50.4113	0.4285	0.0105	64.2529
Health Club	0.246035 / 0.150796	0.9433	8.0900e-003	2.0000e-004	1.2046
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**51.3546**	**0.4366**	**0.0107**	**65.4576**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	10.4246 / 8.21507	43.5663	0.3431	8.4300e-003	54.6563
Health Club	0.196828 / 0.150796	0.8141	6.4800e-003	1.6000e-004	1.0234
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**44.3803**	**0.3496**	**8.5900e-003**	**55.6797**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.8720	0.3470	0.0000	14.5477
Unmitigated	23.4881	1.3881	0.0000	58.1907

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	92	18.6752	1.1037	0.0000	46.2669
Health Club	23.71	4.8129	0.2844	0.0000	11.9238
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**23.4881**	**1.3881**	**0.0000**	**58.1907**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	11.5667
Health Club	5.9275	1.2032	0.0711	0.0000	2.9810
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**5.8720**	**0.3470**	**0.0000**	**14.5477**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	49.5600	0.0000	0.0000	49.5600

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	70	49.5600	0.0000	0.0000	49.5600
Total		**49.5600**	**0.0000**	**0.0000**	**49.5600**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

19403 Fallbrook Meadows Residential Project - EXISTING USES - OPERATIONAL ANALYSIS ONLY

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	4.00	Dwelling Unit	8.40	3,500.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - OPERATIONAL ANALYS ONLY - existing uses to be removed

Land Use - 4 existing single-family residential uses totaling ~3,500 square feet to be demolished. Site is a total of 8.4 ac.

Vehicle Trips - Per Traffic, 9.44 trips/DU/day for the existing SF uses to be demolished.

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	7,200.00	3,500.00
tblLandUse	LotAcreage	1.30	8.40
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	9.44

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2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0281	1.5100e-003	0.0667	7.0000e-005		4.0500e-003	4.0500e-003		4.0500e-003	4.0500e-003	0.4249	0.8839	1.3087	1.3300e-003	3.0000e-005	1.3506
Energy	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	11.6880	11.6880	5.9000e-004	1.7000e-004	11.7530
Mobile	0.0218	0.0386	0.2310	4.9000e-004	0.0487	4.7000e-004	0.0491	0.0130	4.4000e-004	0.0134	0.0000	46.0175	46.0175	2.7100e-003	2.3900e-003	46.7963
Waste						0.0000	0.0000		0.0000	0.0000	0.9155	0.0000	0.9155	0.0541	0.0000	2.2681
Water						0.0000	0.0000		0.0000	0.0000	0.0827	0.9255	1.0082	8.5700e-003	2.1000e-004	1.2851
Total	**0.0505**	**0.0453**	**0.2999**	**5.9000e-004**	**0.0487**	**4.9400e-003**	**0.0536**	**0.0130**	**4.9100e-003**	**0.0179**	**1.4231**	**59.5149**	**60.9379**	**0.0673**	**2.8000e-003**	**63.4531**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0281	1.5100e-003	0.0667	7.0000e-005		4.0500e-003	4.0500e-003		4.0500e-003	4.0500e-003	0.4249	0.8839	1.3087	1.3300e-003	3.0000e-005	1.3506
Energy	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	11.6880	11.6880	5.9000e-004	1.7000e-004	11.7530
Mobile	0.0218	0.0386	0.2310	4.9000e-004	0.0487	4.7000e-004	0.0491	0.0130	4.4000e-004	0.0134	0.0000	46.0175	46.0175	2.7100e-003	2.3900e-003	46.7963
Waste						0.0000	0.0000		0.0000	0.0000	0.9155	0.0000	0.9155	0.0541	0.0000	2.2681
Water						0.0000	0.0000		0.0000	0.0000	0.0827	0.9255	1.0082	8.5700e-003	2.1000e-004	1.2851
Total	**0.0505**	**0.0453**	**0.2999**	**5.9000e-004**	**0.0487**	**4.9400e-003**	**0.0536**	**0.0130**	**4.9100e-003**	**0.0179**	**1.4231**	**59.5149**	**60.9379**	**0.0673**	**2.8000e-003**	**63.4531**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0218	0.0386	0.2310	4.9000e-004	0.0487	4.7000e-004	0.0491	0.0130	4.4000e-004	0.0134	0.0000	46.0175	46.0175	2.7100e-003	2.3900e-003	46.7963
Unmitigated	0.0218	0.0386	0.2310	4.9000e-004	0.0487	4.7000e-004	0.0491	0.0130	4.4000e-004	0.0134	0.0000	46.0175	46.0175	2.7100e-003	2.3900e-003	46.7963

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	37.76	37.76	37.76	129,032	129,032
Total	37.76	37.76	37.76	129,032	129,032

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.534251	0.055593	0.171990	0.141576	0.027719	0.007281	0.011628	0.017336	0.000569	0.000257	0.025522	0.000954	0.005323

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.6500	5.6500	4.8000e-004	6.0000e-005	5.6791
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.6500	5.6500	4.8000e-004	6.0000e-005	5.6791
NaturalGas Mitigated	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	6.0380	6.0380	1.2000e-004	1.1000e-004	6.0739
NaturalGas Unmitigated	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	6.0380	6.0380	1.2000e-004	1.1000e-004	6.0739

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	113148	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	6.0380	6.0380	1.2000e-004	1.1000e-004	6.0739
Total		**6.1000e-004**	**5.2100e-003**	**2.2200e-003**	**3.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**6.0380**	**6.0380**	**1.2000e-004**	**1.1000e-004**	**6.0739**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	113148	6.1000e-004	5.2100e-003	2.2200e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	6.0380	6.0380	1.2000e-004	1.1000e-004	6.0739
Total		**6.1000e-004**	**5.2100e-003**	**2.2200e-003**	**3.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**6.0380**	**6.0380**	**1.2000e-004**	**1.1000e-004**	**6.0739**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	31858.6	5.6500	4.8000e-004	6.0000e-005	5.6791
Total		**5.6500**	**4.8000e-004**	**6.0000e-005**	**5.6791**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	31858.6	5.6500	4.8000e-004	6.0000e-005	5.6791
Total		**5.6500**	**4.8000e-004**	**6.0000e-005**	**5.6791**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0281	1.5100e-003	0.0667	7.0000e-005		4.0500e-003	4.0500e-003		4.0500e-003	4.0500e-003	0.4249	0.8839	1.3087	1.3300e-003	3.0000e-005	1.3506
Unmitigated	0.0281	1.5100e-003	0.0667	7.0000e-005		4.0500e-003	4.0500e-003		4.0500e-003	4.0500e-003	0.4249	0.8839	1.3087	1.3300e-003	3.0000e-005	1.3506

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0131	1.0400e-003	0.0254	6.0000e-005		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.4249	0.8165	1.2413	1.2700e-003	3.0000e-005	1.2816
Landscaping	1.2500e-003	4.8000e-004	0.0413	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	0.0674	0.0674	7.0000e-005	0.0000	0.0690
Total	**0.0281**	**1.5200e-003**	**0.0667**	**6.0000e-005**		**4.0500e-003**	**4.0500e-003**		**4.0500e-003**	**4.0500e-003**	**0.4249**	**0.8839**	**1.3087**	**1.3400e-003**	**3.0000e-005**	**1.3506**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0131	1.0400e-003	0.0254	6.0000e-005		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.4249	0.8165	1.2413	1.2700e-003	3.0000e-005	1.2816
Landscaping	1.2500e-003	4.8000e-004	0.0413	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	0.0674	0.0674	7.0000e-005	0.0000	0.0690
Total	**0.0281**	**1.5200e-003**	**0.0667**	**6.0000e-005**		**4.0500e-003**	**4.0500e-003**		**4.0500e-003**	**4.0500e-003**	**0.4249**	**0.8839**	**1.3087**	**1.3400e-003**	**3.0000e-005**	**1.3506**

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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.0082	8.5700e-003	2.1000e-004	1.2851
Unmitigated	1.0082	8.5700e-003	2.1000e-004	1.2851

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.260616 / 0.164301	1.0082	8.5700e-003	2.1000e-004	1.2851
Total		**1.0082**	**8.5700e-003**	**2.1000e-004**	**1.2851**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.260616 / 0.164301	1.0082	8.5700e-003	2.1000e-004	1.2851
Total		**1.0082**	**8.5700e-003**	**2.1000e-004**	**1.2851**

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8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.9155	0.0541	0.0000	2.2681
Unmitigated	0.9155	0.0541	0.0000	2.2681

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	4.51	0.9155	0.0541	0.0000	2.2681
Total		**0.9155**	**0.0541**	**0.0000**	**2.2681**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	4.51	0.9155	0.0541	0.0000	2.2681
Total		**0.9155**	**0.0541**	**0.0000**	**2.2681**

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9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2022	HHDT	Aggregate	Aggregate	Gasoline	93.77521787	1876.254559	0	1.271766939	1271.766939	1998484.407	4872.85011	11739264.89	**5.87**	**HHDT**
South Coast	2022	HHDT	Aggregate	Aggregate	Diesel	86344.61493	1308488.279	0	1883.165573	1883165.573		11080949.98			
South Coast	2022	HHDT	Aggregate	Aggregate	Natural Gas	9530.013799	64445.55712	0	114.0470669	114047.0669		653442.0558			
South Coast	2022	LDA	Aggregate	Aggregate	Gasoline	5432984.929	25333114.49	0	7742.158581	7742158.581	7863292.337	217937990	233491817.2	**29.69**	**LDA**
South Coast	2022	LDA	Aggregate	Aggregate	Diesel	16596.66266	70061.62945	0	12.98213336	12982.13336		525055.9524			
South Coast	2022	LDA	Aggregate	Aggregate	Electricity	204269.3588	1027049.78	3533212.262	0	0		9151442.882			
South Coast	2022	LDA	Aggregate	Aggregate	Plug-in Hybrid	123066.1719	508878.6208	856005.7326	108.1516236	108151.6236		5877328.413			
South Coast	2022	LDT1	Aggregate	Aggregate	Gasoline	508118.9525	2234897.36	0	772.6742907	772674.2907	773091.3918	18186231.22	18233327.62	**23.58**	**LDT1**
South Coast	2022	LDT1	Aggregate	Aggregate	Diesel	219.3543012	650.4955004	0	0.181276274	181.2762739		4217.627426			
South Coast	2022	LDT1	Aggregate	Aggregate	Electricity	860.4090968	3929.280026	11231.02673	0	0		29089.70421			
South Coast	2022	LDT1	Aggregate	Aggregate	Plug-in Hybrid	262.0628223	1083.62977	2172.476691	0.2358249	235.8249004		13789.07098			
South Coast	2022	LDT2	Aggregate	Aggregate	Gasoline	2380478.996	11180656.67	0	4304.779926	4304779.926	4326812.467	97358601.17	97676672.01	**22.57**	**LDT2**
South Coast	2022	LDT2	Aggregate	Aggregate	Diesel	7265.359325	35160.20236	0	10.4792726	10479.2726		318070.8386			
South Coast	2022	LDT2	Aggregate	Aggregate	Electricity	6619.441536	34120.34272	95194.32476	0	0		246564.7012			
South Coast	2022	LDT2	Aggregate	Aggregate	Plug-in Hybrid	12770.05734	52804.18709	99473.18925	11.55326881	11553.26881		651602.4969			
South Coast	2022	LHDT1	Aggregate	Aggregate	Gasoline	200207.0512	2982786.755	0	596.2532604	596253.2604	791494.8201	7670055.089	11609061.87	**14.67**	**LHDT1**
South Coast	2022	LHDT1	Aggregate	Aggregate	Diesel	95425.65716	1200334.722	0	195.2415597	195241.5597		3939006.782			
South Coast	2022	LHDT2	Aggregate	Aggregate	Gasoline	31310.70271	466482.8175	0	100.8426005	100842.6005	201968.3332	1148331.498	2852151.512	**14.12**	**LHDT2**
South Coast	2022	LHDT2	Aggregate	Aggregate	Diesel	41221.34914	518512.7157	0	101.1257327	101125.7327		1703820.013			
South Coast	2022	MCY	Aggregate	Aggregate	Gasoline	232866.3127	465732.6253	0	36.03993715	36039.93715	36039.93715	1478622.183	1478622.183	**41.03**	**MCY**
South Coast	2022	MDV	Aggregate	Aggregate	Gasoline	1546490.389	7140651.876	0	3192.182291	3192182.291	3233168.731	58964077.19	60366385.9	**18.67**	**MDV**
South Coast	2022	MDV	Aggregate	Aggregate	Diesel	19342.84345	91596.79576	0	34.03297982	34032.97982		777527.7955			
South Coast	2022	MDV	Aggregate	Aggregate	Electricity	6696.74782	34502.63749	96159.45426	0	0		249064.5022			
South Coast	2022	MDV	Aggregate	Aggregate	Plug-in Hybrid	8117.761373	33566.94328	55475.93063	6.953460429	6953.460429		375716.4182			
South Coast	2022	MH	Aggregate	Aggregate	Gasoline	31850.36852	3186.310866	0	60.85222666	60852.22666	71928.89964	295792.8678	407742.3745	**5.67**	**MH**
South Coast	2022	MH	Aggregate	Aggregate	Diesel	11356.53565	1135.653565	0	11.07667298	11076.67298		111949.5066			
South Coast	2022	MHDT	Aggregate	Aggregate	Gasoline	26007.04178	520348.8919	0	274.1467882	274146.7882	819392.7308	1387695.111	6218651.542	**7.59**	**MHDT**
South Coast	2022	MHDT	Aggregate	Aggregate	Diesel	111240.7041	1363402.45	0	537.3888811	537388.8811		4766318.794			
South Coast	2022	MHDT	Aggregate	Aggregate	Natural Gas	1338.762023	12270.86005	0	7.857061417	7857.061417		64637.63673			
South Coast	2022	OBUS	Aggregate	Aggregate	Gasoline	5619.001977	112424.9916	0	46.10429672	46104.29672	82591.31041	229489.8627	490521.1159	**5.94**	**OBUS**
South Coast	2022	OBUS	Aggregate	Aggregate	Diesel	2896.768075	36743.40436	0	32.79511564	32795.11564		229036.0369			
South Coast	2022	OBUS	Aggregate	Aggregate	Natural Gas	537.7361163	4785.851435	0	3.691898056	3691.898056		31995.21632			
South Coast	2022	SBUS	Aggregate	Aggregate	Gasoline	2656.068282	10624.27313	0	13.13398403	13133.98403	40315.41184	115961.1562	260029.2373	**6.45**	**SBUS**
South Coast	2022	SBUS	Aggregate	Aggregate	Diesel	3463.174133	50146.76145	0	9.812107071	9812.107071		71631.6642			
South Coast	2022	SBUS	Aggregate	Aggregate	Natural Gas	2857.078854	41370.50181	0	17.36932074	17369.32074		72436.41685			
South Coast	2022	UBUS	Aggregate	Aggregate	Gasoline	892.5609011	3570.243605	0	14.15154342	14151.54342	205291.0561	96764.45551	693436.26	**3.38**	**UBUS**
South Coast	2022	UBUS	Aggregate	Aggregate	Diesel	15.79905129	63.19620517	0	0.277029151	277.0291511		1863.133553			
South Coast	2022	UBUS	Aggregate	Aggregate	Electricity	58.06621632	232.2648653	5333.126445	0	0		2542.871299			
South Coast	2022	UBUS	Aggregate	Aggregate	Natural Gas	4946.181814	19784.72726	0	190.8624835	190862.4835		592265.7996			

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2023	HHDT	Aggregate	Aggregate	Gasoline	77.76705152	1555.963167	0	1.13577086	1135.77086	1902570.073	4463.059823	11350616.67	**5.97**	**HHDT**
South Coast	2023	HHDT	Aggregate	Aggregate	Diesel	88939.48335	1354183.938	0	1901.434302	1901434.302		11341687.62			
South Coast	2023	HHDT	Aggregate	Aggregate	Electricity	69.55210742	1090.269168	7969.44745	0	0		4465.990707			
South Coast	2023	HHDT	Aggregate	Aggregate	Natural Gas	9734.51825	62334.09461	0	108.4243363	108424.3363	7680508.917	635905.4264	228542169.3	**29.76**	**LDA**
South Coast	2023	LDA	Aggregate	Aggregate	Gasoline	5370115.979	25014254.84	0	7560.140191	7560140.191		216250190.4			
South Coast	2023	LDA	Aggregate	Aggregate	Diesel	15648.45784	65526.69936	0	11.94439033	11944.39033		486634.8854			
South Coast	2023	LDA	Aggregate	Aggregate	Electricity	241152.5368	1208859.723	4312325.17	0	0		11169438.62			
South Coast	2023	LDA	Aggregate	Aggregate	Plug-in Hybrid	136333.5236	563739.1202	971420.6342	116.5989322	116598.9322	870253.2499	6496196.814	24547955.06	**28.21**	**LDT1**
South Coast	2023	LDT1	Aggregate	Aggregate	Gasoline	499113.9009	2195668.394	0	753.4930394	753493.0394		18009866.74			
South Coast	2023	LDT1	Aggregate	Aggregate	Diesel	197.6298759	575.4909742	0	0.161278255	161.278255		3756.265001			
South Coast	2023	LDT1	Aggregate	Aggregate	Electricity	1012.723437	4715.252993	14723.34847	0	0		38135.23576			
South Coast	2023	LDT1	Aggregate	Aggregate	Plug-in Hybrid	463.9603347	1918.475984	3964.563568	0.400339089	400.3390888	4351441.574	24314.99018	100316975.8	**23.05**	**LDT2**
South Coast	2023	LDT2	Aggregate	Aggregate	Gasoline	2429950.117	11422828.59	0	4340.074795	4340074.795		100292660.9			
South Coast	2023	LDT2	Aggregate	Aggregate	Diesel	7734.815855	37335.71589	0	10.96643985	10966.43985		337920.5463			
South Coast	2023	LDT2	Aggregate	Aggregate	Electricity	11160.73812	57317.98395	159502.5609	0	0		413130.7341			
South Coast	2023	LDT2	Aggregate	Aggregate	Plug-in Hybrid	17128.65814	70827.00142	136848.0138	14.88755019	14887.55019	604831.9262	867992.1123	8688662.767	**14.37**	**LHDT1**
South Coast	2023	LHDT1	Aggregate	Aggregate	Gasoline	200398.3929	2985637.46	0	589.944376	589944.376		7820670.654			
South Coast	2023	LHDT1	Aggregate	Aggregate	Diesel	99896.36028	1256570.543	0	206.0356758	206035.6758	305180.3742	4194656.56	5351327.632	**17.53**	**LHDT2**
South Coast	2023	LHDT2	Aggregate	Aggregate	Gasoline	31213.47663	465034.2937	0	99.14469838	99144.69838		1156671.072			
South Coast	2023	LHDT2	Aggregate	Aggregate	Diesel	43691.53059	549584.4908	0	107.1632097	107163.2097	107163.2097	1828609.129	1828609.129	**17.06**	**MCY**
South Coast	2023	MCY	Aggregate	Aggregate	Gasoline	237586.076	475172.1521	0	36.88140998	36881.40998	3258846.142	1522726.619	62822547.87	**19.28**	**MDV**
South Coast	2023	MDV	Aggregate	Aggregate	Gasoline	1559902.035	7210563.701	0	3188.051046	3188051.046		60070040.07			
South Coast	2023	MDV	Aggregate	Aggregate	Diesel	19613.50466	92462.53217	0	33.91368569	33913.68569		784655.9403			
South Coast	2023	MDV	Aggregate	Aggregate	Electricity	12017.75416	61732.39119	171855.0799	0	0		445125.2375			
South Coast	2023	MDV	Aggregate	Aggregate	Plug-in Hybrid	10053.44096	41570.97836	70940.44124	8.322835871	8322.835871	67468.7074	464374.4805	752062.2021	**11.15**	**MH**
South Coast	2023	MH	Aggregate	Aggregate	Gasoline	30468.55432	3048.074174	0	59.14587153	59145.87153		287687.7216			
South Coast	2023	MH	Aggregate	Aggregate	Diesel	11533.11741	1153.311741	0	11.30112611	11301.12611	819648.6117	114141.8155	6302753.398	**7.69**	**MHDT**
South Coast	2023	MHDT	Aggregate	Aggregate	Gasoline	25436.77287	508938.9517	0	266.1846594	266184.6594		1361855.942			
South Coast	2023	MHDT	Aggregate	Aggregate	Diesel	112753.1691	1384256.954	0	542.1628262	542162.8262		4826755.64			
South Coast	2023	MHDT	Aggregate	Aggregate	Electricity	60.14211345	769.7741807	1354.591964	0	0	52048.54694	1295.841104	289973.7428	**5.57**	**OBUS**
South Coast	2023	MHDT	Aggregate	Aggregate	Natural Gas	1405.746156	12603.45034	0	8.268140472	8268.140472		68507.0989			
South Coast	2023	OBUS	Aggregate	Aggregate	Gasoline	5457.340752	109190.4738	0	43.78040647	43780.40647		220170.8028			
South Coast	2023	OBUS	Aggregate	Aggregate	Diesel	2949.128306	37294.91051	0	33.32983706	33329.83706	50038.16004	233227.1381	381057.5339	**7.62**	**SBUS**
South Coast	2023	OBUS	Aggregate	Aggregate	Natural Gas	467.0036657	4156.332625	0	3.280062265	3280.062265		28665.48863			
South Coast	2023	SBUS	Aggregate	Aggregate	Gasoline	2711.533402	10846.13361	0	13.42826072	13428.26072		119164.9071			
South Coast	2023	SBUS	Aggregate	Aggregate	Diesel	3377.128927	48900.82686	0	9.464602039	9464.602039	41441.52119	69271.73995	241028.6401	**5.82**	**UBUS**
South Coast	2023	SBUS	Aggregate	Aggregate	Electricity	3.674682915	53.20940862	49.36713892	0	0		42.69400814			
South Coast	2023	SBUS	Aggregate	Aggregate	Natural Gas	2976.329163	43097.24627	0	17.80624767	17806.24767		74753.64709			
South Coast	2023	UBUS	Aggregate	Aggregate	Gasoline	894.3697717	3577.479087	0	14.17067148	14170.67148		96960.55907			
South Coast	2023	UBUS	Aggregate	Aggregate	Diesel	14.61165815	58.44663261	0	0.262644403			1749.021883			
South Coast	2023	UBUS	Aggregate	Aggregate	Electricity	58.03212573	232.1285029	5326.224873	0			2539.586791			
South Coast	2023	UBUS	Aggregate	Aggregate	Natural Gas	4957.576963	19830.30785	0	190.2775974			593592.4153			

GANDDINI GROUP INC.

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CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

MEMORANDUM

Date: March 22, 2022
From: Bai "Tom" Tang, Principal, CRM TECH
To: Ivano Stamegna, President, Nova Homes Inc.
Subject: Cultural Resources Studies Coverage of the Fallbrook Meadows Project Area, City of Yucaipa (Case No. 21-085; CRM TECH Contract No. 3346B)

Dear Ivano:

I am writing to provide you with a summary of cultural resources study coverage to date of the property referenced above, which consists of a total of 8.39 acres in Assessor's Parcel Numbers (APN) 0319-253-28, 0319-253-29, 0319-253-30, and 0319-253-84, located to the north of County Line Road and between Second Street and Third Street in the City of Yucaipa, San Bernardino County, California (Figure 1). The purpose of this memorandum is ultimately to present to the City of Yucaipa, the lead agency for the Fallbrook Meadows Project, with the necessary information to complete the cultural resources compliance process under provisions of the California Environmental Quality Act (CEQA).

As you know, most of the project area, approximately eight acres in total (Figure 1), was covered by a standard Phase I cultural resources study that our firm completed in 2018 for what was then proposed as a 64-unit condominium development (see Attachment A). During the course of the study, three significantly altered circa 1946-1952 residences at 13644, 13662, and 13682 Second Street and the remnants of concrete foundations left by demolished buildings of late 1950s vintage were noted in that portion of the project area but were not formally recorded due to the lack of potential for historic significance (see Attachment A, pp. 12-13). Ultimately, no "historical resources," as defined by CEQA, were identified within the project boundaries.

The northwestern corner of APN 0319-253-84, occupied by a 1950s residence at 13649 Third Street, was not a part of the condominium project at the time (Figure 1). Therefore, that portion of the project area was not included in our study. Since the completion of the 2018 survey, the Fallbrook Meadows Project has been reconfigured to be a gated 200-unit apartment complex, and the northwestern corner of APN 0319-253-84 has been added to the project area, with the residence at 13649 Third Street slated for demolition like the three residences surveyed in 2018.

In a recent review of the environmental documentation for the Fallbrook Meadows Project, the City of Yucaipa requested that the residence at 13649 Third Street be recorded and evaluated for historic significance, and this work has been completed by Steven C. Maurer of the Yucaipa Historical Society (see Attachment B). Based on his field observations and historical background research, Mr. Maurer has concluded that the residence does not appear eligible for listing in the California Register of Historical Resources or the National Register of Historic Places (see Attachment B, p. 2). Therefore, it does not meet the statutory definition of a "historical resource" for CEQA-compliance purposes, pursuant to Title 14 CCR §15064.5(a)(1)-(3).

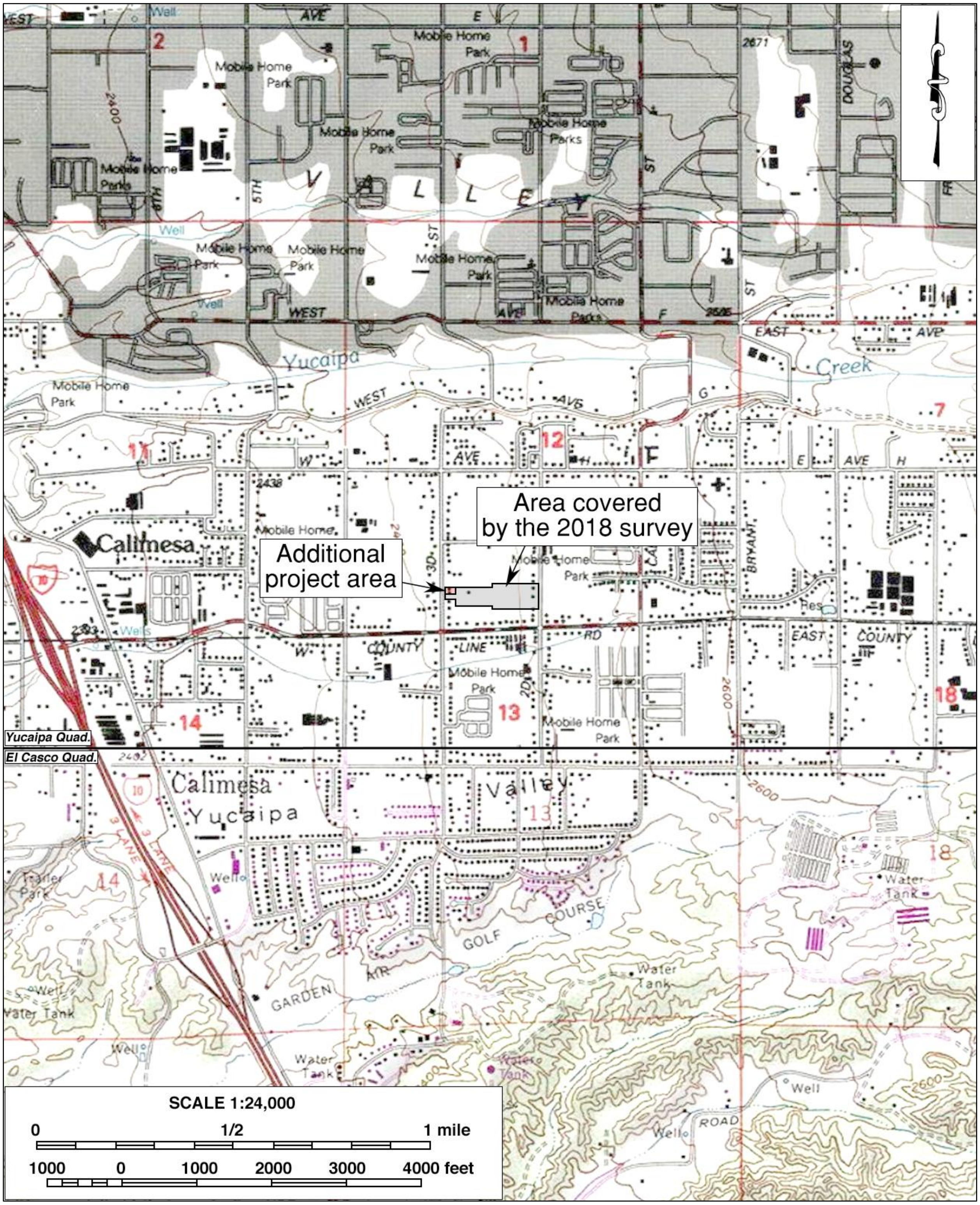

Figure 1. Original project area surveyed in 2018 and additional project area. (Based on USGS El Casco and Yucaipa, Calif., 7.5' quadrangles, 1979/1996 editions)

Having been occupied by the residence since 1952 (see Attachment B, p. 2) and used for agriculture for many decades prior to that, according to historical aerial photographs, the portion of APN 0319-253-84 added to the project area is relatively low in sensitivity for archaeological resources from the prehistoric or early historic period. In light of the combined results of our 2018 survey and Mr. Maurer's recent building evaluation, we conclude that the original finding for the Fallbrook Meadows Project—that it would not cause a substantial adverse change to any known "historical resources"—remains valid and appropriate despite the changes in development plans and the project boundary.

As stated in the 2018 study, in response to Native American (specifically the San Manuel Band of Mission Indians) input received at the time, we recommend that the City of Yucaipa consider implementing extended Phase I subsurface testing through the excavation of shovel test pits and/or backhoe trenches, in lieu of future archaeological or Native American monitoring, to ascertain the sensitivity of the project area for subsurface archaeological deposits of prehistoric origin. In addition, if any subsurface cultural materials are encountered during earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Thank you for this opportunity to be of service. If you have any questions or need further information regarding the issues addressed in this memorandum, please do not hesitate to contact me at (909) 824-6400 or ttang@crmtech.us.

Sincerely,

Bai "Tom" Tang, M.A.

CULTURAL RESOURCES SURVEY REPORT FROM 2018

By CRM TECH

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

TENTATIVE TRACT MAP NUMBER 20031

Fallbrook Meadows Project, City of Yucaipa
San Bernardino County, California

For Submittal to:

Planning Services
City of Yucaipa
34272 Yucaipa Boulevard
Yucaipa, CA 92399

Prepared for:

Nova Homes, Inc.
1232 Village Way, Suite A
Santa Ana, CA 92705

Prepared by:

CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

June 19, 2018
CRM TECH Contract 3346

Title: Historical/Archaeological Resources Survey Report: Tentative Tract Map Number 20031, Fallbrook Meadows Project, City of Yucaipa, San Bernardino County, California

Author(s): Bai "Tom" Tang, Principal Investigator
Terri Jacquemain, Historian/Architectural Historian
Daniel Ballester, Archaeologist/Field Director

Consulting Firm: CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Date: June 19, 2018

For Submittal to: Planning Services
City of Yucaipa
550 East 6th Street
Beaumont, CA 92223
(909) 797-2489

Prepared for: Tom Mungari
Nova Homes, Inc.
1232 Village Way, Suite A
Santa Ana, CA 92705
(714) 540-1144

USGS Quadrangle: Yucaipa, Calif., 7.5' quadrangle; Section 12, T2S R2W, San Bernardino Baseline and Meridian

Project Size: Approximately eight acres

Keywords: Yucaipa Valley area; Phase I historical/archaeological resources survey; Assessor's Parcel Numbers 0319-253-28, 0319-253-29, 0319-253-30, and a portion of 0319-253-84; altered residences at 13644, 13662, and 13682 Second Street, circa 1946-1952; no "historical resources" under CEQA

EXECUTIVE SUMMARY

In May and June 2018, at the request of Nova Homes, Inc., CRM TECH performed a cultural resources study on approximately eight acres of rural land on the southern edge of the City of Yucaipa, San Bernardino County, California. The subject property of the study, designated Tentative Tract Map Number 20031, consists of Assessor's Parcel Numbers 0319-253-28, 0319-253-29, 0319-253-30, and a portion of 0319-253-84, located between Second Street and Third Street and north of County Line Road, in the southwest quarter of Section 12, T2S R2W, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for the Fallbrook Meadows Project, a proposed 64-unit condominium development that will necessitate the removal of three existing residences at 13644, 13662, and 13682 Second Street. The City of Yucaipa, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the City with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out an intensive-level field survey. The results of these research procedures indicate that the three existing residences in the project area date to the late historic period, specifically circa 1946-1952, but they demonstrate little distinctively historical character today due to extensive alterations in recent years. Also noted in the project area were remnants of concrete foundations left by demolished buildings that dated to the late 1950s. As minor, fragmented, and virtually ubiquitous structural remains from the late historic period, they demonstrate little potential for historic significance.

Since neither the residences nor the foundational remains in the project area showed any potential to meet the statutory definition of "historical resources," they warrant no further study in the CEQA-compliance process, nor formal recordation into the California Historical Resources Inventory. No other features or artifact deposits more than 45 years of age were encountered within the project boundaries during this survey. Based on these findings, CRM TECH concludes that no "historical resources" are known to be present within the project area.

In light of the project's proximity to Yucaipa Creek and the presence of a known Serrano village in the general vicinity in prehistoric and early historic times, the subsurface soils in the project area below the disturbed top layer are considered to be of moderate sensitivity for buried archaeological deposits of Native American origin. In recognition of Native American concerns expressed during this study, the City of Yucaipa may consider implementing extended Phase I subsurface testing through the excavation of shovel test pits and/or backhoe trenches, as requested by the San Manuel Band of Mission Indians, in lieu of future archaeological or Native American monitoring.

No other cultural resources investigation is recommended for this project unless development plans undergo such changes as to include areas not covered by this study. If buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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INTRODUCTION

In May and June 2018, at the request of Nova Homes, Inc., CRM TECH performed a cultural resources study on approximately eight acres of rural land on the southern edge of the City of Yucaipa, San Bernardino County, California (Fig. 1). The subject property of the study, designated Tentative Tract Map Number 20031, consists of Assessor's Parcel Numbers (APN) 0319-253-28, 0319-253-29, 0319-253-30, and a portion of 0319-253-84, located between Second Street and Third Street and north of County Line Road, in the southwest quarter of Section 12, T2S R2W, San Bernardino Baseline and Meridian (Figs. 2, 3).

The study is part of the environmental review process for the Fallbrook Meadows Project, a proposed 64-unit condominium development that will necessitate the removal of three existing residences at 13644, 13662, and 13682 Second Street. The City of Yucaipa, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the City with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in these research procedures are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

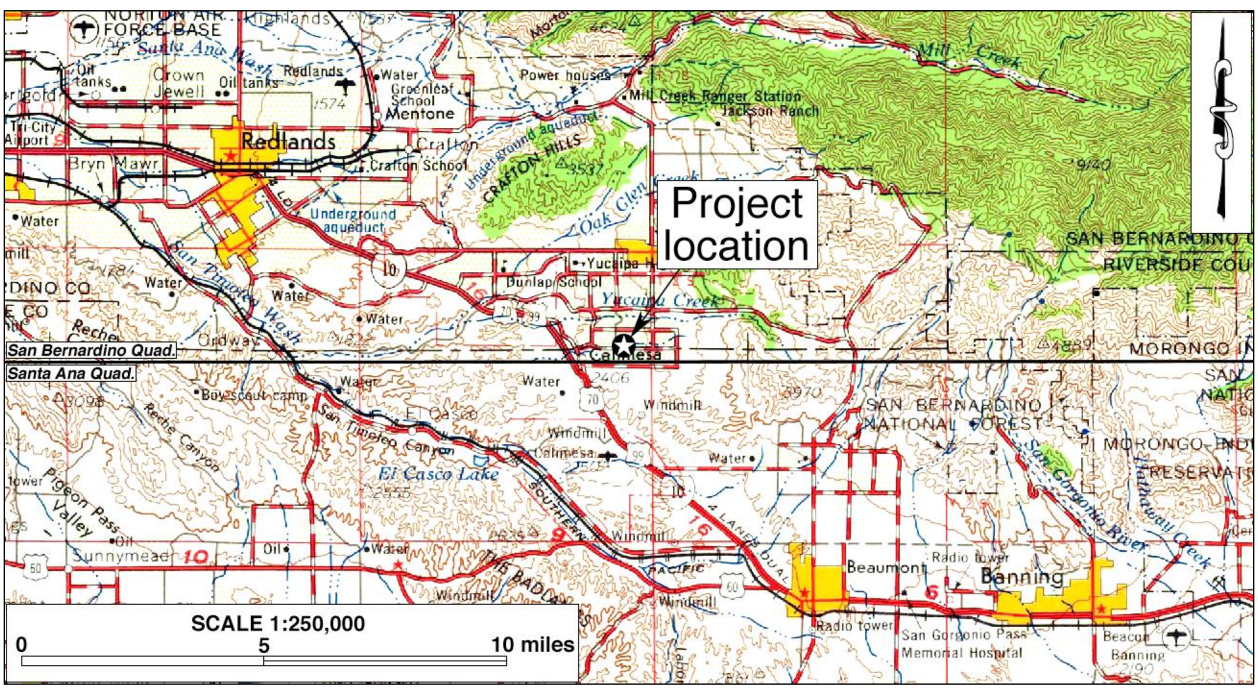

Figure 1. Project vicinity. (Based on USGS San Bernardino and Santa Ana, Calif., 30'x60' quadrangles [USGS 1969; 1979a])

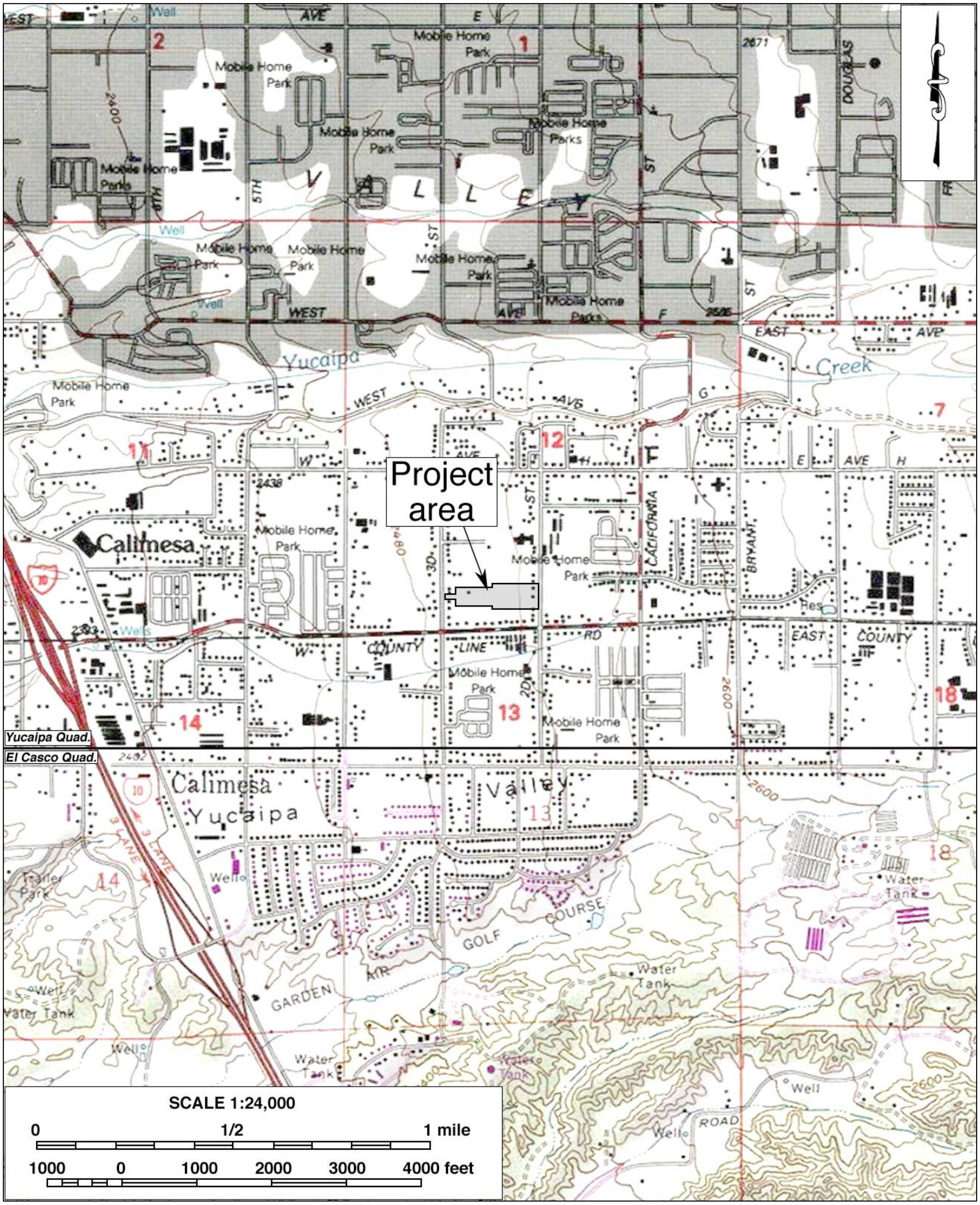

Figure 2. Project area. (Based on USGS El Casco and Yucaipa, Calif., 7.5' quadrangles [USGS 1979b; 1996])

Figure 3. Aerial image of the project area.

SETTING

CURRENT NATURAL SETTING

The City of Yucaipa is situated in the eastern end of the San Bernardino Valley, a broad inland valley defined by the San Gabriel and San Bernardino Mountain Ranges on the north and a series of low rocky hills on the south. The environment of the region is characterized by its temperate Mediterranean climate, with the average maximum temperature in July reaching well into the 90s (Fahrenheit) and the average minimum temperature in January hovering around 35 degrees. Rainfall is typically less than 20 inches annually, most of which occurs between November and March.

The project area comprises an irregularly shaped tract of former agricultural land that is most vacant today, with the three existing single-family residences standing along the eastern edge (Fig. 3). It is located roughly a half-mile south of Yucaipa Creek, and is surrounded by both older residential properties of rural character and suburban housing tracts of relatively recent vintages. The terrain is mostly level, with elevations ranging approximately from 2,500 feet to 2,535 feet above mean sea level, and the ground surface has been extensively disturbed by past agricultural and construction activities. Landscape plantings, including trees, bushes, and flowers, are found around the buildings, and the wild mustard, foxtails, and other small shrubs and grasses cover much of the rest of the project area (Fig. 4).

Figure 4. Current natural setting of the project area. (Photograph taken on June 7, 2018; view to the east)

CULTURAL SETTING

Prehistoric Context

The earliest evidence of human occupation in the Inland Empire region was discovered below the surface of an alluvial fan in the northern portion of the Lakeview Mountains, overlooking the San Jacinto Valley, with radiocarbon dates clustering around 9,500 B.P. (Horne and McDougall 2008). Another site found near the shoreline of Lake Elsinore, close to the confluence of Temescal Wash and the San Jacinto River, yielded radiocarbon dates between 8,000 and 9,000 B.P. (Grenda 1997). Additional sites with isolated Archaic dart points, bifaces, and other associated lithic artifacts from the same age range have been found in the Cajon Pass area, typically atop knolls with good viewsheds (Basgall and True 1985; Goodman and McDonald 2001; Goodman 2002; Milburn et al. 2008).

The cultural prehistory of southern California has been summarized into numerous chronologies, including those developed by Chartkoff and Chartkoff (1984), Warren (1984), and others. Specifically, the prehistory of the Inland Empire region has been addressed by O'Connell et al. (1974), McDonald et al. (1987), Keller and McCarthy (1989), Grenda (1993), Goldberg (2001), and Horne and McDougall (2008). Although the beginning and ending dates of different cultural horizons vary regionally, the general framework of regional prehistory can be broken into three primary periods:

- Paleoindian Period (ca. 18,000-9,000 B.P.): Native peoples of this period created fluted spearhead bases designed to be hafted to wooden shafts. The distinctive method of thinning bifaces and spearhead preforms by removing long, linear flakes leaves diagnostic Paleoindian markers at tool-making sites. Other artifacts associated with the Paleoindian toolkit include choppers, cutting tools, retouched flakes, and perforators. Sites from this period are very sparse across the landscape and most are deeply buried.
- Archaic Period (ca. 9,000-1,500 B.P.): Archaic sites are characterized by abundant lithic scatters of considerable size with many biface thinning flakes, bifacial preforms broken during manufacture, and well-made groundstone bowls and basin metates. As a consequence of making dart points, many biface thinning waste flakes were generated at individual production stations, which is a diagnostic feature of Archaic sites.
- Late Prehistoric Period (ca. 1,500 B.P.-contact): Sites from this period typically contain small lithic scatters from the manufacture of small arrow points, expedient groundstone tools such as tabular metates and unshaped manos, wooden mortars with stone pestles, acorn or mesquite bean granaries, ceramic vessels, shell beads suggestive of extensive trading networks, and steatite implements such as pipes and arrow shaft straighteners.

Ethnohistoric Context

The present-day Yucaipa area is a part of the traditional homeland of the Serrano people, which is centered in the San Bernardino Mountains. Together with that of the Vanyume people, linguistically a subgroup, the territory of the Serrano also includes part of the San Gabriel Mountains, much of the San Bernardino Valley, and the Mojave River valley in the southern portion of the Mojave Desert, reaching as far east as the Cady, Bullion, Sheep Hole, and Coxcomb Mountains. The name "Serrano" was derived from a Spanish term meaning "mountaineer" or "highlander." The basic written sources on Serrano culture are Kroeber (1925), Strong (1929), and Bean and Smith (1978). The following ethnographic discussion of the Serrano people is based mainly on these sources.

Prior to European contact, the Serrano were primarily hunter-gatherers and occasionally fishers, and settled mostly on elevated terraces, hills, and finger ridges near where flowing water emerged from the mountains. They were loosely organized into exogamous clans, which were led by hereditary heads, and the clans in turn were affiliated with one of two exogamous moieties. The clans were patrilineal, but their exact structure, function, and number are unknown, except that each clan was the largest autonomous political and landholding unit. There was no pan-tribal political union among the clans, but they shared strong trade, ceremonial, and marital connections that sometimes also extended to other surrounding nations, such as the Kitanemuk, the Tataviam, and the Cahuilla.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was negligible until the 1810s, when a mission *asistencia* was established on the southern edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serrano in the western portion of their traditional territory were removed to the nearby missions. In the eastern portion, a series of punitive expeditions in 1866-1870 resulted in the death or displacement of almost all remaining Serrano population in the San Bernardino Mountains. Today, most Serrano descendants are affiliated with the San Manuel Band of Mission Indians, the Morongo Band of Mission Indians, or the Serrano Nation of Indians.

According to Strong (1929:8), the present-day Redlands-Crafton area was occupied by Gabrielino groups from the San Gabriel Valley at the time of European contact, who were succeeded by the Mountain Cahuilla from the San Jacinto and Santa Rosa Mountains around 1846. The Yucaipa Valley, however, was apparently always occupied by the Serrano. One of the more important Serrano villages, known as *Yukaipa't* and occupied by the *Yucaipaiem* clan, was located in the valley (*ibid.*:11), approximately 3.5 miles to the northwest of the project location (Grenda 1998; Hogan 1999), and ultimately bestowed its name on the Yucaipa Valley and the City of Yucaipa.

Historic Context

The San Bernardino Valley received its first European visitors in 1772, when a small force of Spanish soldiers traveled through the area under the command of Pedro Fages, the military *comandante* of Alta California (Beck and Haase 1974:15; Schuiling 1984:23). The name "San Bernardino" was bestowed on the valley in the 1810s, when the *asistencia* and an associated mission rancho were established under that name (Lerch and Haenszel 1981). In 1842, after secularization of the mission system, the Mexican authorities in Alta California granted Rancho San Bernardino, along with several adjacent former mission ranchos, to members of a prominent Los Angeles family, the Lugos. An adobe house built the following year by one of the grantees, Diego Sepulveda, became the earliest non-Indian settlement in the Yucaipa area (Schuiling 1984:38).

As elsewhere in Alta California during the Spanish and Mexican periods, cattle raising was the primary economic activity on Rancho San Bernardino and other nearby land grants, often with the local Native American population providing the labor force (Lerch and Haenszel 1981). After the U.S. annexation of Alta California in 1848, with the influxes of American settlers and the gradual growth of Los Angeles, San Bernardino, and other towns, a booming lumber industry taking advantage of the dense forest in the San Bernardino Mountains became a major driving force in the development of what would become southwestern San Bernardino County in 1853 (Robinson 1989:25). Ultimately, agriculture established itself as the leading "industry" in the San Bernardino Valley, especially after the successful introduction of citrus crops during the 1870s. For much of the historic period, the Yucaipa area followed the same developmental pattern.

In 1851, the Lugo family sold the entire rancho to Amasa M. Lyman and Charles C. Rich, leaders of the Mormon colony that was to become today's City of San Bernardino (Schuiling 1984:45). During the 1850s, the Yucaipa wing of the rancho and the former Sepulveda adobe were occupied by John

Brown, Sr., an early non-Mormon pioneer in the San Bernardino Valley, although he never acquired the property from the Mormon leaders (Archer 1976). In 1857, the Yucaipa property was purchased by James W. Waters, who developed it into one of southern California's most prosperous stock ranches and grain farms (*ibid.*; Schuiling 1984:45, 106). Twelve years later, Waters sold the property to John C. Dunlap, and the Dunlap family continued the successful ranching and farming operations on the Yucaipa Ranch for the rest of the 19th century (*ibid.*).

In the early 20th century, following the death of Dunlap and his wife, their sons and daughters incorporated the Yucaipa Land and Water Company to subdivide the ranch into small farms (Archer 1976). Other development companies soon joined the venture, including one organized by George Atwood to create the town of "Yucaipa City." Until the most recent decades, however, Yucaipa Valley remained primarily an agricultural area where the local economy focused on a number of cash staples, from cattle and apples in the early years to peaches, plums, and cherries in the 1930s, followed by poultry after World War II (*ibid.*; Schuiling 1984:107). Although growing rapidly into a suburban residential community today, the City of Yucaipa, incorporated in 1989, still offers a degree of country living in comparison to other cities in the area.

RESEARCH METHODS

RECORDS SEARCH

On May 15 and 23, 2018, CRM TECH archaeologists Ben Kerridge and Nina Gallardo completed the records search at the South Central Coastal Information Center (SCCIC) and the Eastern Information Center (EIC). Located at the California State University, Fullerton, and the University of California, Riverside, the SCCIC and the EIC are the State of California's official cultural resource records repositories for the Counties of San Bernardino and Riverside, respectively. While the project area lies entirely within San Bernardino County, the scope of the records search extended into neighboring Riverside County, necessitating record search at both the SCCIC and the EIC.

During the records search, Kerridge and Gallardo examined maps and records on file at the SCCIC and the EIC for previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project area. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino/ Riverside County landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

NATIVE AMERICAN PARTICIPATION

On May 14, 2018, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file. Following the NAHC's recommendations and previously established consultation protocol, on May 18 CRM TECH further contacted a total of 14 local tribal representatives in writing for additional information on potential Native American cultural resources in the project vicinity. The correspondence between CRM TECH and the Native American representatives is attached to this report in Appendix 2.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH historian/architectural historian Terri Jacquemain on the basis of published literature in local and regional history, real property tax assessment records of the County of San Bernardino, U.S. General Land Office (GLO) land survey plat maps dated 1880-1884, U.S. Geological Survey (USGS) topographic maps dated 1901-1996, and aerial photographs taken in 1938-2018. The historic maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, located in Moreno Valley. The aerial photographs are available at the NETR Online website and through the Google Earth software.

FIELD SURVEY

On June 7, 2018, CRM TECH archaeologist Daniel Ballester carried out the intensive-level field survey of the project area. The survey was conducted on foot by walking a series of parallel east-west transects spaced 15 meters (approximately 50 feet) apart. Ground visibility was generally poor (0-25 percent) because of the dense, low-lying vegetation growth, but was considered adequate in light of past disturbances to the ground surface. In conjunction with the archaeological survey, on June 4 Terri Jacquemain performed a field inspection of the three existing residences in the project area and made detailed notations and preliminary photo-documentation of each building's structural and architectural characteristics. In this way, the entire project area was systematically and carefully inspected for any features or artifacts dating to the prehistoric or historic period (i.e., 45 years or older).

RESULTS AND FINDINGS

RECORDS SEARCH

According to SCCIC and EIC records, the project area had not been surveyed for cultural resources prior to this study, and no cultural resources were previously recorded on or adjacent to the property. Outside of project boundaries but within a one-mile radius, SCCIC and EIC records show some 30 previous cultural resources studies on various tracts of land and linear features, though collectively covering only about 15% of the land within the scope of the records search (Fig. 5). As a result of these studies, a circa 1930 storm drain under Calimesa Boulevard was previously recorded into the California Historical Resources Inventory as Site 33-023900. Since it was recorded nearly a mile to the west of the project area, Site 33-023900 requires no further consideration during this study. No other cultural resources, either prehistoric or historical in origin, have been identified within the one-mile radius.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the NAHC reported in a letter dated May 17, 2018, that the sacred lands record search identified no Native American cultural resources within the project area but that the general vicinity is sensitive for such resources. The NAHC recommended that local Native American groups be consulted for further information and provided a referral list of 21 potential contacts (see App. 2).

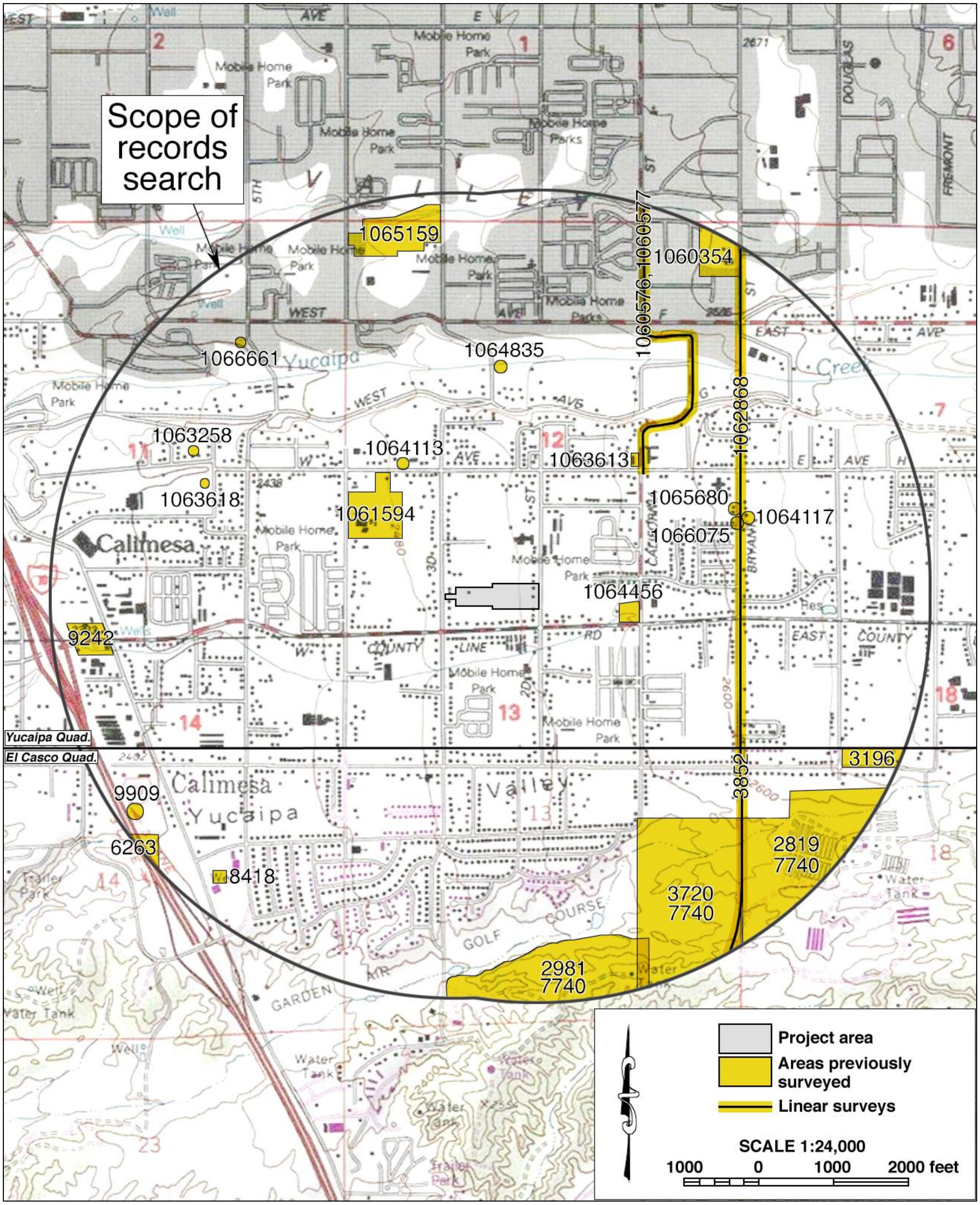

Figure 5. Previous cultural resources studies in the vicinity of the project area, listed by SCCIC and EIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

Upon receiving the NAHC's reply, CRM TECH sent written requests for comments to all of the tribes on the referral list. In lieu of some of the individuals recommended by the NAHC, CRM TECH contacted the designated spokespersons for the tribes on cultural resources issues, as recommended previously by the tribal government staff. In all, nine of the 21 individuals on the NAHC's referral list were contacted, along with the following five tribal spokespersons:

- Judy Stapp, Director of Cultural Affairs, Cabazon Band of Mission Indians;
- Bobby Ray Esparza, Cultural Coordinator, Cahuilla Band of Indians;
- Raymond Huaute, Tribal Historic Preservation Officer, Morongo Band of Mission Indians;
- Jessica Mauck, Cultural Resources Analyst, San Manuel Band of Mission Indians;
- Gabriella Rubalcava, Environmental Director, Santa Rosa Band of Cahuilla Indians.

As of this time, five of the tribes have responded in writing (see App. 2). Three of the tribes, namely the Augustine Band of Cahuilla Indians, the Cahuilla Band of Indians, and the Cabazon Band of Mission Indians, stated that they had no specific information on any properties of Native American traditional cultural value in the project area. The Augustine Band recommended consultation with other tribes in the vicinity and monitoring during ground-disturbing activities in the project area, and requested immediate notification if any Native American cultural resources are encountered. The Cahuilla Band asked to be kept informed of future progress of the project.

The Morongo Band of Mission Indians found the project location to be a part of the tribe's traditional use area and requested a copy of this report for tribal review. Finally, the San Manuel Band of Mission Indians identified the project location as a part of the area associated with the village of *Yukaipa't* and found the general vicinity to be of moderate cultural sensitivity to the tribe. Depending on the extent of existing ground disturbance and the soil types, the San Manuel Band recommended subsurface archaeological testing in the project area to ascertain the presence or absence of buried cultural remains.

HISTORICAL BACKGROUND RESEARCH

Historical sources consulted for this study suggest that throughout the historic period the project vicinity showed relatively slow growth typical of rural areas (Figs. 6-8). In the 1850s, the project area was no more than a bit of remote land noted for being level and good for animal grazing, the prevailing economic activity on the vast cattle ranches in the San Bernardino Valley at the time (Fig. 6). Little had changed near the end of the 1890s, at which time the only notable man-made features in the vicinity were some winding roads and a solitary building roughly a half-mile to the northeast of the project area (Fig. 7).

In 1938, the project vicinity exhibited a typical settlement pattern for rural southern California, characterized by agriculture land scored by a regular grid of roads, including Second and Third Streets, along with a few scattered buildings (NETR Online 1938). At that time, the project area was use entirely as cultivated farmlands (*ibid*.). Horticulture and other agriculture pursuits continued to dominate the landscape in the early post-WWII years (Fig. 8; NETR Online 1959). Between 1966 and 1995, however the project vicinity embarked on a gradual transition from rural to suburban character, more so to the east of Second Street as residential development accelerated closer to Yucaipa's town center (NETR Online 1966-1995).

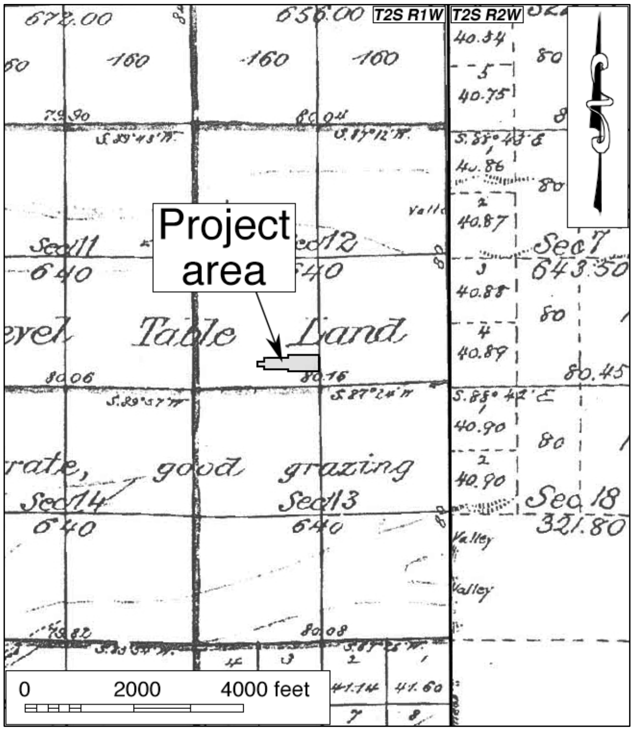

Figure 6. The project area and vicinity in 1879-1884.
(Source: GLO 1880; 1884)

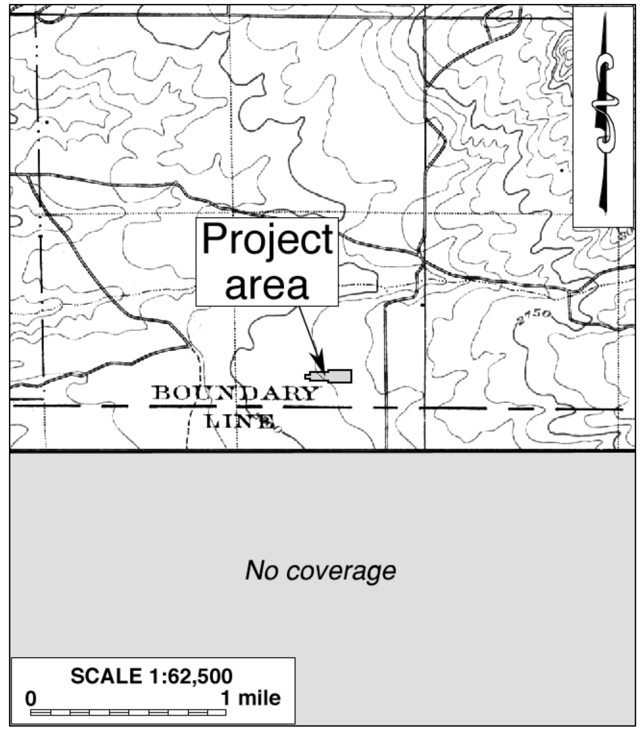

Figure 7. The project area and vicinity in 1898-1899.
(Source: USGS 1901)

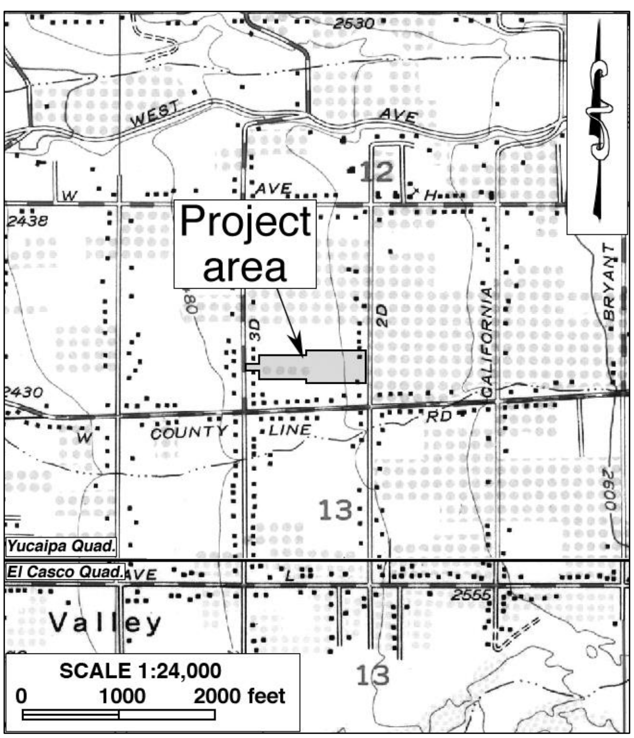

Figure 8. The project area and vicinity in 1952-1954.
(Source: USGS 1954)

Within the project boundaries, two of the three residences in existence today were known to be in place by 1952-1954, corresponding in location to those at 13644 and 13682 Second Street (APN 0319-253-30 and 0319-253-28, respectively), followed by the third residence at 13662 Second Street (APN 0319-253-29) between then and 1959 (Fig. 8; NETR Online 1959). San Bernardino County records, however, indicate that all three of them date to the 1946-1952 era (County Assessor n.d.). Also by 1959, three buildings had appeared in the western portion of the project area, on APN 0319-253-84 (NETR Online 1959. One of them was replaced by, or incorporated into, a large building by 1966, but all three of them were subsequently removed between 1980 and 2002 (NETER Online 1966-2002). Since then, other than the three residences on Second Street, the rest of the project area has remained vacant and undeveloped to the present time (NETR Online 2002-2012; Google Earth 1995-2018).

FIELD SURVEY

During the field inspection, the three houses at 13644, 13662, and 13682 Second Street were noted as single-family residences of modest size and common character for the early post-WWII era. All of them are one-story structures with low- to medium-pitched simple gable or hip roofs and stucco walls with occasional vertical board siding, and all three exhibit the basic characteristics of the then-popular California Ranch-style residential architecture (Fig. 9). Two of them, at 13644 and 13682 Second Street, remain occupied today, while the third one at 13662 Second Street, has been abandoned.

All three of the residences have been extensively altered on the exterior through various additions and replacements, most notably for the abundance of aluminum-framed sliding windows and roofing and siding materials of modern character. Individually, the residence at 13682 Second Street also has a front door of recent vintage and a modernized garage that has been converted into living quarters. Modifications to the residence at 13662 Second Street may have left the driveway to terminate peculiarly at the front wall without a garage or carport. Other than the replacement of windows and exterior cladding, the residence at 13644 Second Street has a detached garage that sports a modern aluminum sectional door. As is typical with similar buildings in formerly rural areas, the residences in the project area have also received additions that are not entirely consistent in appearance with the original structures.

Because of these extensive alterations, none of the three residences retains sufficient historical character to warrant further study as potential “historical resources” or formal recordation. Also

Figure 9. Existing residences and foundational remains in the project area. *Clockwise from top left*: 13682 Second Street, view to the west, 13662 Second Street, view to the southwest, 13644 Second Street, view to the northwest; foundational remains dating to the late 1950s, view to the west. (Photographs taken on June 7, 2018)

encountered during the field survey but not formally recorded were remnants of some concrete foundations in the western portion of the project area (Fig. 9), undoubtedly from the buildings noted in that area in the late 1950s but demolished between 1980 and 2002 (see above). These minor, fragmented, and virtually ubiquitous structural remains from the late historic period have little potential for historic significance, and do not warrant further study as potential "historical resources" either. No other features or artifact deposits more than 45 years of age were encountered in the project area during the field survey.

DISCUSSION

The purpose of this study is to identify potential cultural resources within or adjacent to the project area, and to assist the City of Yucaipa in determining whether such resources meet the official definition of "historical resources," as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, 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."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

In summary of the research results presented above, the only features more than 45 years of age encountered in the project area during this study were the three existing residences at 13644, 13662, and 13682 Second Street and the remnants of some concrete foundations. All of these features date to the 1946-1959 era, but the buildings have all been extensively altered in recent years and no longer retain sufficient historic integrity to relate to their period of origin or to any persons or events in their history. Common post-WWII residences such as these survive in very large numbers in southern California and throughout the U.S., and generally need to exhibit a high level of historic significance to qualify as "historical resources," and these residences demonstrate no such potential.

Similarly, the foundational remains found in the project area, dating to roughly the same era, are minor, fragmented features that are virtually ubiquitous in southern California, and show no potential for any historical association or archaeological data. As such, neither the residences nor the foundational remains are considered potential "historical resources," and they require no further study in the CEQA-compliance process. Based on these findings, CRM TECH concludes that no "historical resources" are known to be present within the project area. However, in light of the project's proximity to Yucaipa Creek and the presence of a known Serrano village in the general vicinity in prehistoric and early historic times, the subsurface soils in the project area below the disturbed top layer are considered to be of moderate sensitivity for buried archaeological deposits of Native American origin.

CONCLUSION AND RECOMMENDATIONS

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

As stated above, the current study encountered no "historical resources," as defined by CEQA and associated regulations, within the project area but found the location to be moderately sensitive for subsurface archaeological deposits of Native American origin. Accordingly, CRM TECH presents the following recommendations to the City of Yucaipa:

- The proposed project will not cause a substantial adverse change to any known "historical resources."
- In recognition of Native American concerns expressed during this study, the City of Yucaipa may consider implementing extended Phase I subsurface testing through the excavation of shovel test pits and/or backhoe trenches, as requested by the San Manuel Band of Mission Indians, in lieu of future archaeological or Native American monitoring.
- No other cultural resources investigation will be necessary for the project unless development plans undergo such changes as to include areas not covered by this study.
- If buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA*

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists; Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT HISTORIAN/ARCHITECTURAL HISTORIAN
Terri Jacquemain, M.A.

Education

2004	M.A., Public History and Historic Resource Management, University of California, Riverside. • M.A. thesis: Managing Cultural Outreach, Public Affairs and Tribal Policies of the Cabazon Band of Mission Indians, Indio, California; internship served as interim Public Information Officer, Cabazon Band of Mission Indians, June-October, 2002.
2002	B.S., Anthropology, University of California, Riverside.
2001	Archaeological Field School, University of California, Riverside.
1991	A.A., Riverside Community College, Norco Campus.

Professional Experience

2003-	Historian/Architectural Historian/Report Writer, CRM TECH, Riverside/Colton, California. • Author/co-author of legally defensible cultural resources reports for CEQA and NHPA Section 106; • Historic context development, historical/archival research, oral historical interviews, consultation with local communities and historical organizations; • Historic building surveys and recordation, research in architectural history; architectural description
2002-2003	Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002	Interim Public Information Officer, Cabazon Band of Mission Indians.
2000	Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000	Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997	Reporter, *The Press-Enterprise*, Riverside, California.

Membership

California Preservation Foundation.

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, M.S.

Education

2013	M.S., Geographic Information System (GIS), University of Redlands, California.
1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002-	Field Director/GIS Specialist, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist, CRM TECH, Riverside, California.
1998-1999	Field Crew, K.E.A. Environmental, San Diego, California.
1998	Field Crew, A.S.M. Affiliates, Encinitas, California.
1998	Field Crew, Archaeological Research Unit, University of California, Riverside.

PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON
Nina Gallardo, B.A.

Education

2004	B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004-	Project Archaeologist, CRM TECH, Riverside/Colton, California. Surveys, excavations, construction monitoring, field recordation, mapping, records searches, and Native American liaison.

Honors and Awards

2000-2002	Dean's Honors List, University of California, Riverside.

PROJECT ARCHAEOLOGIST
Ben Kerridge, M.A.

Education

2014	Archaeological Field School, Institute for Field Research, Kephallenia, Greece.
2010	M.A., Anthropology, California State University, Fullerton.
2009	Project Management Training, Project Management Institute/CH2M HILL, Santa Ana, California.
2004	B.A., Anthropology, California State University, Fullerton.

Professional Experience

2015-	Project Archaeologist/Report Writer, CRM TECH, Colton, California.
2015	Teaching Assistant, Institute for Field Research, Kephallenia, Greece.
2009-2014	Publications Delivery Manager, CH2M HILL, Santa Ana, California. • Led teams of editors, document processors, and graphic designers in production of technical documents in support of construction, remediation, and mitigation/monitoring projects of varying sizes around the world. • Provided field and research support to cultural resources management teams on various projects.
2010-	Naturalist, Newport Bay Conservancy, Newport Beach, California.
2009-2010	Senior Commentator, GameReplays.org.
2006-2009	Technical Publishing Specialist, CH2M HILL, Santa Ana, California.
2002-2007	Host and Head Writer, *The Rational Voice* Radio Program, Titan Radio, California State University, Fullerton.
2002-2006	English Composition/College Preparation Tutor, various locations, California.

Papers Presented

- Geomorphological Survey of Tracts T126–T151 to Support Archaeological Shoreline Research Project. Institute for Field Research, Kephallenia, Greece, 2014.
- The Uncanny Valley of the Shadow of Modernity: A Re-examination of Anthropological Approaches to Christianity. Graduate Thesis, California State University, Fullerton, 2010.
- Ethnographic Endeavors into the World of Counterstrike. 74th Annual Conference of the Southwestern Anthropological Association, 2003.

Cultural Resources Management Reports

Co-author and contributor to numerous cultural resources management reports since 2013.

Memberships

Society for California Archaeology; Pacific Coast Archaeological Society.

APPENDIX 2

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of 14 local Native American representatives were contacted; a sample letter is included in this appendix.

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916)373-3710
(916)373-5471 Fax
nahc@pacbell.net

Project: Fallbrook Meadows Project; Tentative Tract Map No. 20031 (CRM TECH No. 3346)

County: San Bernardino

USGS Quadrangle Name: El Casco and Yucaipa, Calif.

Township 2 South **Range** 2 West SB **BM; Section(s)** 12

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: ngallardo@crmtech.us

Project Description: The primary component of the project is to construct a condominium complex on 8.37 acres of land located between 2nd and 3rd Streets and north of County Line Road (APNs 0319-253-28, -29, -30, and -84), in the City of Yucaipa, San Bernardino County, California.

May 14, 2017

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

May 17, 2018

Nina Gallardo
CRM TECH

Sent by E-mail: ngallardo@crmtech.us

RE: Proposed Fallbrook Meadows TTM 20031 (CRM TECH No. 3346) Project, City of Yucaipa; El Casco and Yucaipa USGS Quadrangles, San Bernardino County, California

Dear Ms. Gallardo:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results however the area within the APE provided is sensitive for cultural resources. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
San Bernardino County
5/17/2018

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Los Coyotes Band of Mission Indians
John Perada, Environmental Director
P. O. Box 189 — Cahuilla
Warner Springs, CA, 92086
Phone: (760) 782 - 0712
Fax: (760) 782-2730

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712
Chapparosa@msn.com

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramonatribe.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Fallbrook Meadows Project, San Bernardino County.

Native American Heritage Commission
Native American Contact List
San Bernardino County
5/17/2018

Ramona Band of Cahuilla Mission Indians
John Gomez, Environmental Coordinator
P. O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramonatribe.com

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838 — Kitanemuk, Serrano, Tataviam
Newhall, CA, 91322
Phone: (503) 539 - 0933
Fax: (503) 574-3308
ddyocum@comcast.net

San Manuel Band of Mission Indians
Lee Clauss, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Fax: (909) 864-3370
lclauss@sanmanuel-nsn.gov

Santa Rosa Band of Mission Indians
Steven Estrada, Chairperson
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
mflaxbeard@santarosacahuilla-nsn.gov

Serrano Nation of Mission Indians
Goldie Walker, Chairperson
P.O. Box 343 — Serrano
Patton, CA, 92369
Phone: (909) 528 - 9027

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla, Luiseno
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
carrieg@soboba-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 — Cahuilla
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Fallbrook Meadows Project, San Bernardino County.

Twenty-Nine Palms Band of Mission Indians Darrell Mike, Chairperson 46-200 Harrison Place Coachella, CA, 92236 Phone: (760) 863 - 2444 Fax: (760) 863-2449 29chairman@29palmsbomi-nsn.gov	Chemehuevi

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Fallbrook Meadows Project, San Bernardino County.

May 18, 2018

Patricia Garcia-Plotkin, Director of the Tribal Historic Preservation Office
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: Fallbrook Meadows Project; TTM 20031
Assessor's Parcel Numbers 0319-253-28, -29, -30, and -84
8.37 Acres in the City of Yucaipa, San Bernardino County, California
CRM TECH Contract #3346

Dear Ms. Garcia-Plotkin:

I am writing to bring your attention to an ongoing CEQA-compliance study for the proposed project referenced above. The project entails the construction of a condominium complex on 8.37 acres of partially developed land located between 2nd and 3rd Streets and north of County Line Road (APNs 0319-253-28, -29, -30, and -84), in the City of Yucaipa. There are three residences currently located along the east boundary (2nd Street) of the subject property. The accompanying map, based on the USGS El Casco and Yucaipa, Calif., 7.5' quadrangles, depicts the location of the project area in Section 12, T2S R2W, SBBM.

In a letter dated May 17, 2018, the Native American Heritage Commission (NAHC) reports that the sacred lands record search identified no Native American cultural resources within the project area but that the area is sensitive for cultural resources. The NAHC recommends that local Native American groups be contacted for further information (see attached). Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the project area.

Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value in or near the project area, or any other information to consider during the cultural resources investigations. Any information or concerns may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail. Requests for documentation or information we cannot provide will be forwarded to our client and/or the lead agency, namely the City of Yucaipa.

We would also like to clarify that, as the cultural resources consultant for the project, CRM TECH is not involved in the AB 52-compliance process or in government-to-government consultations. The purpose of this letter is to seek any information that you may have to help us determine if there are cultural resources in or near the project area that we should be aware of and to help us assess the sensitivity of the project area. Thank you for your time and effort in addressing this important matter.

Respectfully,

Nina Gallardo
Project Archaeologist/Native American liaison
CRM TECH
Email: ngallardo@crmtech.us

Encl.: NAHC response letter and project location map

From: Jessica Mauck <JMauck@sanmanuel-nsn.gov>
Sent: Monday, May 21, 2018 12:26 PM
To: ngallardo@crmtech.us
Subject: RE: NA Scoping Letter for the Proposed Fallbrook Meadows Project; TTM 20031; APNs 0319-253-28, -29, -30, and -84 in the City of Yucaipa, San Bernardino County (CRM TECH # 3346)

Hi Nina,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on 18 May 2018. The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe. The City of Yucaipa is located within the village of Yucaipat near San Timoteo Canyon, Wildwood Canyon, Pisgah Peak, and many other natural landforms important to the Serrano people. David Earle published a short summary paper regarding research of the Wildwood Canyon area, its significance to the Serrano people, and their use of the landscape. As a result, SMBMI has been able to create a decent picture of low, moderate, and high sensitivity areas across this valley. The proposed project site is within a moderately sensitive area due to its proximity to Yucaipa Creek, which would have been transversed by people heading west towards the village of Yucaipat (approx. 2-2.5 miles NW of the project site) and east toward Wildwood Canyon (approx. 1.85 miles east of the project site) towards villages to the northeast.

As a result, depending on existing disturbance and soil type/age, SMBMI recommends presence/absence testing take place during the Phase I survey in order to determine if there are any cultural resources at the subsurface level within the proposed project footprint. If you have any questions/comments, please do not hesitate to contact me, as I will be your POC on behalf of SMBMI for this project.

Regards,

Jessica Mauck
CULTURAL RESOURCES ANALYST
O: (909) 864-8933 x3249
M: (909) 725-9054
26569 Community Center Drive, Highland California 92346

From: Cultural Department <culturaldirector@cahuilla.net>
Sent: Tuesday, May 22, 2018 2:32 PM
To: ngallardo@crmtech.us
Cc: anthonymad2002@gmail.com
Subject: Re: NA Scoping Letter for the Proposed Fallbrook Meadows Project; TTM 20031; APNs 0319-253-28, -29, -30, and -84 in the City of Yucaipa, San Bernardino County (CRM TECH # 3346)

Dear Ms. Gallardo,

The Cahuilla Band of Indians has received your letter on May 18, 2018 regarding the Fallbrook Meadows Project; TTM 20031 APN 0319-253-28, -29, -30, and -84 in the City of Yucaipa, San Bernardino County, CA. The Cahuilla band does not have knowledge of any cultural resources/sites within or near the project area. Although the project is outside the Cahuilla reservation boundary, it is within the Cahuilla traditional land use area. We respectfully request to be notified of all updates and/or changes with the project moving forward and appreciate your help in preserving Tribal Cultural Resources in your project.

Respectfully,

BobbyRay Esparza
Cultural Coordinator
Cahuilla Band of Indians
Office: (951)763-5549

AUGUSTINE BAND OF CAHUILLA INDIANS

PO Box 846 84-481 Avenue 54 Coachella CA 92236
Telephone: (760) 398-4722
Fax (760) 369-7161
Tribal Chairperson: Amanda Vance
Tribal Vice-Chairperson: William Vance
Tribal Secretary: Victoria Martin

May 22, 2018

Nina Gallardo
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92236

RE: **Fallbrook Meadows Project; TTM 20031, Assessor's Parcel Numbers 0319-253-28, -29, -30, and -84, 8.37 Acres in the City of Yucaipa, San Bernardino County, CA**
CRM TECH Contract #3346

Dear Ms. Gallardo -

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

Very truly yours,

Victoria Martin

Victoria Martin
Tribal Secretary

RECEIVED
MAY 29 2018
BY: ....

May 23, 2018

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re.: Fallbrook Meadows Project TTM 20031
Assessor's Parcel Numbers 0319-253-28, -29, -30, and -84
8.37 Acres in the City of Yucaipa
San Bernardino, County, California
CRM TECH Contract #3346

Dear Ms. Gallardo:

Thank you for contacting the Cabazon Band of Mission Indians concerning cultural resource information relative to the above referenced project.

The project is located outside of the Tribe's current reservation boundaries. The Tribe has no specific archival information on the site indicating that it may be a sacred/religious site or other site of Native American traditional cultural value within the project area.

We look forward to continued collaboration in the preservation of cultural resources or areas of traditional cultural importance.

Best regards,

Judy Stapp

Judy Stapp
Director of Cultural Affairs

MAY 22 2018

BY: ....

84-245 INDIO SPRINGS PARKWAY • INDIO, CALIFORNIA 92203-3499 • 760.342.2593 • FAX: 760.347.7880

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

MORONGO BAND OF MISSION INDIANS
TRIBAL HISTORIC PRESERVATION OFFICE
12700 PUMARRA RD BANNING, CA 92220
OFFICE 951-755-5025 FAX 951-572-6004

Date: 5/30/2018

Re:
CRM TECH CONTRACT #3346 – Fallbrook Meadows, Yucaipa

Dear,
Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH

Thank you for contacting the Morongo Band of Mission Indians (MBMI) Cultural Heritage Department regarding the above referenced project(s). After conducting a preliminary review of the project, the tribe would like to respectfully issue the following comments and/or requests:

☐ The project is located outside of the Tribe's aboriginal territory and is not within an area considered to be a traditional use area or one in which the Tribe has cultural ties. We recommend contacting the appropriate tribe(s) who may have cultural affiliations to the project area. We have no further comments at this time.

☒ The project is located within the Tribe's aboriginal territory or in an area considered to be a traditional use area or one in which the Tribe has cultural ties. In order to further evaluate the project for potential impacts to tribal cultural resources, we would like to formally request the following:

- ☒ A thorough records search be conducted by contacting one of the California Historical Resources Information System (CHRIS) Archaeological Information Centers and a copy of the search results be provided to the tribe.

- ☒ Tribal monitor participation during the initial pedestrian field survey of the Phase I Study of the project and a copy of the results of that study. In the event the pedestrian survey has already been conducted, MBMI requests a copy of the Phase I study be provided to the tribe as soon as it can be made available.

- ☐ MBMI Tribal Cultural Resource Monitor(s) be present during all required ground disturbing activities pertaining to the project.

☐ The project is located with the current boundaries of the Morongo Indian Reservation. Please contact the Morongo Cultural Heritage Department for further details.

Please be aware that this letter is merely intended to notify your office that the tribe has received your letter requesting tribal consultation for the above mentioned project and is requesting to engage in consultation. Specific details regarding the tribe's involvement in the project must be discussed on a project by project basis during the tribal consultation process. This letter does not constitute "meaningful" tribal consultation nor does it conclude the consultation process. Under federal and state law, "meaningful" consultation is understood to be an ongoing government-to-government process and may involve requests for additional information, phone conferences and/or face-to-face meetings. If you have any further questions or concerns regarding this letter, please contact the Morongo Cultural Heritage office at (951) 755-5139.

Sincerely,

Raymond Huaute
Tribal Historic Preservation Officer
Morongo Band of Mission Indians
Email: rhuaute@morongo-nsn.gov
Phone: (951) 755-5025

DPR 523 Forms for 13649 Third Street

By Steven C. Maurer
Yucaipa Historical Society

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

  *Resource Name or #:

P1. Other Identifier: 13649 3rd Street

*P2. Location: ☐ Not for Publication ☑ Unrestricted *a. County: San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Yucaipa, CA Date: 1996 T 2S ; R 2W ; SE ¼ of SW ¼ of Sec 12 ; S.B. B.M.

c. Address: 13649 3rd Street City: Yucaipa Zip: 92399

d. UTM: Zone: 11 ;S mE/495,631 mN (G.P.S.) 3,762,776

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
APN: 0319-253-84 Approx. 2500 ft. above sea level

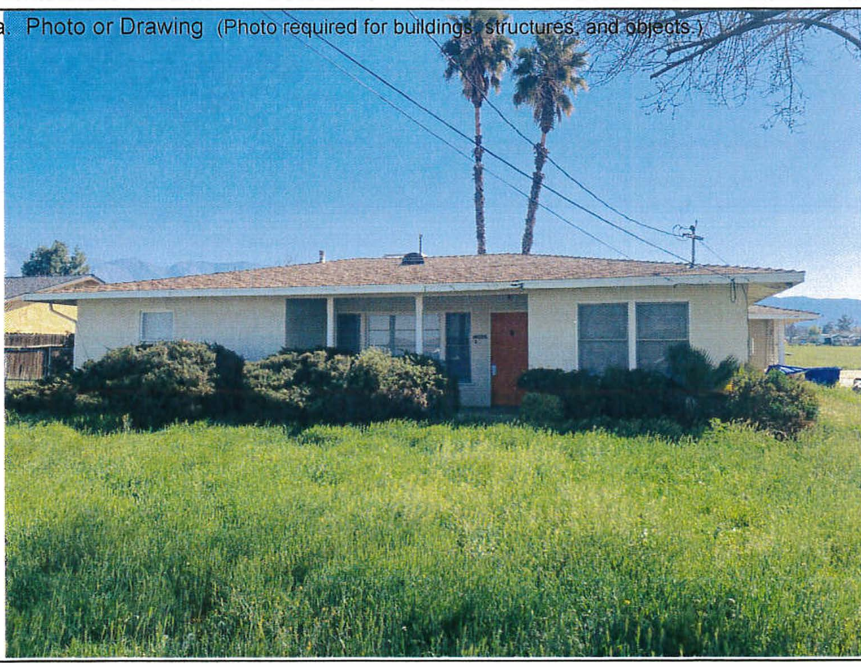
*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The existing one-story ranch-style residence was constructed around 1952 of conventional wood-framed construction with stucco siding and affixed to a permanent concrete foundation. The existing two-car garage is set back five feet from the residence and is attached through a shared brown composite shingle roof, which gives the building an L-shaped footprint. The attached roof and building separation creates a breezeway between the structures that is partially enclosed with a three-foot tall red brick wall and a lattice/metal screen door. The exterior walls are finished with light gray stucco with white wood fascia. The front facade is western oriented toward 3rd Street that is defined by two double-hang windows on the southern portion of the western facade and one double-hang window along the northern portion of the western facade that are bisected by a covered porch. The covered porch is recessed four feet from the outer edge of the building, is supported by two narrow, white columns, and features a large tripartite window and red door to create a defined main entrance. The main entrance is accessed by a four-foot wide concrete pathway leading north to south from the paved portion of the driveway to the covered entryway.

*P3b. Resource Attributes: (List attributes and codes) HP2: single-family property

*P4. Resources Present: ☑Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
Photo taken: March, 2022
looking east

*P6. Date Constructed/Age and Sources: ☑Historic ☐Prehistoric ☐Both
1952

*P7. Owner and Address:
Acosta Investments, LLC
1232 Village Way Ste. A
Santa Ana, CA 92705-4746

*P8. Recorded by: (Name, affiliation, and address)
Steven C Maurer
Yucaipa Historical Society
P.O. Box 297, Yucaipa, CA

*P9. Date Recorded: 03/16/22

*P10. Survey Type: (Describe)
Historic period building evaluation

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") None.

*Attachments: ☐NONE ☑Location Map ☐Sketch Map ☐Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**

***Resource Name or #** (Assigned by recorder)

B1. Historic Name:
B2. Common Name:
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch-style
***B6. Construction History:** (Construction date, alterations, and date of alterations)

Records indicate the residence, garage, and accessory structure was constructed around 1952. There have been no significant alterations to the primary structure other than the lattice/screen door leading to the breezeway. The detached accessory structure east of the residence was removed between 2004 to 2005.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

N/A

B9a. Architect: Unknown   b. Builder: unknown
***B10. Significance: Theme:** Post-WWII   **Area:** Yucaipa Valley
Period of Significance: 1945-1970   **Property Type:** Single-family property   **Applicable Criteria:** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The residence was constructed during the Post-WWII era, which is defined by robust growth in suburban development and reflective of the Yucaipa Valley's transition from the Fruit Era. However, while construction of the residence may be indicative of the area's historic heritage for that period of time, the subject residence does not exhibit a distinct or close relationship with the pattern of events associated with the Post-WWII era. The subject property was also found to not be closely associated with any specific historical event or recognized persons of historic significance. Architecturally, there is no evidence that the residence or garage were designed by a prominent architect or builder of that time period nor is it an exceptional example of ranch-style suburban residences. Based on the information contained within this form, it does not appear the subject residence at 13649 3rd Street and the related accessory structure does not appear eligible for listing in the California Register of Historical Resources or the National Register of Historic Places.

B11. Additional Resource Attributes: (List attributes and codes)
HP4 & HP46
***B12. References:**
San Bernardino County Tax Assessment and Building and Safety Records

B13. Remarks: None.

:B14. Evaluator: Steven C. Maurer

: Date of Evaluation: 03/16/2022

(This space reserved for official comments.)

Steven C. Mauser
YUCAIPA VALLEY HISTORICAL Society
PRESIDENT

(Sketch Map with north arrow required.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

*Resource Name or # (Assigned by recorder)

*Recorded by:

*Date: ☐ Continuation ☐ Update

***P3a. Description** (continued):

At the eastern end of the building, the two-car garage opens to a partial pavement/gravel driveway. The materials and colors of the garage match the residence with light gray stucco and white fascia; however, the fascia along the southern facade shows signs of significant degradation. The garage has a two-vehicle capacity and features a light gray roll-up door with white trim.

The property is landscaped with two planters containing medium sized hedges along the western, front facade with the southernmost planter wrapping around to the south side of the residence. The remaining landscaping consist of overgrown weeds and grass. Perimeter fencing include a wooden fence extending most of the northern, side property line that starts at the front of the residence, the remaining portion of the northern property line and the remaining portions of the front yard are bound by a chain link fence and gate, and the southern and eastern property lines have no fencing. The building itself appears to be in fair condition with no indication that the residence is occupied.

FALLBROOK MEADOWS RESIDENTIAL PROJECT NOISE IMPACT ANALYSIS

City of Yucaipa

September 2, 2021

ganddini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

FALLBROOK MEADOWS RESIDENTIAL PROJECT NOISE IMPACT ANALYSIS

City of Yucaipa

September 2, 2021

prepared by
Roma Stromberg, INCE, MS
Catherine Howe, MS

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Project No. 19403

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EXECUTIVE SUMMARY

The purpose of this report is to provide an assessment of the noise impacts associated with development and operation of the proposed Fallbrook Meadows Residential project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Yucaipa.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

Project Location

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished.

Project Description

The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street.

Construction Impacts

Modeled unmitigated construction noise levels ranged between 51.1 and 80.2 dBA L_{eq} at the closest sensitive receptor property lines to the project site.

Construction noise sources are regulated within the City of Yucaipa Municipal Code Section 87.0905(b) which limits construction activities to between the hours of 7:00 AM and 7:00 PM weekdays and Saturdays with no construction allowed on Sundays or Federal holidays. With compliance with the City's Municipal Code, it is assumed that construction would not occur during the noise-sensitive nighttime hours.

Impacts related to construction noise will be further minimized with adherence to applicable Municipal Ordinances and implementation of the recommended measures presented in Section 7 of this report. Impacts would be less than significant.

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Project generated vehicle trips are anticipated to increase roadway noise between approximately 0.03 to 1.92 dBA CNEL. Therefore, the change in noise level due to project generated vehicle traffic would not be audible and would be considered less than significant.

Traffic Noise Impacts to the Proposed Project

The City of Yucaipa General Plan identifies exterior noise levels up to 60 dBA CNEL and interior noise levels of up to 45 dBA CNEL as the standard for multi-family residential uses. Roadways that may generate enough traffic noise under buildout conditions to affect the proposed project include County Line Road.

The City of Yucaipa Noise Hazard Overlay shows that the project site falls outside of the 60 dBA future noise level contour for County Line Road. Therefore, the project would not exceed the City's 60 dBA CNEL exterior or 45 dBA CNEL interior noise standards for multi-family residential uses. Impacts to the proposed project would be less than significant.

Groundborne Vibration Impacts

Temporary vibration levels could be considered annoying and result in potential architectural damage to the residential receptors to the north and south of the project site. Annoyance is expected to be short-term, occurring only during grading and site preparation. Mitigation measures to reduce potential impacts related to vibration are presented in Section 7 of this report. With incorporation of mitigation requiring vibratory rollers, or other similar vibratory equipment, to be prohibited within 23 feet and large bulldozers within 13 feet of any residential structure to the north and/or south of the project site, vibration levels associated with project construction would be reduced to less than significant levels.

Construction Noise Recommended Reduction Measures

In addition to adherence to the City of Yucaipa Municipal Code which limits the construction hours of operation, the following measures are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment shall be shut off and not left to idle when not in use.

4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

6. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

Vibration Mitigation Measures

1. The use of vibratory rollers, or other similar vibratory equipment, is to be prohibited within 23 feet and large bulldozers within 13 feet of any residential structure to the north and/or south of the project site.

1. INTRODUCTION

This section describes the purpose of this noise impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed Fallbrook Meadows Residential project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Yucaipa.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street. Figure 2 illustrates the project site plan.

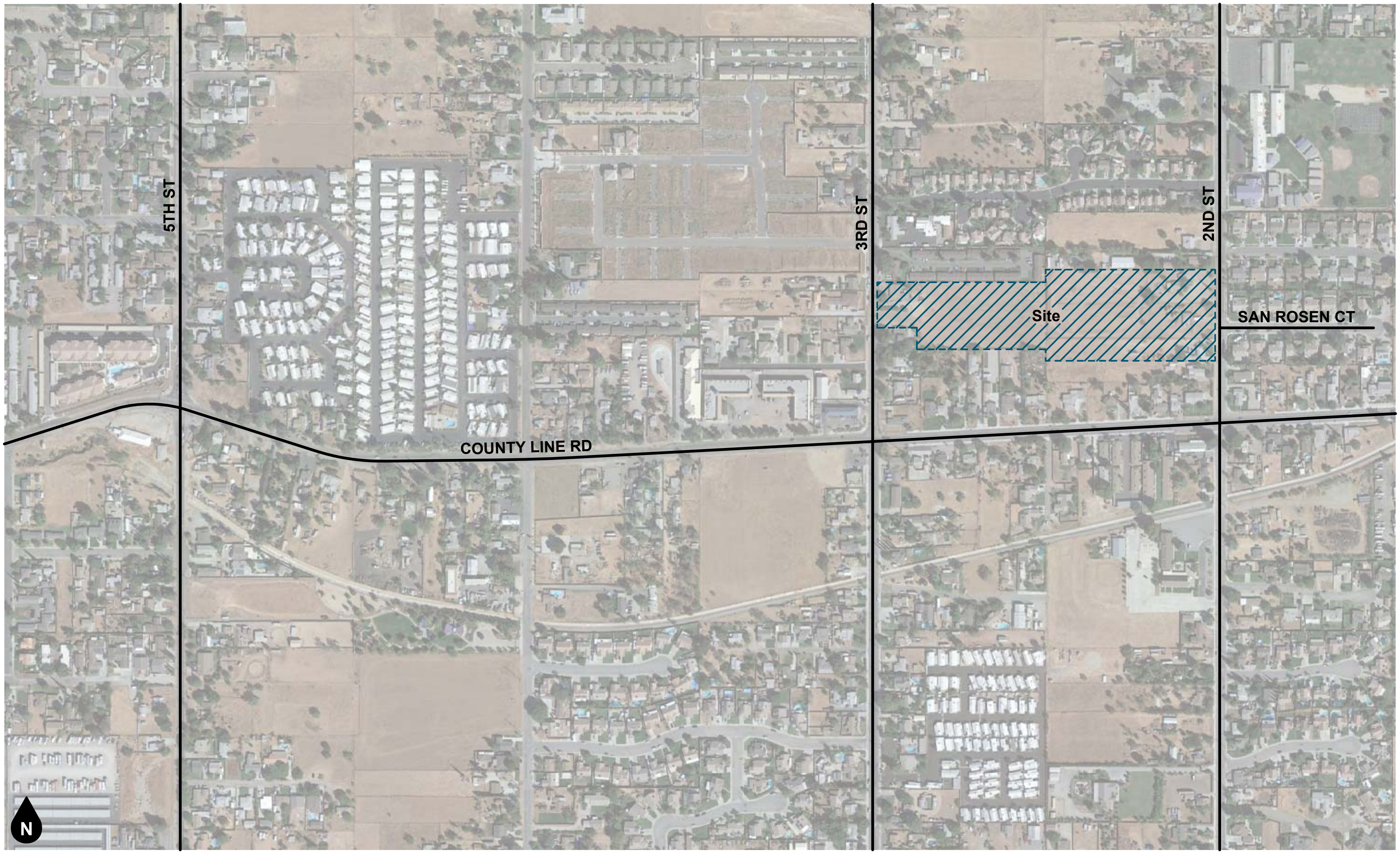


Figure 1
Project Location Map

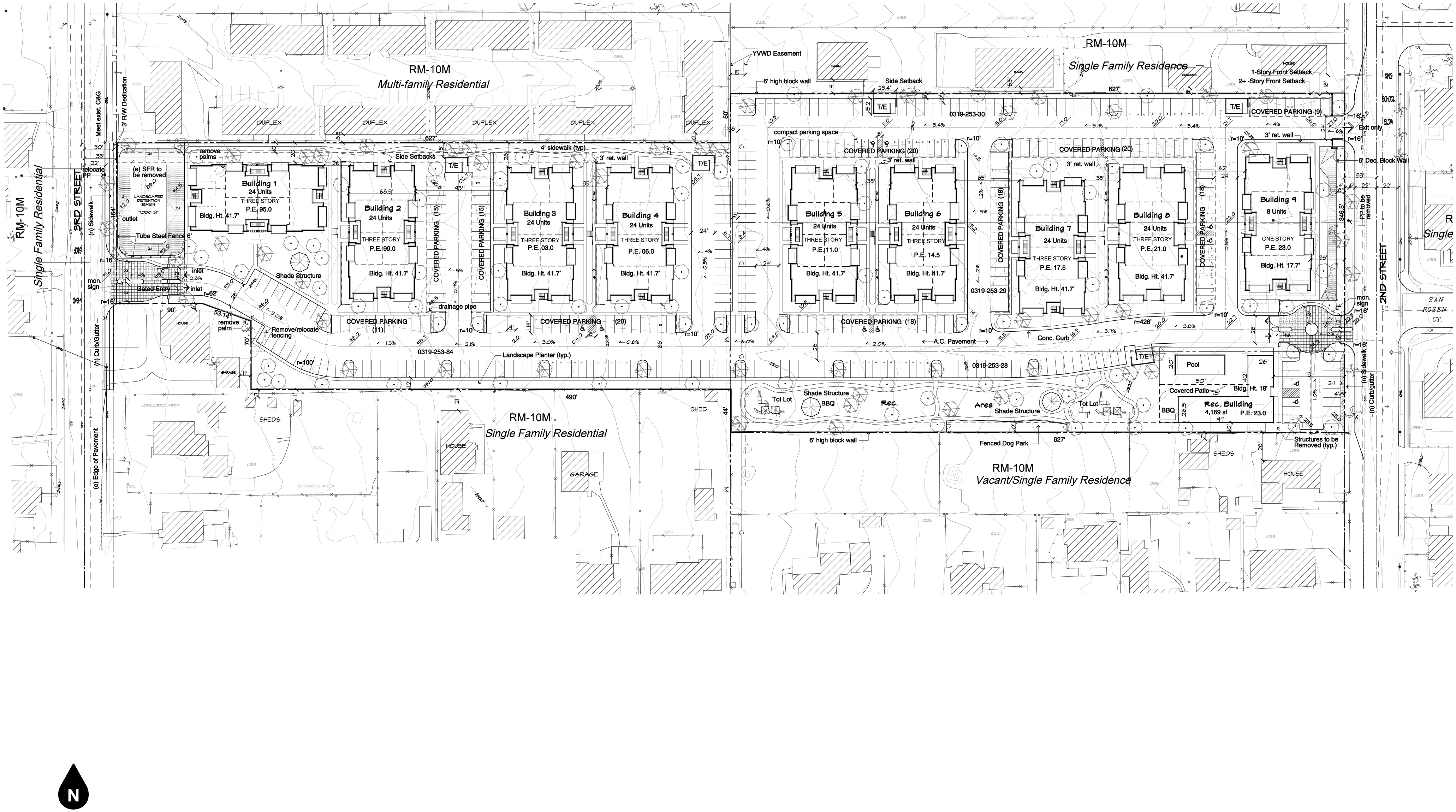


Figure 2
Site Plan

Fallbrook Meadows Residential Project
Noise Impact Analysis
19403

2. NOISE AND VIBRATION FUNDAMENTALS

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the “A-weighted” noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation’s Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

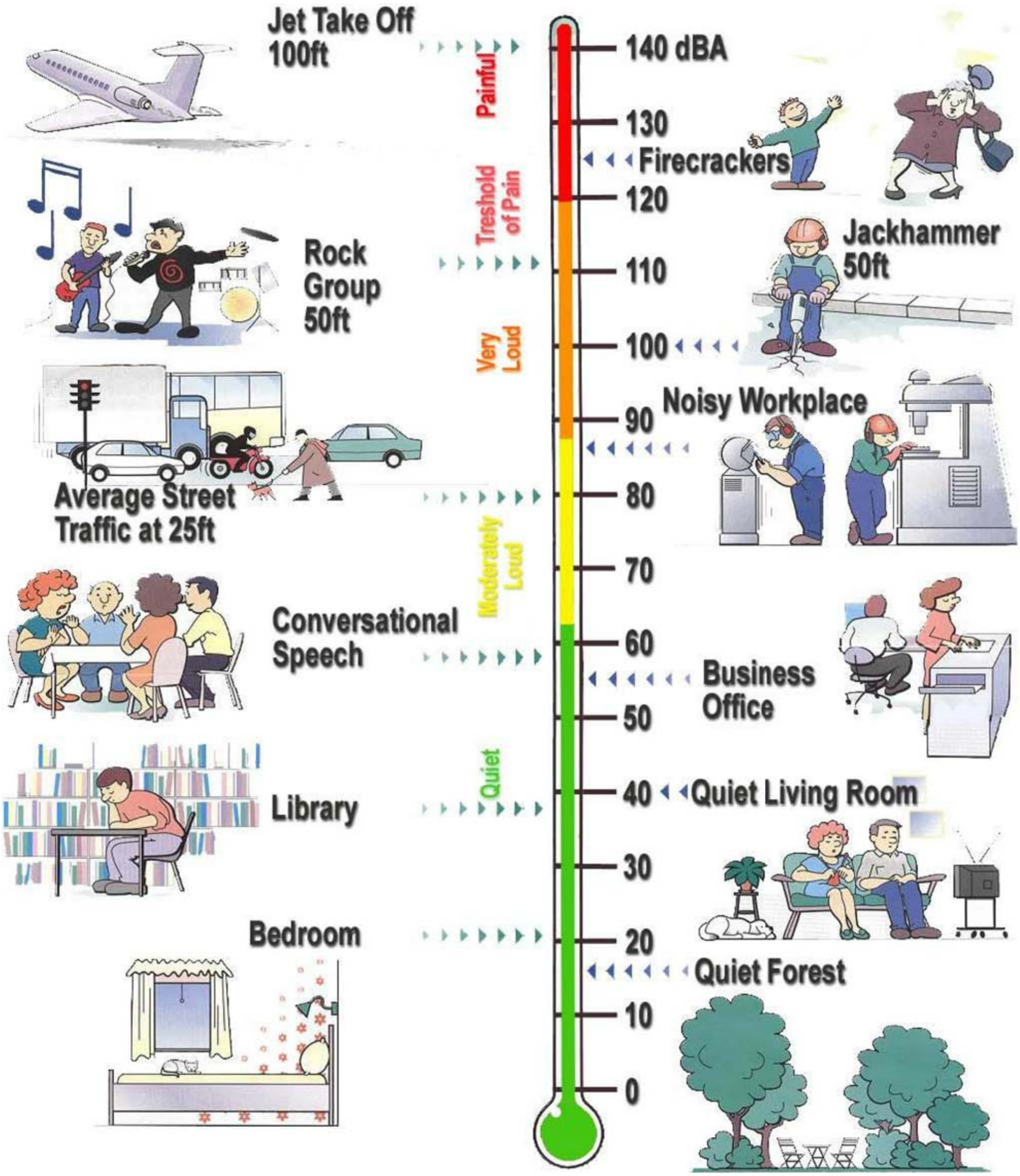
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression 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.

Compression waves, or P-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. Shear waves, or S-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”.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

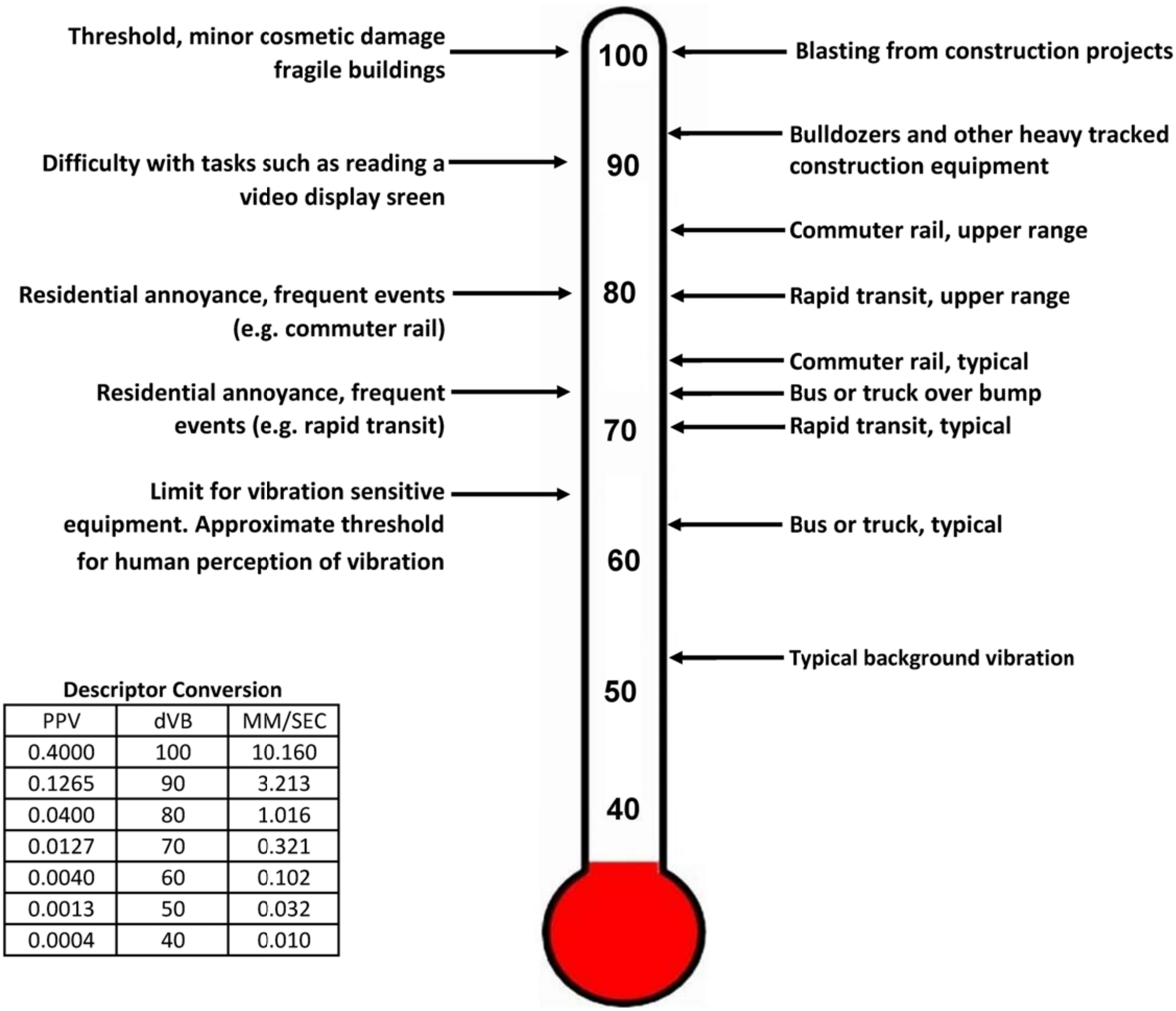
Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation “VdB” for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.



Source: Bruel & Kjaer 2001

Figure 3
Weighted Sound Levels and Human Response



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by 2nd Street to the east, single-family residential uses to the south, 3rd Street to the west, and multi-family and single-family residential uses to the north of the project site.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the single-family residential uses adjacent to the north and south, approximately 60 feet to the east (across 2nd Street), and approximately 60 feet to the west (across 3rd Street) and the multi-family residential uses located adjacent to the north of the project site. In addition, the Church of Jesus Christ is also located approximately 65 feet north and Calimesa Elementary School is located approximately 221 feet northeast (across 2nd Street) of the project site.

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section SI.4 2014, Class 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, four (4) 15-minute daytime noise measurements were taken between 12:53 PM and 2:54 PM on July 27, 2021. Field worksheets and noise measurement output data are included in Appendix C.

As shown on Figure 5, the noise measurements were taken near the residential dwelling units located to the southwest of the project site (along 3rd Street) (NM1), near the residential dwelling units located to the south of the project site (along County Line Road) (NM2), near the residential dwelling units located to the southeast of the project site (along 2nd Street) (NM3), and near the residential dwelling units and church uses located to the north of the project site (along 2nd Street) units (NM4). Table 1 provides a summary of the short-term ambient noise data. Short-term ambient noise levels were measured between 52.3 and 69.3 dBA L_{eq}. The dominant noise sources were vehicles traveling along 3rd Street, County Line Road, 2nd Street, and other surrounding roadways.

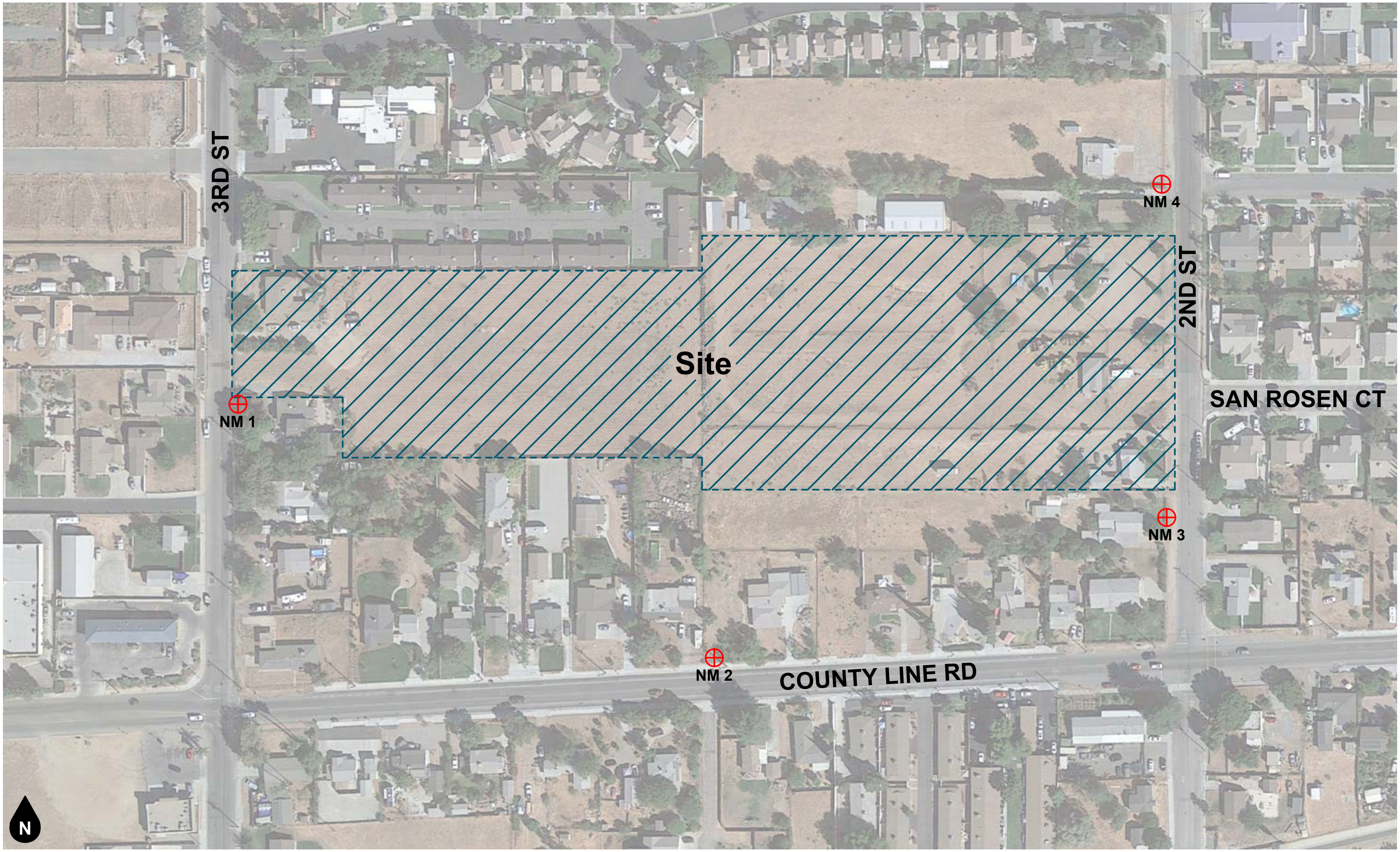
Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
NM1	12:53 PM	64.5	79.1	43.7	74.6	70.1	61.5	53.4
NM2	1:27 PM	69.3	84.7	45.0	77.0	74.1	70.2	64.4
NM3	2:10 PM	55.4	73.2	43.9	65.1	58.9	51.8	49.4
NM4	2:39 PM	52.3	68.5	39.9	63.3	55.3	48.0	44.7

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on July 27, 2021.



Legend
Noise Measurement Location
NM 1

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Yucaipa has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 2).

California Environmental Quality Act

The California Environmental Quality Act Guidelines (Appendix G) establishes thresholds for noise impact analysis. This noise study includes analysis of noise and vibration impacts necessary to assess the project in light of the following Appendix G Checklist Thresholds.

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?

Substantial increases in ambient noise levels are usually associated with project construction noise (temporary) and project operational noise (permanent).

Project Construction Noise: Construction noise sources are regulated within the City of Yucaipa Municipal Code Section 87.0905(b) which limits construction activities to between the hours of 7:00 AM and 7:00 PM weekdays and Saturdays with no construction allowed on Sundays or Federal holidays. The City of Yucaipa does not include a numerical noise standard associated with construction noise.

Project Operational Noise (permanent): On-site operational noise is usually only evaluated for commercial and industrial projects. Quantitative analysis of on-site operational noise is typically not conducted for residential projects as they usually do not include stationary noise sources that could result in substantial increases in ambient noise levels resulting in violation of established standards. Therefore, the evaluation of project operational noise in this study is limited to the potential impacts associated with project generated vehicle traffic (off-site noise). Depending upon how many units are proposed and the existing noise environment, project generated vehicle trips could result in substantial increases in noise levels.

Based on previous noise studies prepared for projects located in the City, project generated vehicle traffic is considered significant if project-related traffic increases noise levels at nearby sensitive receptors by 5 dB. Although individuals' reactions to changes in noise vary, empirical studies have shown people begin to notice changes in environmental noise levels of around 5 dBA. Thus, average changes in noise levels less than 5 dBA cannot be considered as producing adverse impacts because changes of that magnitude are imperceptible by the vast majority of persons (USEPA 1974).

b) Generate excessive groundborne vibration or groundborne noise levels?

As shown in Table 3, the threshold at which there is a risk to "architectural" damage to historic and some older buildings is a peak particle velocity (PPV) of 0.25, at older residential structures a PPV of 0.3, and at new residential structures a PPV of 0.5. Table 4 shows that a PPV of 0.4 is the threshold at which groundborne vibration becomes severe in regard to annoyance. Impacts would be significant if construction activities result in groundborne vibration of 0.25 PPV or higher at a sensitive receptor.

California Department of Transportation (Caltrans)

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and although the project is not subject to these regulations, it serves as useful tools to evaluate vibration impacts. These guidelines recommend that a standard of 0.25 inches per second (in/sec) PPV not be exceeded for the protection of historic and some old buildings (California Department of Transportation, 2020).

LOCAL REGULATIONS

City of Yucaipa General Plan

The City of Yucaipa has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 2).

The City of Yucaipa General Plan Public Safety Element contains goals and policies related to noise within the City. The General Plan goals and policies which apply to the proposed project are presented below.

Goal S-6 Noise and Vibration Safety: Appropriate community noise and vibration levels that balance the need for peaceful environments for sensitive land uses with the needs of local businesses and regional land uses.

Policy S-6.1: Noise Assessment. Assess the compatibility of proposed land uses with the noise environment when preparing, revising, or reviewing applications for development projects or land use changes.

Policy S-6.2: Acoustical Studies. Require acoustical studies for proposed projects within areas that exceed 60 dBA; discourage siting of new noise-sensitive uses in areas exceeding 65 dBA without appropriate mitigation.

Policy S-6.3: Noise Insulation and Vibration Standards. Require new projects to comply with noise insulation and vibration reduction standards in local, regional, state, and federal regulations, as applicable.

Policy S-6.4: Noise Nuisance Standards. Regulate the control of residential noise nuisances—such as parties, barking dogs, other animals, and limited agricultural operations—through the City's municipal code.

Policy S-6.5: Development Patterns. Locate new development in areas where noise levels are appropriate for the use. Limit development of noise-producing uses adjacent to noise-sensitive receptors and require that noise-producing land uses have adequate mitigation.

Policy S-6.6: Land Use-Noise Compatibility. Require mitigation of exterior and interior noise to the levels shown in Table 6-3 of the Safety Element (Table 2 in this report). Encourage the use of building design, site planning, landscaping, and other features to reduce noise levels.

Policy S-6.7: Vibration Reduction. Minimize vibration impacts from construction sites, roadways, and other sources with a combination of setbacks, structural design features, and operational regulations as appropriate.

City of Yucaipa Municipal Code

Section 87.0905 Noise.

b) Noise Standards

1. Table 3 describes the noise standard for emanations from any source as it affects adjacent properties.

2. No person shall operate or cause to be operated any source of sound at any location or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such

person which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed any of the following levels.

A. The noise standard for that receiving land use [as specified in Table 3] for a cumulative period of more than 30 minutes in any hour.
B. The noise standard plus 5 dBA for a cumulative period of more than five minutes in any hour.
C. The noise standard plus 10 dBA for a cumulative period of more than five minutes in any hour.
D. The noise standard plus 15 dBA for a cumulative period of more than one minute in any hour.
E. The noise standard plus 20 dBA for any period of time

c) If the measured ambient level exceeds any of the first four noise limit categories above, the allowable noise exposure standard shall be increased to reflect said ambient noise level. If the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

d) If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 3 shall be reduced by 5 dBA.

e) Exempt noises

1. The following noise sources are exempt.

A. Motor vehicles not under the control of the industrial use.
B. Emergency equipment, vehicles, and devices
C. Temporary construction, repair, or demolition activities between 7:00 AM and 7:00 PM, except Sundays and Federal holidays.

Section 87.0910 Vibration.

a) Vibration Standard. No ground vibration shall be allowed which can be felt without the aid of instruments at or beyond the lot line, nor will any vibration be permitted which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.

b) Vibration Measurement. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings are to be made at points of maximum vibration along any lot line next to a lot within a residential, commercial, and industrial land use district.

c) Exempt Vibrations

1. The following sources of vibration are not regulated by this Code.

A. Motor vehicles not under the control of the subject use.
B. Temporary construction, maintenance, or demolition activities between 7:00 AM and 7:00 PM, except Sundays and Federal holidays.

Table 2
Land Use-Noise Compatibility Standards

Category	Land Uses	Ldn (or CNEL), dB	
		Interior	Exterior
Residential	Single and Multi-family Duplex	45	60*
	Mobile Home	45	60*
	Hotel, Motel, Lodging	45	60*
Commercial	Commercial Retail, Bank, Restaurant	50	--
	Office Building, R&D, Offices	45	65
	Amphitheater, Auditorium, Theater	45	--
Institutional	Hospital, School, Church, Library	45	65
Open Space	Park and Recreational Areas	--	65

Source: City of Yucaipa General Plan Public Safety Element Table S-3, 2016.

*Note: An exterior noise level of up to 65 dBA will be allowed, provided exterior noise levels are substantially mitigated through the reasonable use of best available noise reduction technology and interior noise does not exceed the 45 dBA with windows and doors closed.

Table 3
Noise Standards

Affected Land Use (receiving noise)	Noise Standards	
	Noise Level (Ldn)	Time Period
Residential	55 dBA	7:00 AM to 10:00 PM
	55 dBA	10:00 PM to 7:00 AM
Professional Services	55 dBA	Anytime
Other Commercial	60 dBA	Anytime
Industrial	70 dBA	Anytime

Source: City of Yucaipa Municipal Code Section 87.0905(b)(1).

Table 4
Guideline Vibration Damage Potential Threshold Criteria

Structure Condition	Maximum PPV (in/sec)	
	Transient Sources[1]	Intermittent Sources[1]
Extremely fragile historic buildings, ruins, anceint 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

Notes:

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 19, April 2020.

(1) 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 5
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Notes:
Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 20, April 2020.
(1) 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.

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the project site. The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2021). For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Construction noise worksheets are provided in Appendix D.

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRAFFIC NOISE PREDICTION MODEL

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emissions Levels.[1] Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification (i.e., collector, secondary, major or arterial), the roadway active width (i.e., distance between the center of the outermost travel lanes on each side of the roadway), travel speed, truck mix (i.e., percentage of automobiles, medium trucks, and heavy trucks in the traffic volume), roadway grade and site conditions (hard or soft ground surface relating to the absorption of the ground, pavement, or landscaping). Research conducted by Caltrans identifies that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model.[2] Therefore, surfaces adjacent to all modeled roadways were assumed to have a “soft site”. Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing and Existing Plus Project vehicle mix were obtained from the project's traffic study (Ganddini Group 2021). Vehicle/truck mixes and D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling. Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

[1] California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.

[2] California Department of Transportation. Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report. June 1995. FHWA/CA/TL-95/23.

6. IMPACT ANALYSIS

This impact discussion analyzes the potential for noise and/or groundborne vibration impacts to cause the exposure of a person to, or generation of, noise levels in excess of established City of Yucaipa standards related to: construction, operation, and transportation noise related impacts to, or from, the proposed project.

IMPACTS RELATED TO CONSTRUCTION NOISE

The existing single-family residential uses located to the north, south, east, and west, multi-family residential uses located to the north and west, the school use to the northeast, and the church use to the north of the project site may be affected by short-term noise impacts associated with construction noise. Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

The construction phases for the proposed project are anticipated to include demolition, grading, building construction, paving and architectural coating. A summary of noise level data for a variety of construction equipment compiled by the U.S. Department of Transportation is presented in Table 6. 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.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 7. Worksheets for each phase are included as Appendix D.

A comparison of existing noise levels and existing plus project construction noise levels are presented in Table 7. NM1 was chosen to represent noise levels at the property lines of the multi-family residential receptors to the north and the multi-family and single-family residential receptors to the west, NM2 was chosen to represent noise levels at the property lines of the single-family residential receptors to the south, NM3 was chosen to represent noise levels at the property lines of the single-family residential uses to the east, and NM4 was chosen to represent noise levels at the property lines of the single-family and church uses to the north and the school use to the northeast of the project site.

As shown in Table 7, modeled unmitigated construction noise levels ranged between 51.1 and 80.2 dBA L_{eq} at the closest sensitive receptor property lines to the project site.

As discussed earlier, construction noise sources are regulated within the City of Yucaipa Municipal Code Section 87.0905(b) which limits construction activities to between the hours of 7:00 AM and 7:00 PM weekdays and Saturdays with no construction allowed on Sundays or Federal holidays. With compliance with the City's Municipal Code, it is assumed that construction would not occur during the noise-sensitive nighttime hours.

Impacts related to construction noise will be minimized with adherence to the above Municipal Ordinances and implementation of the recommended measures presented in Section 7 of this report.

NOISE IMPACTS TO OFF-SITE RECEPTORS DUE TO PROJECT GENERATED TRIPS

During operation, the proposed project is expected to generate a net total of approximately 1,426 average daily trips with 89 trips during the AM peak-hour and 108 trips during the PM peak-hour. A project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way 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 with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 8. 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 and is demonstrated in Table 8.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 9.

As shown in Table 9, modeled Existing traffic noise levels range between 55-74 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 55-74 dBA CNEL at the right-of-way of each modeled roadway segment.

As stated previously, project generated vehicle traffic is considered significant if project-related traffic increases noise levels at nearby sensitive receptors by 5 dB.

Project generated vehicle traffic is anticipated to increase the noise between approximately 0.03 to 1.92 dBA CNEL. Therefore, a change in noise level would not be audible and would be considered less than significant. No mitigation is required.

TRAFFIC NOISE IMPACTS TO THE PROPOSED PROJECT

The City of Yucaipa General Plan identifies exterior noise levels up to 60 dBA CNEL and interior noise levels of up to 45 dBA CNEL as the standard for multi-family residential uses (see Table 2).

The project site is bound by 2nd on the east, 3rd street on the west, and is approximately 230 feet north of County Line Road to the south. The City of Yucaipa General Plan Transportation Element identifies County Line Road, in the vicinity of the project site, as a Secondary Highway (Arterial) (80-foot right-of-way) roadway and 2nd and 3rd streets as local roadways. As local roadways, 2nd and 3rd Streets will not generate enough vehicle traffic to be acoustically significant.

Figure S-6 of the Public Safety Element of the City of Yucaipa General Plan (see Figure 6) provides noise contours for modeled future traffic volumes for County Line Road and demonstrates that the proposed project will not be exposed to noise levels that exceed the City's 60 dBA CNEL exterior noise standard at the proposed multi-family residential uses. In addition, typical new construction provides at least 20 dB of exterior to interior noise reduction with a closed-window condition. The project would also not exceed the City's 45 dBA CNEL interior noise standard. Impacts to the proposed project would be less than significant.

GROUNDBORNE VIBRATION IMPACTS

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 10, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential. (California Department of Transportation, 2020)

As shown in Table 4, vibration becomes severe to people in buildings at a PPV of 0.4.

Structures associated with the single-family residential use to the north are located between approximately four and 17 feet from the northern project property line. At 4 feet, use of a vibratory roller would be expected to generate a PPV of 3.281 in/sec and a bulldozer would be expected to generate a PPV of 1.391 in/sec. Therefore, use of a vibratory roller or large bulldozer could be considered annoying to the single-family receptor to the north and mitigation is required.

At 7 feet, which is the distance to the next closest off-site building, the multi-family residential dwelling units to the north, use of a vibratory roller would be expected to generate a PPV of 1.471 in/sec and a bulldozer would be expected to generate a PPV of 0.601 in/sec. Therefore, use of a vibratory roller or large bulldozer could be considered annoying to the multi-family receptors to the north and mitigation is required.

Structures associated with the single-family residential uses to the south are located as close as approximately 13 feet from the southern project property line. At 13 feet, use of a vibratory roller would be expected to generate a PPV of 0.56 in/sec and a bulldozer would be expected to generate a PPV of 0.237 in/sec. Therefore, use of a vibratory roller could be considered annoying to the single-family receptors to the south and mitigation is required.

Annoyance is expected to be short-term, occurring only during site grading and preparation. Mitigation measures to reduce potential impacts related to annoyance, as discussed in the Architectural Damage section below, are presented in Section 8 of this report and would reduce potential annoyance related vibration impacts to less than significant.

Architectural Damage

Vibration generated by construction activity generally has the potential to damage structures. This damage could be structural damage, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. (California Department of Transportation, 2020)

Table 5 identifies a PPV level of 0.25 as the threshold at which there is a risk to “architectural” damage to historic and some old buildings. Mitigation requiring vibratory rollers be prohibited within 23 feet and large bulldozers within 13 feet of any residential structure to the north and south of the project site would be required. With incorporation of mitigation, temporary vibration levels associated with project construction would be less than significant. Vibration worksheets are provided in Appendix F.

Table 6 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 6 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014
http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 7
Construction Noise Levels (dBA L_{eq})

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)[3]
Grading	North (Multi-Family Residential)	64.5	79.9
	North (Single-Family Residential)	52.3	77.2
	North (Church)	52.3	74.3
	Northeast (School)	52.3	64.1
	South (Single-Family Residential)	69.3	79.7
	East (Single-Family Residential)	55.4	65.2
	West (Single-family & Multi-Family Residential)	64.5	65.2
Grading	North (Multi-Family Residential)	64.5	80.2
	North (Single-Family Residential)	52.3	77.5
	North (Church)	52.3	74.6
	Northeast (School)	52.3	64.4
	South (Single-Family Residential)	69.3	80.0
	East (Single-Family Residential)	55.4	65.5
	West (Single-family & Multi-Family Residential)	64.5	65.5
Building Construction	North (Multi-Family Residential)	64.5	78.0
	North (Single-Family Residential)	52.3	75.3
	North (Church)	52.3	72.4
	Northeast (School)	52.3	62.1
	South (Single-Family Residential)	69.3	77.8
	East (Single-Family Residential)	55.4	63.2
	West (Single-family & Multi-Family Residential)	64.5	63.3
Paving	North (Multi-Family Residential)	64.5	75.3
	North (Single-Family Residential)	52.3	72.5
	North (Church)	52.3	69.7
	Northeast (School)	52.3	59.4
	South (Single-Family Residential)	69.3	75.1
	East (Single-Family Residential)	55.4	60.5
	West (Single-family & Multi-Family Residential)	64.5	60.6
Architectural Coating	North (Multi-Family Residential)	64.5	67.9
	North (Single-Family Residential)	52.3	65.2
	North (Church)	52.3	62.3
	Northeast (School)	52.3	52.1
	South (Single-Family Residential)	69.3	67.7
	East (Single-Family Residential)	55.4	53.2
	West (Single-family & Multi-Family Residential)	64.5	53.2

Notes:

(1) Construction noise worksheets are provided in Appendix D.

(2) Per measured existing ambient noise levels. NM1 used for the multi-family residential receptors to the north and the multi-family and single-family residential receptors to the west, NM2 was used for the single-family residential receptors to the south, NM3 was used for the single-family residential uses to the east, and NM4 was used for the single-family and church uses to the north and the school use to the northeast of the project site.

(3) For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the nearest property line of residential properties with existing residential buildings.

Table 8
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing	Existing Plus Project		
County Line Road	West of 5th Street	13,600	14,170	35	Soft
	5th Street to 3rd Street	10,500	11,280	35	Soft
	3rd Street to 2nd Street	7,800	7,940	35	Soft
	East of 2nd Street	6,800	7,090	35	Soft
5th Street	North of County Line Road	10,100	10,170	35	Soft
	South of County Line Road	6,400	6,540	25	Soft
3rd Street	North of Project Site	2,600	2,670	35	Soft
	Project Site to County Line Road	3,300	4,010	35	Soft
	South of County Line Road	2,600	2,670	25	Soft
2nd Street	North of San Rosen Court	700	840	25	Soft
	San Rosen Court to County Line Road	900	1,400	25	Soft
	South of County Line Road	700	770	25	Soft

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Vehicle Distribution (Heavy Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:

(1) Existing and project average daily traffic volumes obtained from the Fallbrook Meadows Residential Project Traffic Impact Analysis, Ganddini Group Inc. (August 2021).

(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 9
Change in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 5 dB or More?
County Line Road	West of 5th Street	40	73.68	73.86	0.18	Yes	No
	5th Street to 3rd Street	40	72.56	72.87	0.31	Yes	No
	3rd Street to 2nd Street	40	71.27	71.34	0.07	Yes	No
	East of 2nd Street	40	70.67	70.85	0.18	No	No
5th Street	North of County Line Road	40	72.39	72.42	0.03	Yes	No
	South of County Line Road	40	68.58	68.67	0.09	Yes	No
3rd Street	North of Project Site	30	63.26	63.38	0.12	Yes	No
	Project Site to County Line Road	30	64.30	65.14	0.84	Yes	No
	South of County Line Road	30	60.47	60.58	0.11	Yes	No
2nd Street	North of San Rosen Court	30	54.77	55.56	0.79	Yes	No
	San Rosen Court to County Line Road	30	55.86	57.78	1.92	Yes	No
	South of County Line Road	30	54.77	55.18	0.41	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Yucaipa General Plan Transportation Element.

(3) Per the City of Yucaipa exterior standard for residential uses (see Table 2).

Table 10
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec

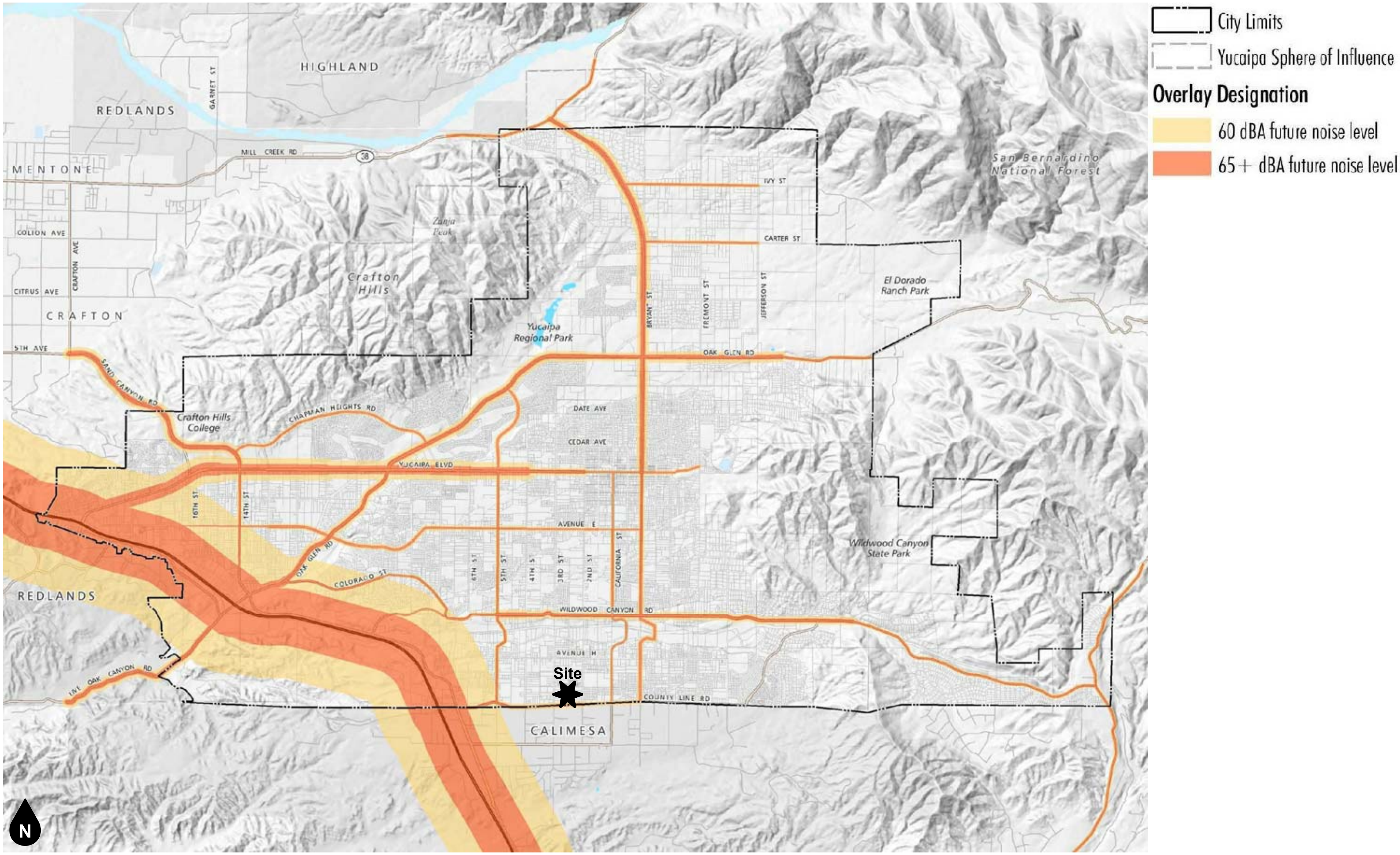


Figure 6
Noise Hazard Overlay District

7. MEASURES TO REDUCE IMPACTS

CONSTRUCTION NOISE RECOMMENDED REDUCTION MEASURES

In addition to adherence to the City of Yucaipa Municipal Code which limits the construction hours of operation, the following measures are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment shall be shut off and not left to idle when not in use.

4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

6. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

VIBRATION MITIGATION MEASURES

1. The use of vibratory rollers, or other similar vibratory equipment, is to be prohibited within 23 feet and large bulldozers within 13 feet of any residential structure to the north and/or south of the project site.

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2004 Transportation and Construction Induced Vibration Guidance Manual, prepared for the California Department of Transportation - Noise, Vibration, and Hazardous Waste Management Office

Office of Planning and Research

2003 State of California General Plan Guidelines

Riverside, County of

2001 General Plan, Chapter 4, Figure C-3 "Link Volume Capacities/Level of Service for Riverside County Roadways".

2009 County of Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and County.

U.S. Department of Transportation

2006 FHWA Roadway Construction Noise Model User's Guide. January.

Yucaipa, City of

2016 City of Yucaipa General Plan. April.

2021 City of Yucaipa Municipal Code. March.

APPENDICES

APPENDIX A

LIST OF ACRONYMS

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
Lp	Sound Pressure Level
LOS C	Level of Service C
Lw	Sound Power Level
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

Appendix B

Glossary

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	Lmax is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. Lmin is the minimum level.
Offensive/ Offending/Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEET

Noise Measurement
Field Data

Project Name: Fallbrook Meadows Residential Project, City of Yucaipa. **Date:** July 27, 2021

Project #: 19403

Noise Measurement #: NM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 13673 3rd Street, Yucaipa, California 92399

Site Description (Type of Existing Land Use and any other notable features): Project site: Flat grassy land w/fences. Single-family & multi-family residential to north, single-family residential to south, 3rd Street to west, & 2nd street to east, a church further north & a school to NE. Noise Measurement Site: Project site to north, single-family residential to east & southeast, 3rd St to west w/ single-family residential further west.

Weather: <40% white cloud, filtered sunshine, hot, humid. **Settings:** SLOW FAST

Temperature: 88 deg F **Wind:** 9 mph **Humidity:** 40% **Terrain:** Flat

Start Time: 12:53 PM **End Time:** 1:08 PM **Run Time:**

Leq:	64.5	dB
Lmax	79.1	dB
L2	74.6	dB
L8	70.1	dB
L25	61.5	dB
L50	53.4	dB

Primary Noise Source: Traffic noise from 42 vehicles passing microphone traveling along 3rd Street
Traffic ambiance from County Line Road, 2nd Street & other surrounding roads.

Secondary Noise Sources: Leaves rustling in gentle 9 mph breeze, bird song. Aircraft, residential ambiance, distant leaf blower & lawn mower, distant dogs barking, & wind chime.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT2	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	7/27/2021		

Noise Measurement
Field Data

PHOTOS:

NM1 looking ESE across front yard of residence 13673 3rd Street, Yucaipa.

NM1 looking W across 3rd Street towards residence 13666 3rd Street, Yucaipa

Summary	
File Name on Meter	LxT_Data.105.s
File Name on PC	LxT_0001152-20210727 125303-LxT_Data.105.ldbin
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM1 34° 0'19.69"N 117° 2'50.98"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	19403 Fallbrook Meadows
	Residential Project, City of Yucaipa

Measurement	
Start	2021-07-27 12:53:03
Stop	2021-07-27 13:08:03
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-07-27 12:52:35
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	143.9 dB

Results		
LAeq		64.5
LAE		94.0
EA		280.384 µPa²h
EA8		8.972 mPa²h
EA40		44.861 mPa²h
LZpeak (max)	2021-07-27 12:54:33	104.7 dB
LASmax	2021-07-27 13:07:03	79.1 dB
LASmin	2021-07-27 13:06:43	43.7 dB
SEA		-99.9 dB
LAFTM5		70.8 dB
Corrected dBA		68.1 dBA
LCeq		71.5 dB
LAeq		64.5 dB
LCeq - LAeq		7.1 dB
LAIeq		67.2 dB
LAeq		64.5 dB
LAIeq - LAeq		2.7 dB
Overload Count		0

Statistics	
LA2.00	74.6 dB
LA8.00	70.1 dB
LA25.00	61.5 dB
LA50.00	53.4 dB
LA66.60	50.2 dB
LA90.00	46.8 dB

Noise Measurement
Field Data

Project Name: Fallbrook Meadows Residential Project, City of Yucaipa. **Date:** July 27, 2021

Project #: 19403

Noise Measurement #: NM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 34816 County Line Road, Yucaipa, California 92399

Site Description (Type of Existing Land Use and any other notable features): Project site: Flat grassy land w/fences. Single-family & multi-family residential to north, single-family residential to south, 3rd Street to west, & 2nd street to eas, a church further north & a school to NE. Noise Measurement Site: County Line Rd to south w/ single-family residential further south & single-family residential to north, east, and west.

Weather: <40% white cloud, filtered sunshine, hot, humid. **Settings:** $\boxed{\text{SLOW}}$ FAST

Temperature: 89 deg F **Wind:** 9 mph **Humidity:** 40% **Terrain:** Flat

Start Time: 1:27 PM **End Time:** 1:42 PM **Run Time:**

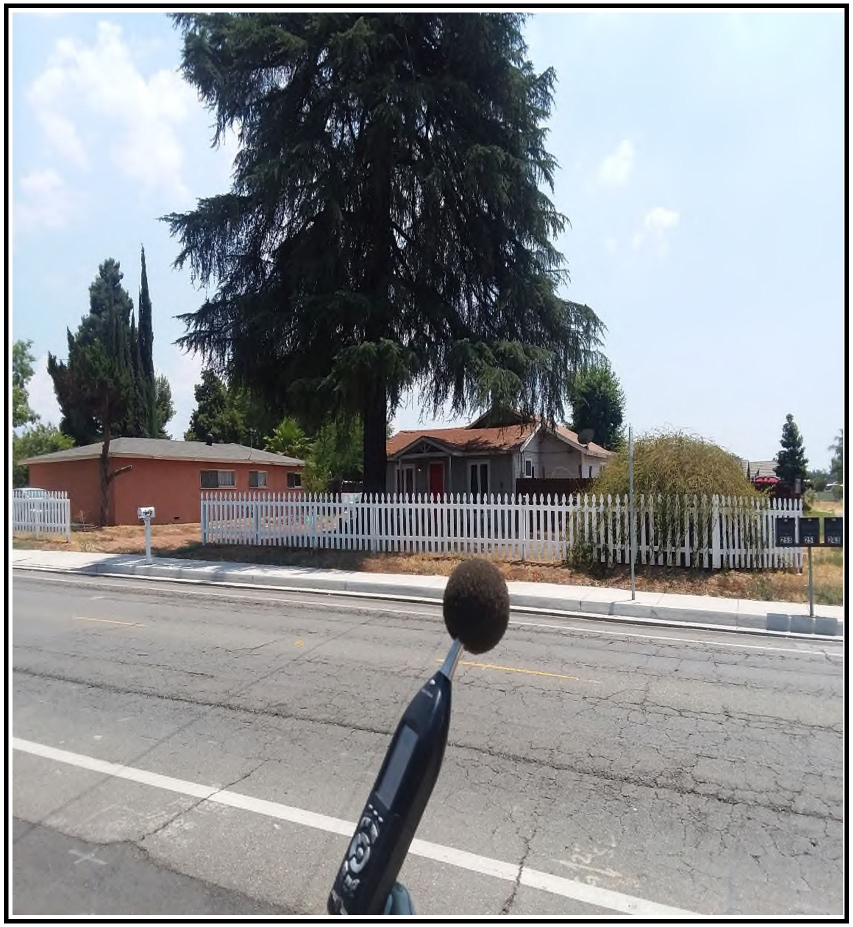
Leq:	69.3	dB
Lmax	84.7	dB
L2	77.0	dB
L8	74.1	dB
L25	70.2	dB
L50	64.4	dB

Primary Noise Source: Traffic noise from 130 vehicles passing microphone traveling along County Line Road. Traffic ambiance from 2nd Street, 3rd Street & other surrounding roads.

Secondary Noise Sources: Leaves rustling in gentle 9 mph breeze, bird song. Aircraft, residential ambiance, distant buzzing from saw in operation, distant dogs barking, & wind chimes.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT2	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	7/27/2021		

PHOTOS:



NM2 looking SE across County Line Road towards residence 245 Juniper Avenue, Yucaipa.

NM2 looking W down County Line Road towards 3rd Street intersection. Driveway to residence 34792 County Line Road, Yucaipa on the right.

Summary		
File Name on Meter	LxT_Data.106.s	
File Name on PC	LxT_0001152-20210727 132726-LxT_Data.106.ldbin	
Serial Number	0001152	
Model	SoundTrack LxT®	
Firmware Version	2.404	
User	Ian Edward Gallagher	
Location	NM2 34° 0'16.09"N 117° 2'43.23"W	
Job Description	15 minute noise measurement (1 x 15 minutes)	
Note	19403 Fallbrook Meadows	
	Residential Project, City of Yucaipa	

Measurement		
Start	2021-07-27 13:27:26	
Stop	2021-07-27 13:42:26	
Duration	00:15:00.0	
Run Time	00:15:00.0	
Pause	00:00:00.0	
Pre-Calibration	2021-07-27 13:25:38	
Post-Calibration	None	
Calibration Deviation	---	

Overall Settings		
RMS Weight	A Weighting	
Peak Weight	Z Weighting	
Detector	Slow	
Preamplifier	PRMLxT1	
Microphone Correction	Off	
Integration Method	Linear	
OBA Range	Low	
OBA Bandwidth	1/1 and 1/3	
OBA Frequency Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Overload	143.9	dB

Results				
LAeq		69.3		
LAE		98.8		
EA		851.697	μPa²h	
EA8		27.254	mPa²h	
EA40		136.272	mPa²h	
LZpeak (max)	2021-07-27 13:37:21		103.7	dB
LASmax	2021-07-27 13:37:22		84.7	dB
LASmin	2021-07-27 13:40:21		45.0	dB
SEA		-99.9	dB	
LAFTM5		75.6	dB	
Corrected dBA		72.8	dBA	
LCeq		74.8	dB	
LAeq		69.3	dB	
LCeq - LAeq		5.5	dB	
LAIeq		72.3	dB	
LAeq		69.3	dB	
LAIeq - LAeq		3.0	dB	
Overload Count		0		

Statistics	
LA2.00	77.0 dB
LA8.00	74.1 dB
LA25.00	70.2 dB
LA50.00	64.4 dB
LA66.60	58.5 dB
LA90.00	50.3 dB

Noise Measurement
Field Data

Project Name: Fallbrook Meadows Residential Project, City of Yucaipa. **Date:** July 27, 2021

Project #: 19403

Noise Measurement #: NM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 13694 2nd Street, Yucaipa, California 92399

Site Description (Type of Existing Land Use and any other notable features): Project site: Flat grassy land w/fences. Single-family & multi-family residential to north, single-family residential to south, 3rd Street to west, & 2nd street to east, a church further north & a school to NE. Noise Measurement Site: 2nd Street to east w/ single-family residential further east, project site to north, single-family residential to west and south.

Weather: <40% white cloud, filtered sunshine, hot, humid. **Settings:** $\boxed{\text{SLOW}}$ FAST

Temperature: 92 deg F **Wind:** 9 mph **Humidity:** 38% **Terrain:** Flat

Start Time: 2:10 PM **End Time:** 2:25 PM **Run Time:**

Leq: 55.4 dB
Lmax 73.2 dB
L2 65.1 dB
L8 58.9 dB
L25 51.8 dB
L50 49.4 dB

Primary Noise Source: Traffic noise from 15 vehicles passing microphone traveling along 2nd Street. Traffic ambiance from County Line Road, 3rd Street & other surrounding roads.

Secondary Noise Sources: Leaves rustling in gentle 9 mph breeze, bird song. Aircraft, residential ambiance, distant dogs barking, & wind chimes.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT2	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	7/27/2021		

PHOTOS:

NM3 looking W across front yard of residence 13694 2nd Street, Yucaipa.

NM3 looking S down 2nd Street towards County Line Road intersection.
Residence 13694 2nd Street, Yucaipa on the right.

Noise Measurement
Field Data

U10L33V12:V14T9:V14L33V12:V14

Summary

File Name on Meter	LxT_Data.107.s
File Name on PC	LxT_0001152-20210727 141024-LxT_Data.107.ldbin
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM3 34° 0'18.05"N 117° 2'35.78"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	19403 Fallbrook Meadows
	Residential Project, City of Yucaipa

Measurement

Start	2021-07-27 14:10:24
Stop	2021-07-27 14:25:24
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-07-27 14:09:58
Post-Calibration	None

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	143.9 dB

Results

LAeq		55.4
LAE		85.0
EA		35.050 µPa²h
EA8		1.122 mPa²h
EA40		5.608 mPa²h
LZpeak (max)	2021-07-27 14:17:44	102.5 dB
LASmax	2021-07-27 14:22:56	73.2 dB
LASmin	2021-07-27 14:12:56	43.9 dB
SEA		-99.9 dB
LAFTM5		60.1 dB
Corrected dBA		55.6 dBA
LCeq		66.9 dB
LAeq		55.4 dB
LCeq - LAeq		11.5 dB
LAIeq		57.2 dB
LAeq		55.4 dB
LAIeq - LAeq		1.8 dB
Overload Count		0

Statistics

LA2.00	65.1 dB
LA8.00	58.9 dB
LA25.00	51.8 dB
LA50.00	49.4 dB
LA66.60	48.2 dB
LA90.00	45.7 dB

Noise Measurement
Field Data

Project Name: Fallbrook Meadows Residential Project, City of Yucaipa. **Date:** July 27, 2021

Project #: 19403

Noise Measurement #: NM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 13630 2nd Street, Yucaipa, California 92399

Site Description (Type of Existing Land Use and any other notable features): Project site: Flat grassy land w/fences. Single-family & multi-family residential to north, single-family residential to south, 3rd Street to west, & 2nd street to east, chruch further north & a school to NE. Noise Measurement Site: Church to north & west, single-family residential to south & west, 2nd Street to east w/ single-family residential further east and northeast, school use further northeast.

Weather: <40% white cloud, filtered sunshine, hot, humid. **Settings:** SLOW FAST

Temperature: 92 deg F **Wind:** 9 mph **Humidity:** 38% **Terrain:** Flat

Start Time: 2:39 PM **End Time:** 2:54 PM **Run Time:**

Leq:	52.3	dB
Lmax	68.5	dB
L2	63.3	dB
L8	55.3	dB
L25	48.0	dB
L50	44.7	dB

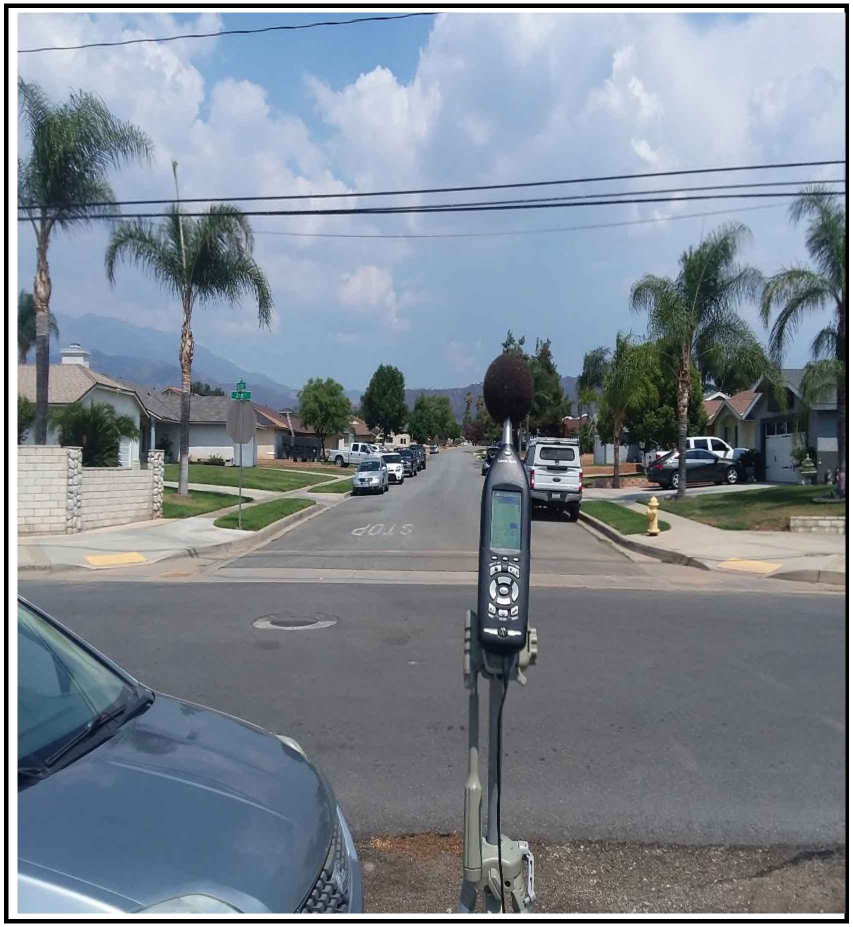
Primary Noise Source: Traffic noise from 10 vehicles passing microphone traveling along 2nd Street. Traffic ambiance from County Line Road, 3rd Street & other surrounding roads.

Secondary Noise Sources: Leaves rustling in gentle 9 mph breeze, bird song. Aircraft, residential ambiance, distant dogs barking, & wind chimes.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT2	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	7/27/2021		

Noise Measurement
Field Data

PHOTOS:



NM4 looking E across 2nd Street & San Carlos Street intersection, Yucaipa.

NM4 looking NW through gate & parking lot to church, 13626 2nd Street, Yucaipa.

Summary	
File Name on Meter	LxT_Data.108.s
File Name on PC	LxT_0001152-20210727 143938-LxT_Data.108.ldbin
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM4 34° 0'22.53"N 117° 2'35.84"W
Job Description	15 minute noise measuremnt (1 x 15 minutes)
Note	19403 Fallbrook Meadows
	Residential Project, City of Yucaipa

Measurement	
Start	2021-07-27 14:39:38
Stop	2021-07-27 14:54:38
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-07-27 14:39:11
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	143.9 dB

Results		
LAeq	52.3	
LAE	81.8	
EA	16.927 µPa²h	
EA8	541.656 µPa²h	
EA40	2.708 mPa²h	
LZpeak (max)	2021-07-27 14:44:40	104.0 dB
LASmax	2021-07-27 14:43:35	68.5 dB
LASmin	2021-07-27 14:44:08	39.9 dB
SEA	-99.9 dB	
LAFTM5	58.8 dB	
Corrected dBA	52.4 dBA	
LCeq	63.5 dB	
LAeq	52.3 dB	
LCeq - LAeq	11.2 dB	
LAIeq	56.1 dB	
LAeq	52.3 dB	
LAIeq - LAeq	3.9 dB	
Overload Count	0	

Statistics	
LA2.00	63.3 dB
LA8.00	55.3 dB
LA25.00	48.0 dB
LA50.00	44.7 dB
LA66.60	43.3 dB
LA90.00	41.8 dB

Appendix D

Construction Noise Modeling

Receptor - Multi-Family Residential to North

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	127	20	0.20	-8.1	-7.0	47.9	40.9
Excavators	3	85	127	40	1.20	-8.1	0.8	76.9	77.7
Rubber Tired Dozers	2	85	127	40	0.80	-8.1	-1.0	76.9	75.9
							Log Sum		79.9
Grading									
Excavator	1	85	127	40	0.4	-8.1	-4.0	76.9	72.9
Grader	1	85	127	40	0.40	-8.1	-4.0	76.9	72.9
Rubber Tired Dozers	1	85	127	40	0.40	-8.1	-4.0	76.9	72.9
Tractors/Loaders/Backhoes	3	84	127	40	1.20	-8.1	0.8	75.9	76.7
							Log Sum		80.2
Building Construction									
Cranes	1	83	127	16	0.16	-8.1	-8.0	74.9	66.9
Forklifts [2]	3	48	127	40	1.20	-8.1	0.8	39.9	40.7
Generator Set	1	81	127	50	0.50	-8.1	-3.0	72.9	69.9
Welders	1	74	127	40	0.40	-8.1	-4.0	65.9	61.9
Tractors/Loaders/Backhoes	3	84	127	40	1.20	-8.1	0.8	75.9	76.7
							Log Sum		78.0
Paving									
Pavers	2	77	127	50	1.00	-8.1	0.0	68.9	68.9
Paving Equipment	2	85	127	20	0.40	-8.1	-4.0	76.9	72.9
Rollers	2	80	127	20	0.40	-8.1	-4.0	71.9	67.9
							Log Sum		75.3
Architectural Coating									
Air Compressors	1	80	127	40	0.40	-8.1	-4.0	71.9	67.9
							Log Sum		67.9

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - Single-Family Residential to North									
Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	174	20	0.20	-10.8	-7.0	45.2	38.2
Excavators	3	85	174	40	1.20	-10.8	0.8	74.2	75.0
Rubber Tired Dozers	2	85	174	40	0.80	-10.8	-1.0	74.2	73.2
							Log Sum		77.2
Grading									
Excavator	1	85	174	40	0.4	-10.8	-4.0	74.2	70.2
Grader	1	85	174	40	0.40	-10.8	-4.0	74.2	70.2
Rubber Tired Dozers	1	85	174	40	0.40	-10.8	-4.0	74.2	70.2
Tractors/Loaders/Backhoes	3	84	174	40	1.20	-10.8	0.8	73.2	74.0
							Log Sum		77.5
Building Construction									
Cranes	1	83	174	16	0.16	-10.8	-8.0	72.2	64.2
Forklifts [2]	3	48	174	40	1.20	-10.8	0.8	37.2	38.0
Generator Set	1	81	174	50	0.50	-10.8	-3.0	70.2	67.2
Welders	1	74	174	40	0.40	-10.8	-4.0	63.2	59.2
Tractors/Loaders/Backhoes	3	84	174	40	1.20	-10.8	0.8	73.2	74.0
							Log Sum		75.3
Paving									
Pavers	2	77	174	50	1.00	-10.8	0.0	66.2	66.2
Paving Equipment	2	85	174	20	0.40	-10.8	-4.0	74.2	70.2
Rollers	2	80	174	20	0.40	-10.8	-4.0	69.2	65.2
							Log Sum		72.5
Architectural Coating									
Air Compressors	1	80	174	40	0.40	-10.8	-4.0	69.2	65.2
							Log Sum		65.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - Single-Family Residential to South

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	130	20	0.20	-8.3	-7.0	47.7	40.7
Excavators	3	85	130	40	1.20	-8.3	0.8	76.7	77.5
Rubber Tired Dozers	2	85	130	40	0.80	-8.3	-1.0	76.7	75.7
							Log Sum		79.7
Grading									
Excavator	1	85	130	40	0.4	-8.3	-4.0	76.7	72.7
Grader	1	85	130	40	0.40	-8.3	-4.0	76.7	72.7
Rubber Tired Dozers	1	85	130	40	0.40	-8.3	-4.0	76.7	72.7
Tractors/Loaders/Backhoes	3	84	130	40	1.20	-8.3	0.8	75.7	76.5
							Log Sum		80.0
Building Construction									
Cranes	1	83	130	16	0.16	-8.3	-8.0	74.7	66.7
Forklifts [2]	3	48	130	40	1.20	-8.3	0.8	39.7	40.5
Generator Set	1	81	130	50	0.50	-8.3	-3.0	72.7	69.7
Welders	1	74	130	40	0.40	-8.3	-4.0	65.7	61.7
Tractors/Loaders/Backhoes	3	84	130	40	1.20	-8.3	0.8	75.7	76.5
							Log Sum		77.8
Paving									
Pavers	2	77	130	50	1.00	-8.3	0.0	68.7	68.7
Paving Equipment	2	85	130	20	0.40	-8.3	-4.0	76.7	72.7
Rollers	2	80	130	20	0.40	-8.3	-4.0	71.7	67.7
							Log Sum		75.1
Architectural Coating									
Air Compressors	1	80	130	40	0.40	-8.3	-4.0	71.7	67.7
							Log Sum		67.7

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - Church to North

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	242	20	0.20	-13.7	-7.0	42.3	35.3
Excavators	3	85	242	40	1.20	-13.7	0.8	71.3	72.1
Rubber Tired Dozers	2	85	242	40	0.80	-13.7	-1.0	71.3	70.3
							Log Sum		74.3
Grading									
Excavator	1	85	242	40	0.4	-13.7	-4.0	71.3	67.3
Grader	1	85	242	40	0.40	-13.7	-4.0	71.3	67.3
Rubber Tired Dozers	1	85	242	40	0.40	-13.7	-4.0	71.3	67.3
Tractors/Loaders/Backhoes	3	84	242	40	1.20	-13.7	0.8	70.3	71.1
							Log Sum		74.6
Building Construction									
Cranes	1	83	242	16	0.16	-13.7	-8.0	69.3	61.3
Forklifts [2]	3	48	242	40	1.20	-13.7	0.8	34.3	35.1
Generator Set	1	81	242	50	0.50	-13.7	-3.0	67.3	64.3
Welders	1	74	242	40	0.40	-13.7	-4.0	60.3	56.3
Tractors/Loaders/Backhoes	3	84	242	40	1.20	-13.7	0.8	70.3	71.1
							Log Sum		72.4
Paving									
Pavers	2	77	242	50	1.00	-13.7	0.0	63.3	63.3
Paving Equipment	2	85	242	20	0.40	-13.7	-4.0	71.3	67.3
Rollers	2	80	242	20	0.40	-13.7	-4.0	66.3	62.3
							Log Sum		69.7
Architectural Coating									
Air Compressors	1	80	242	40	0.40	-13.7	-4.0	66.3	62.3
							Log Sum		62.3

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - School to Northeast

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	788	20	0.20	-24.0	-7.0	32.0	25.1
Excavators	3	85	788	40	1.20	-24.0	0.8	61.0	61.8
Rubber Tired Dozers	2	85	788	40	0.80	-24.0	-1.0	61.0	60.1
							Log Sum		64.1
Grading									
Excavator	1	85	788	40	0.4	-24.0	-4.0	61.0	57.1
Grader	1	85	788	40	0.40	-24.0	-4.0	61.0	57.1
Rubber Tired Dozers	1	85	788	40	0.40	-24.0	-4.0	61.0	57.1
Tractors/Loaders/Backhoes	3	84	788	40	1.20	-24.0	0.8	60.0	60.8
							Log Sum		64.4
Building Construction									
Cranes	1	83	788	16	0.16	-24.0	-8.0	59.0	51.1
Forklifts [2]	3	48	788	40	1.20	-24.0	0.8	24.0	24.8
Generator Set	1	81	788	50	0.50	-24.0	-3.0	57.0	54.0
Welders	1	74	788	40	0.40	-24.0	-4.0	50.0	46.1
Tractors/Loaders/Backhoes	3	84	788	40	1.20	-24.0	0.8	60.0	60.8
							Log Sum		62.1
Paving									
Pavers	2	77	788	50	1.00	-24.0	0.0	53.0	53.0
Paving Equipment	2	85	788	20	0.40	-24.0	-4.0	61.0	57.1
Rollers	2	80	788	20	0.40	-24.0	-4.0	56.0	52.1
							Log Sum		59.4
Architectural Coating									
Air Compressors	1	80	788	40	0.40	-24.0	-4.0	56.0	52.1
							Log Sum		52.1

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - Single-Family Residential to East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	694	20	0.20	-22.8	-7.0	33.2	26.2
Excavators	3	85	694	40	1.20	-22.8	0.8	62.2	62.9
Rubber Tired Dozers	2	85	694	40	0.80	-22.8	-1.0	62.2	61.2
							Log Sum		65.2
Grading									
Excavator	1	85	694	40	0.4	-22.8	-4.0	62.2	58.2
Grader	1	85	694	40	0.40	-22.8	-4.0	62.2	58.2
Rubber Tired Dozers	1	85	694	40	0.40	-22.8	-4.0	62.2	58.2
Tractors/Loaders/Backhoes	3	84	694	40	1.20	-22.8	0.8	61.2	61.9
							Log Sum		65.5
Building Construction									
Cranes	1	83	694	16	0.16	-22.8	-8.0	60.2	52.2
Forklifts [2]	3	48	694	40	1.20	-22.8	0.8	25.2	25.9
Generator Set	1	81	694	50	0.50	-22.8	-3.0	58.2	55.1
Welders	1	74	694	40	0.40	-22.8	-4.0	51.2	47.2
Tractors/Loaders/Backhoes	3	84	694	40	1.20	-22.8	0.8	61.2	61.9
							Log Sum		63.2
Paving									
Pavers	2	77	694	50	1.00	-22.8	0.0	54.2	54.2
Paving Equipment	2	85	694	20	0.40	-22.8	-4.0	62.2	58.2
Rollers	2	80	694	20	0.40	-22.8	-4.0	57.2	53.2
							Log Sum		60.5
Architectural Coating									
Air Compressors	1	80	694	40	0.40	-22.8	-4.0	57.2	53.2
							Log Sum		53.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

Receptor - Single-Family & Multi-Family Residential to West

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Sawzall[4]	1	56	690	20	0.20	-22.8	-7.0	33.2	26.2
Excavators	3	85	690	40	1.20	-22.8	0.8	62.2	63.0
Rubber Tired Dozers	2	85	690	40	0.80	-22.8	-1.0	62.2	61.2
							Log Sum		65.2
Grading									
Excavator	1	85	690	40	0.4	-22.8	-4.0	62.2	58.2
Grader	1	85	690	40	0.40	-22.8	-4.0	62.2	58.2
Rubber Tired Dozers	1	85	690	40	0.40	-22.8	-4.0	62.2	58.2
Tractors/Loaders/Backhoes	3	84	690	40	1.20	-22.8	0.8	61.2	62.0
							Log Sum		65.5
Building Construction									
Cranes	1	83	690	16	0.16	-22.8	-8.0	60.2	52.2
Forklifts [2]	3	48	690	40	1.20	-22.8	0.8	25.2	26.0
Generator Set	1	81	690	50	0.50	-22.8	-3.0	58.2	55.2
Welders	1	74	690	40	0.40	-22.8	-4.0	51.2	47.2
Tractors/Loaders/Backhoes	3	84	690	40	1.20	-22.8	0.8	61.2	62.0
							Log Sum		63.3
Paving									
Pavers	2	77	690	50	1.00	-22.8	0.0	54.2	54.2
Paving Equipment	2	85	690	20	0.40	-22.8	-4.0	62.2	58.2
Rollers	2	80	690	20	0.40	-22.8	-4.0	57.2	53.2
							Log Sum		60.6
Architectural Coating									
Air Compressors	1	80	690	40	0.40	-22.8	-4.0	57.2	53.2
							Log Sum		53.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

(4) Sawzall utilized for the CalEEMod equipment of "concrete/industrial saw" as only single-family residential structures are being demolished. Noise level for sawzall estimated based on: https://www.industrialfansdirect.com/pages/dba-sones-decibel-levels.

APPENDIX E

FHWA WORKSHEETS

Existing Traffic Noise

1	:Id	
County Line Road	:Road	
West of 5th Street	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13600
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	787.63	16.32	27.20	584.73	2.72	4.53	145.00	22.67	37.78
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.22	6.38	8.60	21.92	-1.40	0.82	15.87	7.81	10.03
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.23	57.11	64.54	62.93	49.33	56.76	56.88	58.53	65.97
	DAY LEQ	67.79		EVENING LEQ	64.02		NIGHT LEQ	67.12	

F	CNEL	73.68
	DAY LEQ	67.79

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

gandini

Existing Plus Project Traffic Noise

1	:Id	
County Line Road	:Road	
West of 5th Street	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	14170
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime Autos	Daytime Medium Trucks	Daytime Heavy Trucks	Evening Autos	Evening Medium Trucks	Evening Heavy Trucks	Night Autos	Night Medium Trucks	Night Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	820.64	17.00	28.34	609.23	2.83	4.72	151.08	23.62	39.36
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.40	6.56	8.78	22.10	-1.22	1.00	16.05	7.99	10.20
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.40	57.29	64.72	63.11	49.50	56.94	57.05	58.71	66.15
	DAY LEQ	67.96		EVENING LEQ	64.20		NIGHT LEQ	67.30	

CNEL	73.86
DAY LEQ	67.96

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

2	:Id	
County Line Road	:Road	
5th Street to 3rd Street	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10500
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	608.10	12.60	21.00	451.44	2.10	3.50	111.95	17.50	29.17
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	22.09	5.26	7.48	20.80	-2.52	-0.31	14.74	6.68	8.90
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.10	55.98	63.42	61.81	48.20	55.64	55.75	57.41	64.85
	DAY LEQ	66.66		EVENING LEQ	62.90		NIGHT LEQ	66.00	

CNEL	72.56
DAY LEQ	66.66

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

ganddini

Existing Plus Project Traffic Noise

2	:Id	Vehicle Distribution (Heavy Truck Mix)					ADT	11280
County Line Road	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	35
5th Street to 3rd Street	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	40
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	653.27	13.54	22.56	484.98	2.26	3.76	120.26	18.80	31.33
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	22.40	5.57	7.79	21.11	-2.21	0.01	15.05	7.00	9.21
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.41	56.30	63.73	62.12	48.51	55.95	56.06	57.72	65.16
	DAY LEQ	66.97		EVENING LEQ	63.21		NIGHT LEQ	66.31	

CNEL	72.87	Day hour	90.00
DAY LEQ	66.97	Absorptive?	no
		Use hour?	no
		GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

3	:Id					ADT	7800
County Line Road	:Road					Speed	35
3rd Street to 2nd Street	:Segment					Distance	40
						Left Angle	-90
						Right Angle	90

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	451.73	9.36	15.60	335.36	1.56	2.60	83.16	13.00	21.67
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	20.80	3.97	6.18	19.51	-3.82	-1.60	13.45	5.39	7.61
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	61.81	54.69	62.13	60.52	46.91	54.35	54.46	56.12	63.56
	DAY LEQ	65.37		EVENING LEQ	61.61		NIGHT LEQ	64.71	

CNEL	71.27	Day hour	91.00
DAY LEQ	65.37	Absorptive?	no
		Use hour?	no
		GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riversideheavy truck mix.

Existing Plus Project Traffic Noise

3	:Id	
County Line Road	:Road	
3rd Street to 2nd Street	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	7940
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	459.84	9.53	15.88	341.38	1.59	2.65	84.65	13.23	22.06
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	20.88	4.04	6.26	19.59	-3.74	-1.52	13.53	5.47	7.69
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	61.89	54.77	62.21	60.59	46.99	54.43	54.54	56.20	63.63
	DAY LEQ	65.45		EVENING LEQ	61.68		NIGHT LEQ	64.79	

CNEL	71.34
DAY LEQ	65.45

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

4	:Id	ADT	6800
County Line Road	:Road	Speed	35
East of 2nd Street	:Segment	Distance	40
		Left Angle	-90
		Right Angle	90

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	393.82	8.16	13.60	292.36	1.36	2.27	72.50	11.33	18.89
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	20.21	3.37	5.59	18.91	-4.41	-2.19	12.86	4.80	7.02
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	61.22	54.10	61.53	59.92	46.32	53.75	53.87	55.52	62.96
	DAY LEQ	64.78		EVENING LEQ	61.01		NIGHT LEQ	64.11	

CNEL	70.67	Day hour	92.00
DAY LEQ	64.78	Absorptive?	no
		Use hour?	no
		GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

gandini

Existing Plus Project Traffic Noise

4	:Id	
County Line Road	:Road	
East of 2nd Street	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	7090
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	410.61	8.51	14.18	304.83	1.42	2.36	75.59	11.82	19.69
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	20.39	3.55	5.77	19.09	-4.23	-2.01	13.04	4.98	7.20
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	61.40	54.28	61.72	60.10	46.50	53.93	54.05	55.71	63.14
	DAY LEQ	64.96		EVENING LEQ	61.19		NIGHT LEQ	64.29	

CNEL	70.85
DAY LEQ	64.96

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

gandini

Existing Traffic Noise

5	:Id	
5th Street	:Road	
North of County Line Road	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10100
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime Autos	Daytime Medium Trucks	Daytime Heavy Trucks	Evening Autos	Evening Medium Trucks	Evening Heavy Trucks	Night Autos	Night Medium Trucks	Night Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	584.93	12.12	20.20	434.25	2.02	3.37	107.68	16.83	28.06
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.92	5.09	7.31	20.63	-2.69	-0.47	14.57	6.52	8.73
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.93	55.82	63.25	61.64	48.03	55.47	55.58	57.24	64.68
	DAY LEQ	66.49		EVENING LEQ	62.73		NIGHT LEQ	65.83	

CNEL	72.39
DAY LEQ	66.49

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

gandini

Existing Plus Project Traffic Noise

5	:Id	
5th Street	:Road	
North of County Line Road	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10170
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	588.99	12.20	20.34	437.26	2.03	3.39	108.43	16.95	28.25
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.95	5.12	7.34	20.66	-2.66	-0.44	14.60	6.55	8.76
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.96	55.85	63.28	61.67	48.06	55.50	55.61	57.27	64.71
	DAY LEQ	66.52		EVENING LEQ	62.76		NIGHT LEQ	65.86	

CNEL	72.42
DAY LEQ	66.52

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

6	:Id	
5th Street	:Road	
South of County Line Road	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	6400
Speed	25
Distance	40
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime Autos	Daytime Medium Trucks	Daytime Heavy Trucks	Evening Autos	Evening Medium Trucks	Evening Heavy Trucks	Night Autos	Night Medium Trucks	Night Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	370.65	7.68	12.80	275.17	1.28	2.13	68.24	10.67	17.78
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	21.40	4.57	6.79	20.11	-3.21	-0.99	14.05	6.00	8.21
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.74	51.55	59.93	55.45	43.77	52.14	49.39	52.98	61.35
	DAY LEQ	62.04		EVENING LEQ	57.31		NIGHT LEQ	62.18	

CNEL	**68.58**	Day hour	94.00
DAY LEQ	62.04	Absorptive?	no
		Use hour?	no
		GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

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Existing Plus Project Traffic Noise

6	:Id
5th Street	:Road
South of County Line Road	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	6540
Speed	25
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	378.76	7.85	13.08	281.19	1.31	2.18	69.73	10.90	18.17
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	21.50	4.66	6.88	20.20	-3.12	-0.90	14.15	6.09	8.31
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.84	51.65	60.02	55.54	43.87	52.24	49.49	53.08	61.45
	DAY LEQ	62.13		EVENING LEQ	57.41		NIGHT LEQ	62.27	

CNEL	68.67
DAY LEQ	62.13

Day hour	94.00
Absorptive?	no
Use hour?	no
GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

7	:Id	
3rd Street	:Road	
North of Project Site	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	2600
Speed	35
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	159.46	1.95	0.76	117.84	0.35	0.35	29.52	2.60	1.01
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.28	-2.85	-6.95	14.97	-10.36	-10.34	8.95	-1.60	-5.70
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	58.54	49.13	50.25	57.22	41.62	46.85	51.21	50.38	51.50
	DAY LEQ	59.55		EVENING LEQ	57.71		NIGHT LEQ	55.83	

CNEL	63.26
DAY LEQ	59.55

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

7	:Id	
3rd Street	:Road	
North of Project Site	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	2670
Speed	35
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	163.75	2.00	0.78	121.01	0.36	0.36	30.31	2.67	1.04
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.40	-2.73	-6.83	15.08	-10.24	-10.23	9.07	-1.48	-5.58
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	58.65	49.25	50.36	57.34	41.74	46.97	51.33	50.49	51.61
	DAY LEQ	59.67		EVENING LEQ	57.83		NIGHT LEQ	55.94	

CNEL	63.38
DAY LEQ	59.67

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

gandini

Existing Traffic Noise

8	:Id	
3rd Street	:Road	
Project Site to County Line Road	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	3300
Speed	35
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	202.39	2.47	0.96	149.57	0.44	0.44	37.46	3.30	1.28
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	17.32	-1.81	-5.91	16.00	-9.32	-9.31	9.99	-0.56	-4.66
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	59.57	50.17	51.28	58.26	42.66	47.89	52.25	51.41	52.53
	DAY LEQ	60.59		EVENING LEQ	58.75		NIGHT LEQ	56.86	

CNEL	64.30
DAY LEQ	60.59

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

8	:Id
3rd Street	:Road
Project Site to County Line Road	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	4010
Speed	35
Distance	30
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	245.93	3.01	1.17	181.75	0.53	0.54	45.52	4.01	1.56
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	18.16	-0.96	-5.07	16.85	-8.47	-8.46	10.84	0.28	-3.82
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.42	51.01	52.13	59.11	43.50	48.73	53.09	52.26	53.38
	DAY LEQ	61.43		EVENING LEQ	59.60		NIGHT LEQ	57.71	

CNEL	**65.14**
DAY LEQ	61.43

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

9	:Id	ADT	2600
3rd Street	:Road	Speed	25
South of County Line Road	:Segment	Distance	30
		Left Angle	-90
		Right Angle	90

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	159.46	1.95	0.76	117.84	0.35	0.35	29.52	2.60	1.01
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	17.74	-1.39	-5.49	16.43	-8.89	-8.88	10.42	-0.14	-4.24
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	54.33	46.85	48.90	53.02	39.34	45.51	47.00	48.10	50.15
	DAY LEQ	55.99		EVENING LEQ	53.88		NIGHT LEQ	53.39	

CNEL	60.47	Day hour	97.00
DAY LEQ	55.99	Absorptive?	no
		Use hour?	no
		GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

9	:Id	
3rd Street	:Road	
South of County Line Road	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	2670
Speed	25
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	163.75	2.00	0.78	121.01	0.36	0.36	30.31	2.67	1.04
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	17.86	-1.27	-5.37	16.54	-8.78	-8.77	10.53	-0.02	-4.12
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	54.45	46.97	49.02	53.13	39.46	45.62	47.12	48.22	50.27
	DAY LEQ	56.10		EVENING LEQ	54.00		NIGHT LEQ	53.51	

F	CNEL	60.58	Day hour	97.00
	DAY LEQ	56.10	Absorptive?	no
			Use hour?	no
			GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

gandini

Existing Traffic Noise

10	:Id	Vehicle Distribution (Light Truck Mix)						ADT	700
2nd Street	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow		Speed	25
North of San Rosen Court	:Segment	Automobiles	75.56	13.96	10.49	97.40		Distance	30
		Medium Trucks	48.91	2.17	48.91	1.84		Left Angle	-90
		Heavy Trucks	47.30	5.41	47.30	0.74		Right Angle	90

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	42.93	0.52	0.20	31.73	0.09	0.09	7.95	0.70	0.27
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	12.04	-7.08	-11.19	10.73	-14.59	-14.58	4.72	-5.83	-9.94
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	48.63	41.15	43.20	47.32	33.64	39.81	41.31	42.40	44.45
	DAY LEQ	50.29		EVENING LEQ	48.18		NIGHT LEQ	47.69	

CNEL	54.77	Day hour	98.00
DAY LEQ	50.29	Absorptive?	no
		Use hour?	no
		GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

10	:Id	
2nd Street	:Road	
North of San Rosen Court	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	840
Speed	25
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	51.52	0.63	0.25	38.07	0.11	0.11	9.54	0.84	0.33
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	12.83	-6.29	-10.39	11.52	-13.80	-13.79	5.51	-5.04	-9.14
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	49.42	41.94	44.00	48.11	34.43	40.60	42.10	43.19	45.24
	DAY LEQ	51.08		EVENING LEQ	48.97		NIGHT LEQ	48.48	

CNEL	55.56
DAY LEQ	51.08

Day hour	98.00
Absorptive?	no
Use hour?	no
GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

ganddini

Existing Traffic Noise

11	:Id						ADT	900
2nd Street	:Road						Speed	25
San Rosen Court to County Line Road	:Segment						Distance	30
							Left Angle	-90
							Right Angle	90

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	55.20	0.67	0.26	40.79	0.12	0.12	10.22	0.90	0.35
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	13.13	-5.99	-10.09	11.82	-13.50	-13.49	5.81	-4.74	-8.84
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	49.72	42.24	44.30	48.41	34.73	40.90	42.40	43.49	45.54
	DAY LEQ	51.38		EVENING LEQ	49.27		NIGHT LEQ	48.78	

CNEL	55.86	Day hour	99.00
DAY LEQ	51.38	Absorptive?	no
		Use hour?	no
		GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

ganddini

Existing Plus Project Traffic Noise

11	:Id
2nd Street	:Road
San Rosen Court to County Line Road	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	1400
Speed	25
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	85.86	1.05	0.41	63.45	0.19	0.19	15.89	1.40	0.54
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	15.05	-4.07	-8.17	13.74	-11.58	-11.57	7.73	-2.82	-6.93
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	51.64	44.16	46.21	50.33	36.65	42.82	44.32	45.41	47.46
	DAY LEQ	53.30		EVENING LEQ	51.19		NIGHT LEQ	50.70	

CNEL	57.78
DAY LEQ	53.30

Day hour	99.00
Absorptive?	no
Use hour?	no
GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

12	:Id	
2nd Street	:Road	
South of County Line Road	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	700
Speed	25
Distance	30
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	42.93	0.52	0.20	31.73	0.09	0.09	7.95	0.70	0.27
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	12.04	-7.08	-11.19	10.73	-14.59	-14.58	4.72	-5.83	-9.94
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	48.63	41.15	43.20	47.32	33.64	39.81	41.31	42.40	44.45
	DAY LEQ	50.29		EVENING LEQ	48.18		NIGHT LEQ	47.69	

CNEL	54.77
DAY LEQ	50.29

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

12	:Id							ADT	770
2nd Street	:Road							Speed	25
South of County Line Road	:Segment							Distance	30
								Left Angle	-90
								Right Angle	90

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	47.22	0.58	0.22	34.90	0.10	0.10	8.74	0.77	0.30
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	12.46	-6.67	-10.77	11.14	-14.18	-14.17	5.13	-5.42	-9.52
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	49.04	41.57	43.62	47.73	34.06	40.22	41.72	42.82	44.87
	DAY LEQ	50.70		EVENING LEQ	48.60		NIGHT LEQ	48.11	

CNEL	55.18	Day hour	0.00
DAY LEQ	50.70	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

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APPENDIX F

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project	Date:	7/19/21
Source:	Large Dozer		
Scenario:	Unmitigated		
Location:	Single-Family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	4.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	1.391	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project	Date:	7/19/21
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-Family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			

INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	4.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS			
PPV =	3.281	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project		Date: 7/19/21
Source:	Large Dozer		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	7.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.601	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project	Date:	7/19/21
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	7.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	1.417	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project	Date:	7/19/21
Source:	Large Dozer		
Scenario:	Unmitigated		
Location:	Single-Family Residential to South		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	13.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.237	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project		Date: 7/19/21
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-Family Residential to South		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	13.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.560	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project	Date:	7/19/21
Source:	Large Dozer		
Scenario:	Mitigated		
Location:	Residential		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	13.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.237	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19403 Fallbrook Meadows Residential Project		Date: 7/19/21
Source:	Vibratory Roller		
Scenario:	Mitigated		
Location:	Residential		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	23.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.238	IN/SEC	OUTPUT IN BLUE

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FALLBROOK MEADOWS RESIDENTIAL PROJECT TRAFFIC IMPACT ANALYSIS

City of Yucaipa

September 9, 2021

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Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

FALLBROOK MEADOWS RESIDENTIAL PROJECT TRAFFIC IMPACT ANALYSIS

City of Yucaipa

September 9, 2021

prepared by

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Project No. 19403

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EXECUTIVE SUMMARY

The purpose of this study is to evaluate the potential for transportation impacts resulting from development of the proposed project in the context of the City of Yucaipa's discretionary authority for conformance with locally established operational standards. This study was prepared in consultation with City of Yucaipa staff and in accordance with the procedures and methodologies for assessing transportation impacts established by the City of Yucaipa. To assess the project's conformance with local operational standards, this study evaluates the project's effect on traffic operations and, if necessary, identifies recommended improvements or corrective measures to alleviate operational deficiencies substantially caused or worsened by the proposed project. For CEQA purposes, the significance of project-related transportation impacts are measured by vehicle miles traveled (VMT) relative to thresholds established by the City of Yucaipa as the lead agency. The VMT analysis is provided in a separate document.

Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with terms related to transportation engineering.

Project Description

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street.

Existing Levels of Service

The study intersections currently operate within acceptable Levels of Service (C or better) in the City of Yucaipa during the peak hours for Existing conditions, except for the following study intersection that currently operates at Level of Service D during the AM peak hour:

3. 3rd Street at County Line Road

Project Trip Generation

The proposed project is forecast to generate a total of approximately 1,426 daily trips, including 89 during the AM peak hour and 108 trips during the PM peak hour.

Level of Service Analysis

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing Plus Project conditions, except for the following study intersection that is forecast to operate at Level of Service E during the AM peak hour:

3. 3rd Street at County Line Road

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours with implementation of the following improvement:

<u>3rd Street (NS) at County Line Road (EW) - #2</u>
- Install a roundabout

Installation of roundabouts at the intersections of County Line Road/3rd Street and County Line Road/2nd Street are currently funded capital improvements and scheduled for construction starting in the fall of 2021. These improvements are assumed to be completed for Opening Year (2023) and future conditions.

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2023) With Project and Year 2040 With Project conditions with implementation of the previously identified improvements. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for Opening Year (2023) With Project or Year 2040 With Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

Site Access Improvements

The proposed project shall construct the following improvements to provide project site access:

3rd Street (NS) at Project West Driveway (EW) - #4

- Install westbound stop control.
- Construct the westbound approach to consist of one shared left/right turn lane.

2nd Street (NS) at Project East Driveway (EW) - #5

- Install eastbound stop control.
- Construct the eastbound approach to consist of one shared left/right turn lane.

1. INTRODUCTION

This section introduces the proposed project and the general scope of the analysis.

PROJECT DESCRIPTION

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. Figure 1 shows the regional location map and Figure 2 shows the project location map.

The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street. Figure 3 shows the project site plan.

STUDY AREA

Based on the County-approved scoping agreement (see Appendix B), the study area consists of the following study intersections within jurisdiction of the City of Yucaipa and Calimesa:

Study Intersections[1]	Jurisdiction
1. 5th Street (NS) at County Line Road (EW)	Yucaipa / Calimesa
2. 3rd Street (NS) at County Line Road (EW)	Yucaipa / Calimesa
3. 2nd Street (NS) at County Line Road (EW)	Yucaipa / Calimesa
4. 3rd Street (NS) at Project West Driveway (EW)	Yucaipa
5. 2nd Street (NS) at Project East Driveway (EW)	Yucaipa

Notes:
1. (NS) = North-South roadway; (EW) = East-West roadway

ANALYSIS SCENARIOS

The following scenarios are analyzed for weekday AM and PM peak hour conditions:

- Existing Conditions
- Existing Plus Project Conditions
- Opening Year (2023) Without Project Conditions
- Opening Year (2023) With Project Conditions
- Horizon Year (Year 2040) Without Project Conditions
- Horizon Year (Year 2040) With Project Conditions

[1] (NS) = North-South roadway; (EW) = East-West roadway

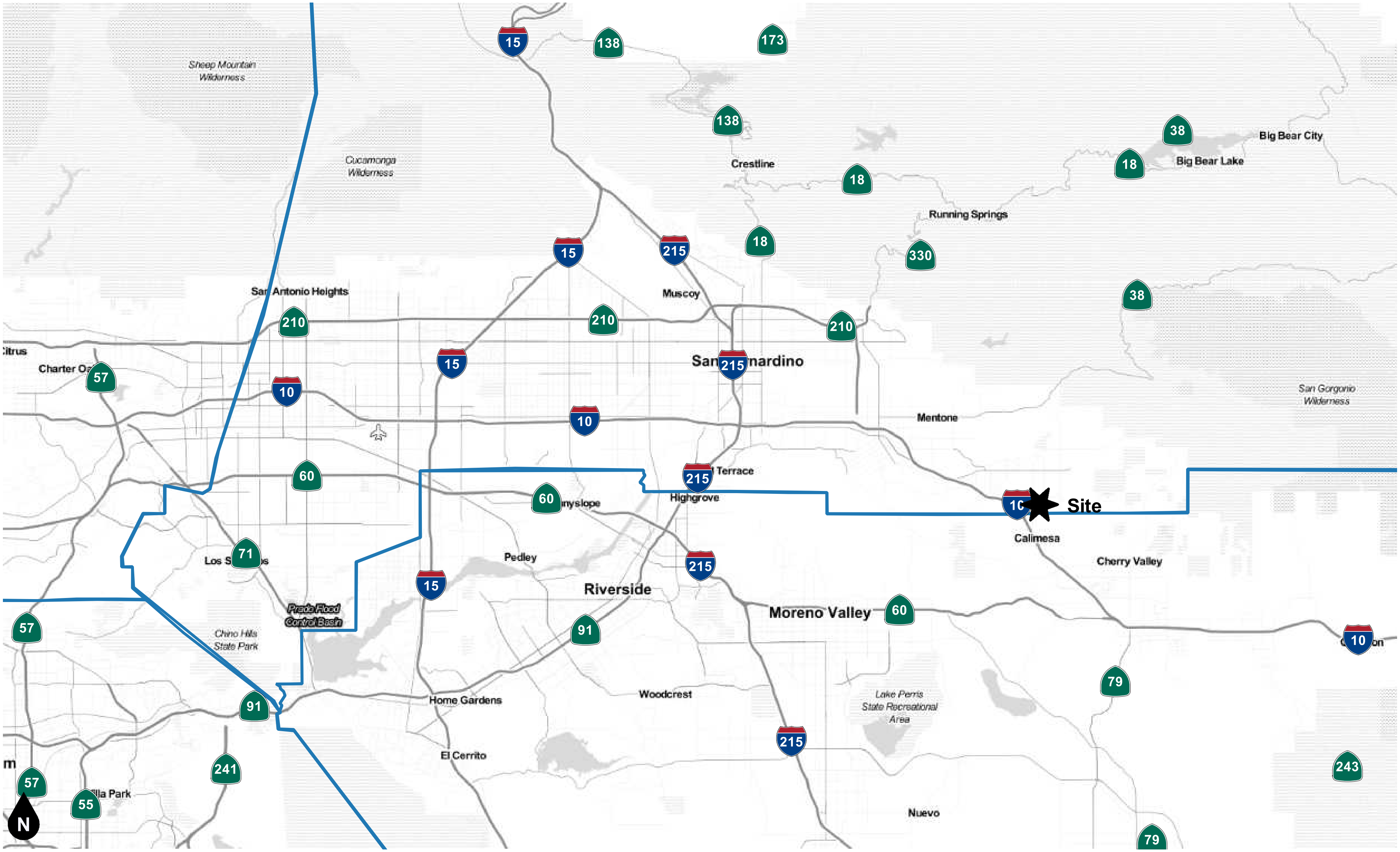

Figure 1
Regional Location Map

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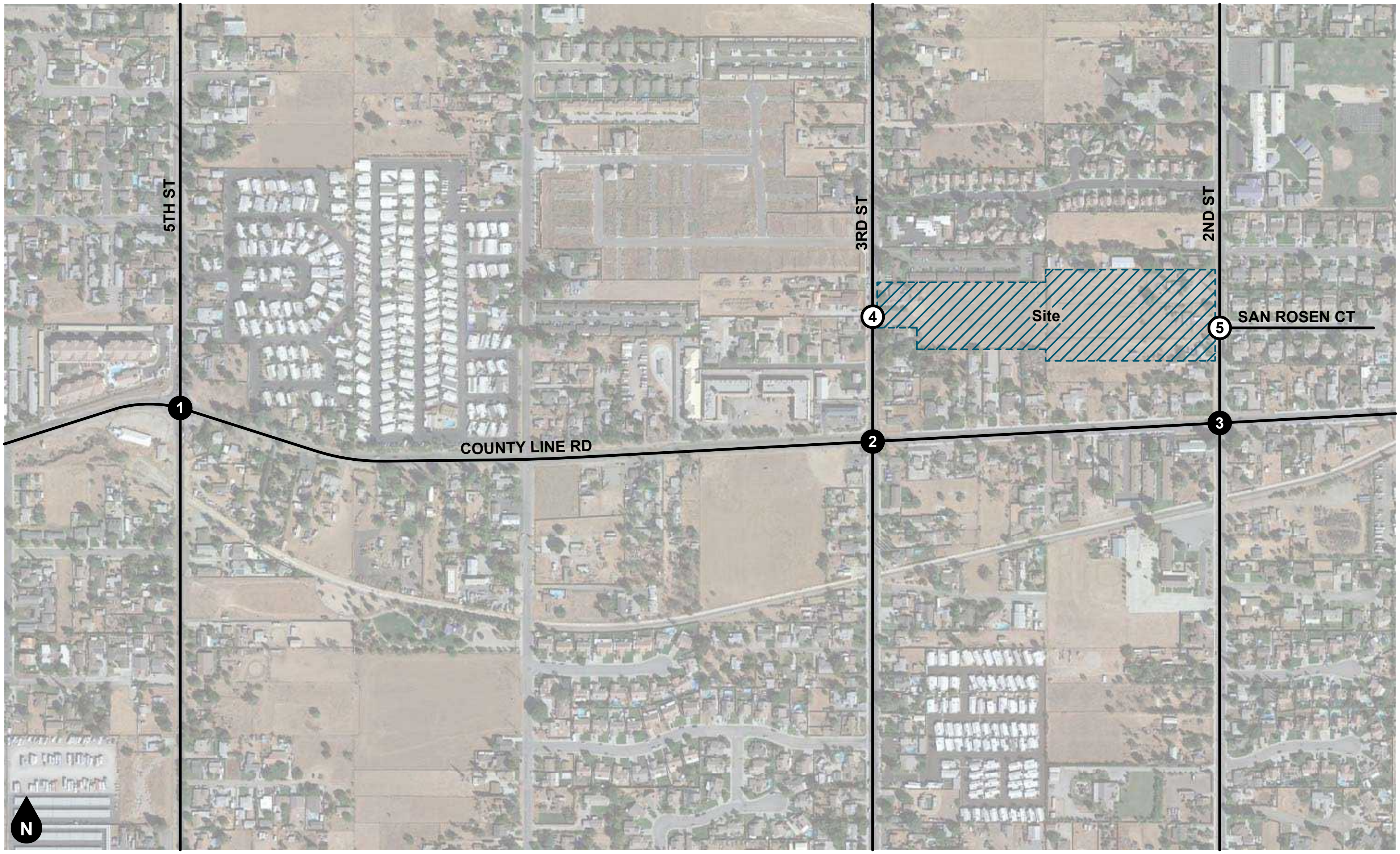
Fallbrook Meadows Residential Project
Traffic Impact Analysis
19403



Legend

Study Intersection

Project Driveway

Figure 2
Project Location Map

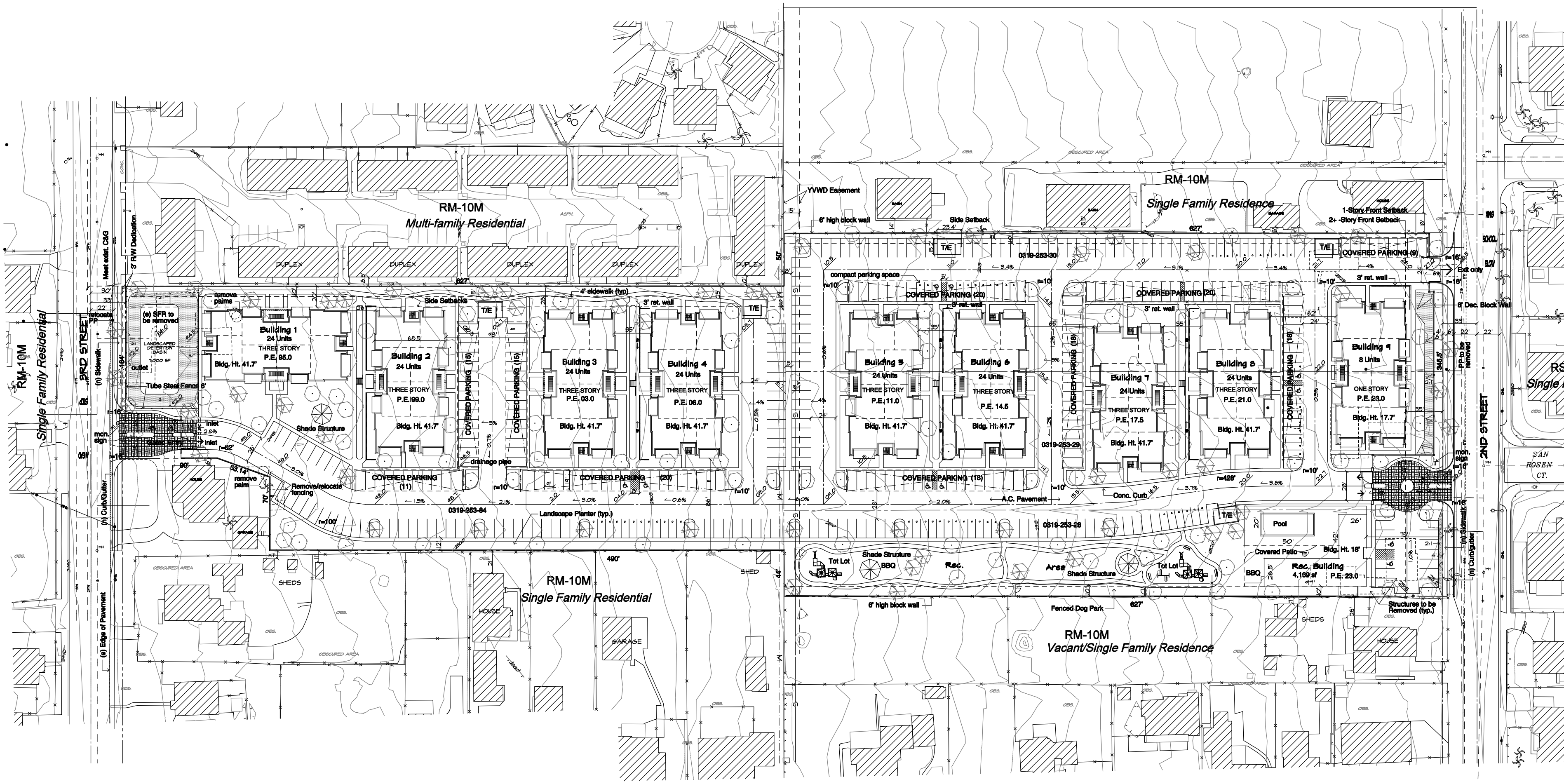


Figure 3
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies. This traffic impact analysis is based on the guidelines and thresholds established in the City of Yucaipa *Traffic Impact Analysis Guidelines (August 2020)* ["the City TIA Guidelines"].

LEVEL OF SERVICE ANALYTICAL METHODOLOGY (NON-CEQA)

Level of Service analysis is performed for assessing conformance with General Plan and operational standards established by the applicable agencies. In accordance with current CEQA provisions, a project's effect on automobile delay (as measured by Level of Service) shall not constitute a significant environmental impact.

Intersection Delay Methodology

The technique used to assess the performance of an intersection is known as the intersection delay method based on the procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst minor-street approach or major street left turn lane.

Intersection delay analysis was performed using the Vistro software. Level of Service analysis procedures and assumptions, such as saturation flow rates for *Highway Capacity Manual* calculations, were used in accordance with the parameters specified in the City's TIA Guidelines.

Performance Standards

The City of Yucaipa General Plan Policy T-2.1 identifies the following Level of Service standards:

To promote the safe and efficient movement of vehicular traffic, maintain a minimum level of service (LOS) C on all intersections and road segments except for two conditions:

- *At roadway intersections where traffic movements are controlled by roundabouts, LOS D shall be acceptable (e.g., average control delay of 30 seconds per vehicle or better).*
- *On roadway segments where a roundabout controls at least one of the intersections at the ends of the segment, the lower half of LOS D shall be acceptable (e.g., V/C ratio of 0.849 or better).*

Substantial Operational Deficiency Criteria

Based on the performance standards established in the City's General Plan and County of San Bernardino *Transportation Impact Study Guidelines (July 2019*) the following criteria are used to determine whether a project causes a substantial operational deficiency and should be required to provide improvements or corrective measures:

- The addition of project generated trips at a signalized study intersection is forecast to cause Level of Service (C or better) to degrade to Level of Service (D, E or F) shall identify improvements to enhance operations to Level of Service (C or better); or,
- The addition of project generated trips at a signalized study intersection is forecast to worsen unacceptable Level of Service (D, E, or F) by increased delay of five or more (5.0+) seconds shall identify improvements to offset the increase in delay; or,
- The addition of project generated trips at a stop-controlled study intersection is forecast to cause or worsen unacceptable Level of Service (D, E, or F) by increased delay of five or more (5.0+) seconds, AND a traffic signal control is warranted based on the California Manual on Uniform Traffic Control peak hour volume warrant (Warrant 3); or,
- The addition of project generated trips at a roundabout study intersection is forecast to cause or worsen unacceptable Level of Service (E or F).

If a project is forecast to result in a substantial operational deficiency, recommended corrective measures are identified that would reduce the project's effect to a level that does not exceed the specified deficiency criteria. Corrective measures can be in many forms, including the construction of physical improvements (e.g., addition of travel lanes, traffic control modifications, etc.) or the implementation of transportation demand management measures.

VEHICLE MILES TRAVELED ANALYTICAL METHODOLOGY (CEQA)

The methodology used to evaluate the transportation impact of land use and transportation projects under CEQA is known as vehicle miles traveled (VMT). In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Additional information and a detailed project assessment are provided in a separate vehicle miles traveled analysis report.

3. EXISTING CONDITIONS

This section describes the existing transportation setting and relevant master plans.

EXISTING ROADWAY SYSTEM

Figure 4 shows the lane geometry and intersection traffic controls for existing conditions based on a field survey of the study area. Regional access to the project site is provided by Interstate 10 approximately 1.1 miles to the west. Local north-south circulation is provided by 5th Street, 3rd Street and 2nd Street, and east-west circulation is provided by County Line Road.

County Line Road: This two-lane undivided roadway trends in an east-west direction and is classified as a Secondary Arterial (4 lane-undivided with 100 feet of right-of-way) on the City of Yucaipa General Plan Circulation Element in the study area. On-street parking is prohibited on both sides of the roadway. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies County Line Road as an existing Class II bike lane (marked/on-street). Sidewalks are generally incomplete/intermittent in the project vicinity except along developed commercial properties and between east of 3rd Street adjacent to residential properties.

5th Street: This two-lane undivided roadway trends in a north-south direction and is classified as a Secondary Arterial (4 lane-undivided with 100 feet of right-of-way) on the City of Yucaipa General Plan Circulation Element in the study area. On-street parking is not prohibited on both sides of the roadway. No bicycle facilities are provided in the study area. There are no sidewalks provided except on the west side of the roadway through the residential neighborhood to the north. The roadway has a posted speed of 35 miles per hour.

3rd Street: This two-lane undivided roadway trends in a north-south direction and is classified as a local roadway on the City of Yucaipa General Plan Circulation Element in the study area. On-street parking is generally permitted on both sides of the roadway. No bicycle facilities are provided in the study area. There are sidewalks provided on the west side of the roadway south of the proposed project and incomplete/intermittent sidewalks on the east side of the roadway. The roadway has a posted speed of 35 miles per hour.

2nd Street: This two-lane undivided roadway trends in a north-south direction and is classified as a local roadway on the City of Yucaipa General Plan Circulation Element in the study area. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies 2nd Street as a Class III bike route (unmarked/on-street). On-street parking is generally permitted on both sides of the roadway. There are sidewalks provided on the east side of the roadway and incomplete/intermittent sidewalks on the east side of the roadway. The roadway has a posted speed of 25 miles per hour for the school zone north of the proposed project.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 5. As shown on Figure 5, sidewalks are not currently provided along the project site frontage.

TRANSIT FACILITIES

Figure 6 shows the existing Omnitrans system available in the project vicinity. As shown in Figure 6, Omnitrans Route 319 runs along County Line Road with a bus stop located at the northwest corner of 2nd Street and County Line Road and a bus stop located at the northwest corner of 3rd Street and County Line Road.

GENERAL PLAN CONTEXT

Figure 7 shows the City of Yucaipa General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Yucaipa standard roadway cross-sections are illustrated on Figure 8.

BICYCLE FACILITIES AND PEDESTRIAN TRAILS

The City of Yucaipa Bicycle Master Plan is shown on Figure 9. This figure shows the existing and future bicycle facilities. As shown on Figure 9, County Line Road is shown as a Class II bike lane and 2nd Street is shown as a proposed Class III bike route.

EXISTING ROADWAY VOLUMES

Figure 10 shows the existing (year 2021) average daily traffic volumes. The existing average daily traffic volumes have been factored from peak hour intersection turning movement volumes at locations using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 11.5= Leg Volume

Figure 11 and Figure 12 show the existing (year 2021) AM and PM peak hour intersection turning movement volumes. Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained in July 2021 during typical weekday conditions. The weekday AM peak period was counted between 7:00 AM and 9:00 AM and the weekday PM peak period was counted between 4:00 PM and 6:00 PM; these periods generally capture the peak times for commuter traffic when the roadway system is typically experiencing peak demand. The actual peak hour within each two-hour count period is determined based on the sum of the four consecutive 15-minute periods with the highest total volume entering the intersection. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM and may vary at other intersections depending on the four consecutive 15-minute periods that have the highest total volume. Intersection turning movement count worksheets are provided in Appendix C.

Due to abnormal travel patterns associated with the COVID-19 pandemic, the peak hour intersection volumes collected in July 2021 were compared to historical traffic counts to assess whether adjustments were necessary to reflect non-pandemic, school-year conditions. Appendix D contains adjustment factor calculations for comparing the new 2021 counts to non-pandemic estimates derived from September 2019 counts with application of one and one-half percent annual growth to year 2021. As shown in Appendix D, the ratios of the new 2021 counts to estimated non-pandemic volumes are 0.6080 for the AM peak hour and 0.8292 for the PM peak hour. To provide a conservative analysis, an adjustment factor of 1.691 was applied to the July 2021 AM traffic counts (69.1% increase) and an adjustment factor of 1.240 was applied to the July 2021 PM traffic counts (24.0% increase).

EXISTING INTERSECTION LEVEL OF SERVICE

The study intersection Levels of Service for Existing (year 2021) conditions are shown in Table 1. Detailed Level of Service worksheets are provided in Appendix G.

As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (C or better) during the peak hours for Existing conditions, except for the following study intersection that currently operates at Level of Service D during the AM peak hour:

3. 3rd Street at County Line Road

Table 1
Existing Intersection Levels of Service

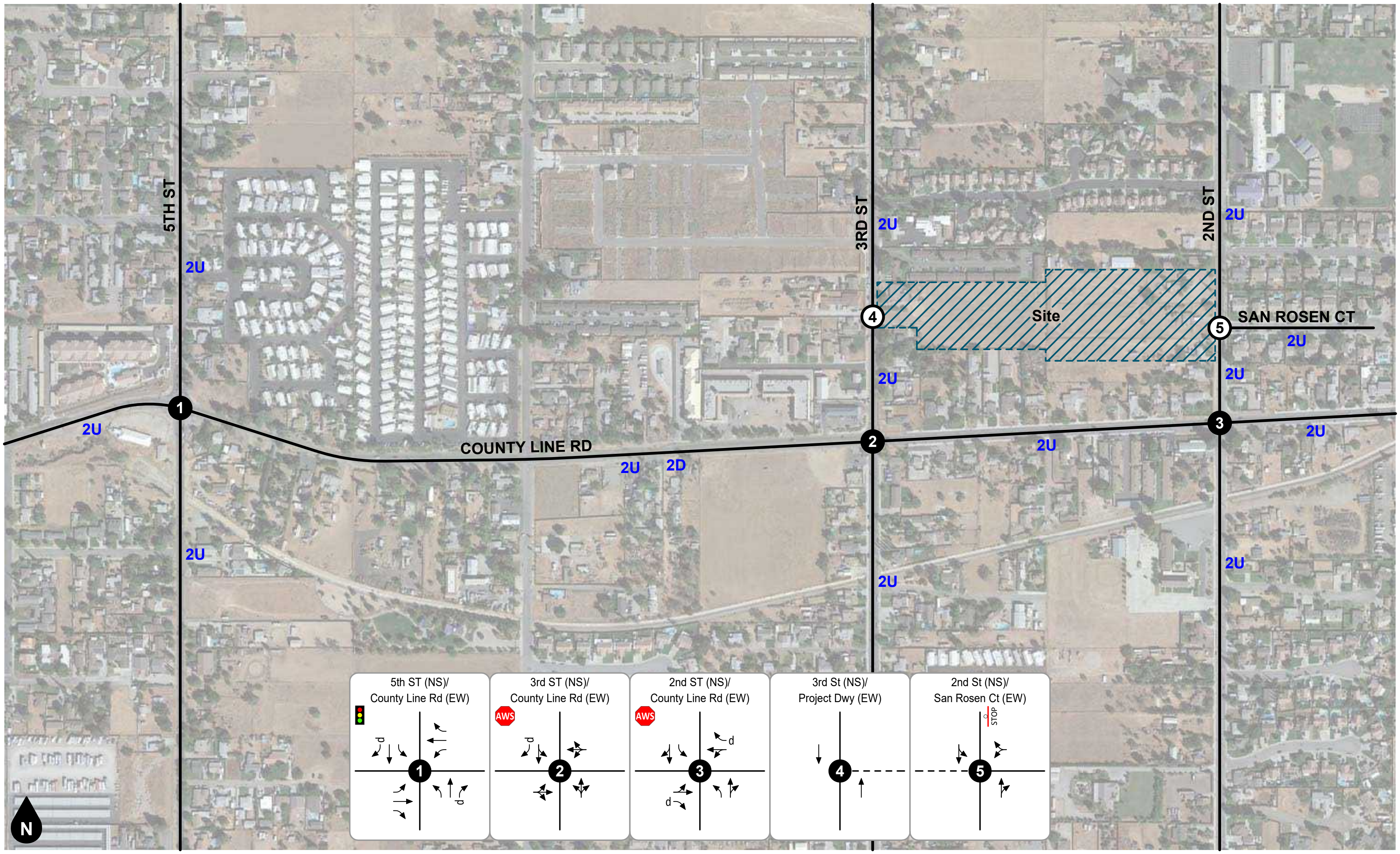
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS
1.	5th Street at County Line Road	TS	27.1	C	23.3	C
2.	3rd Street at County Line Road	AWS	29.7	D	17.0	C
3.	2nd Street at County Line Road	AWS	17.5	C	12.6	B
5.	2nd Street at San Rosen Ct/Project Driveway	CSS	10.5	B	9.5	A

Notes:

(1) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service



Legend

Traffic Signal
AWS All Way Stop
STOP Stop Sign
#D #-Lane Divided Roadway
#U #-Lane Undivided Roadway

Existing Lane
d De Facto Right Turn Lane
--- Project Driveway

Figure 4
Existing Lane Geometry and Intersection Traffic Controls

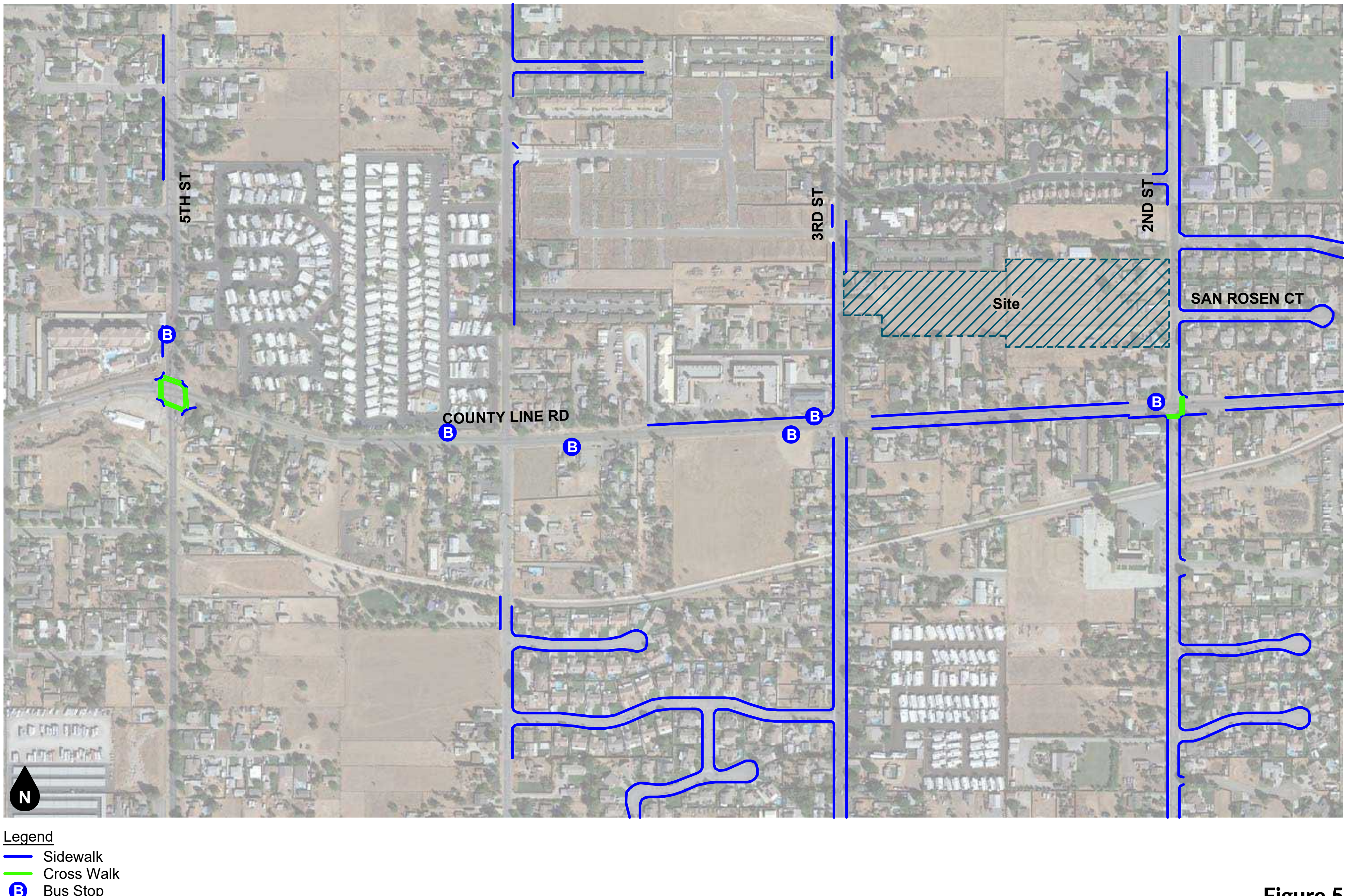
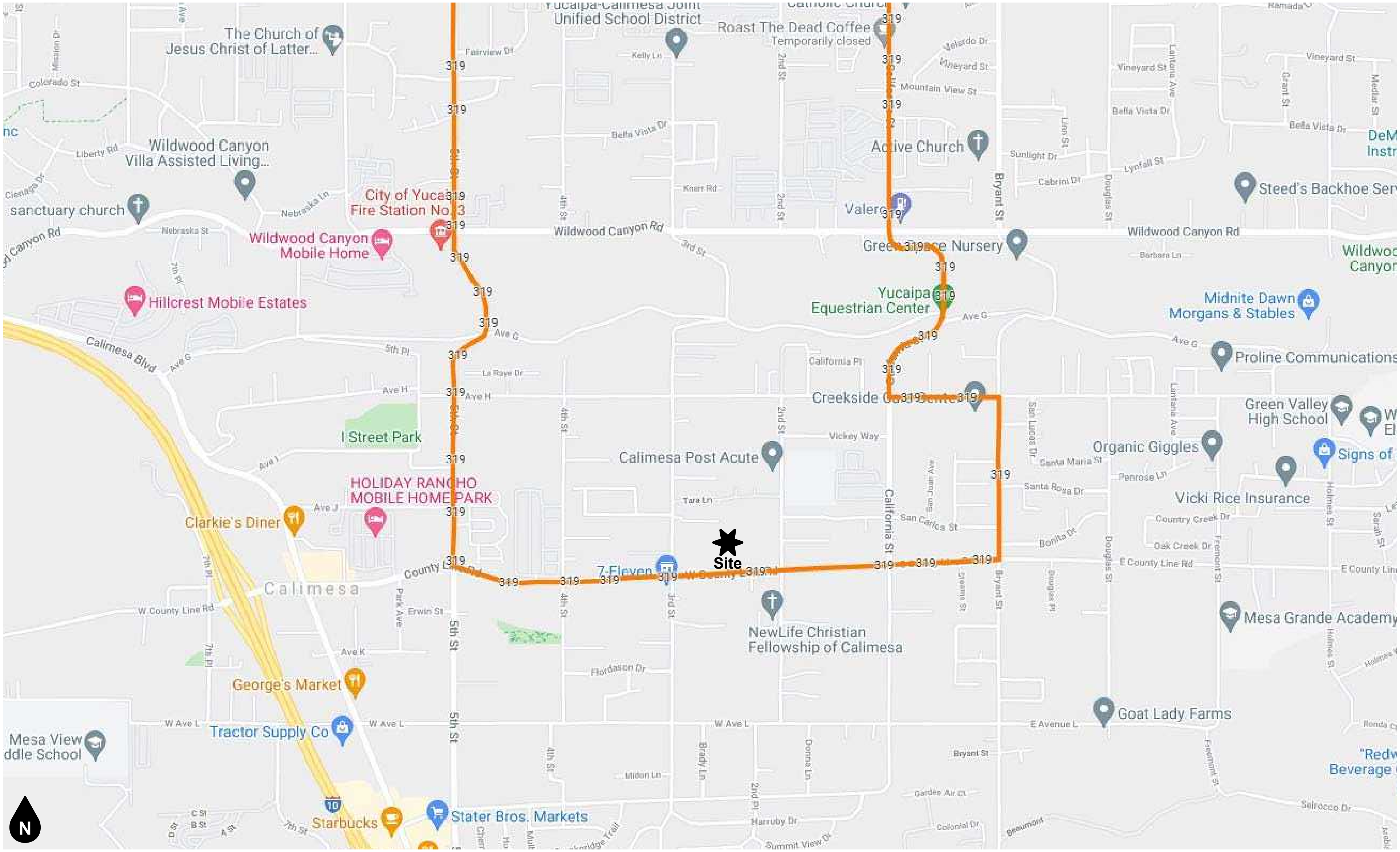


Figure 5
Existing Pedestrian Facilities



Source: Omnitrans

Figure 6
County of San Bernardino Transit Routes

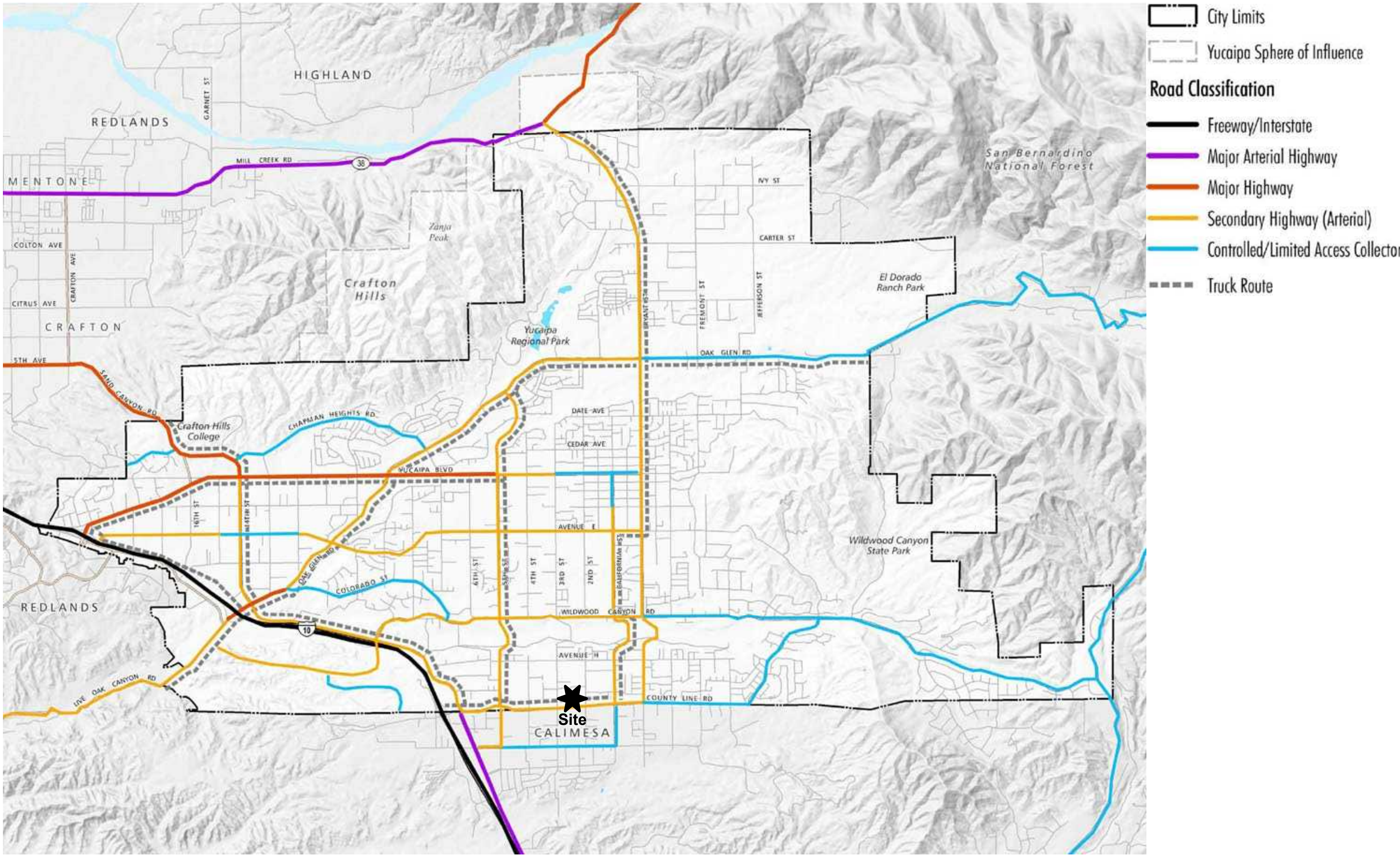
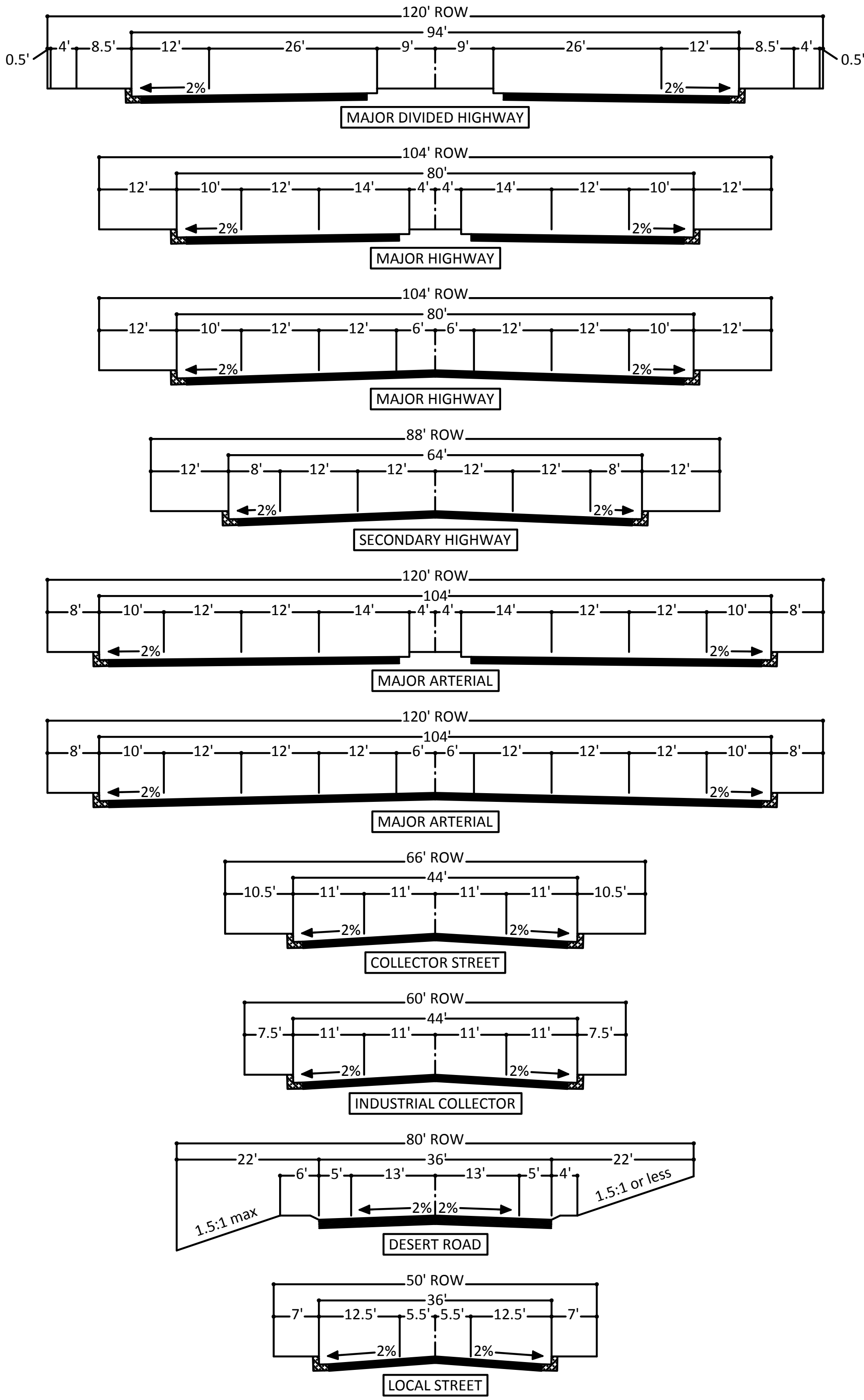


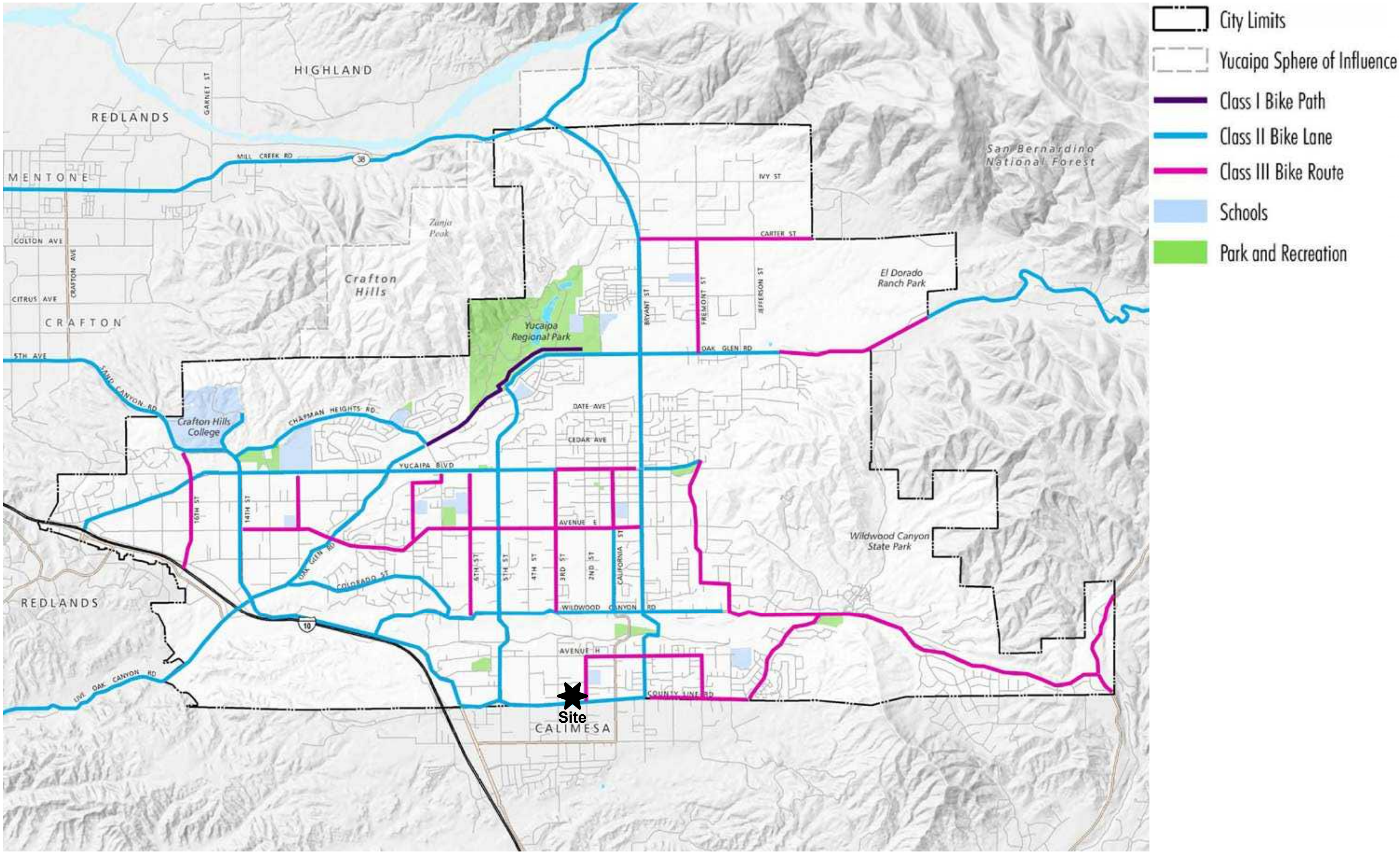
Figure 7
City of Yucaipa General Plan Circulation Element

Source: City of Yucaipa



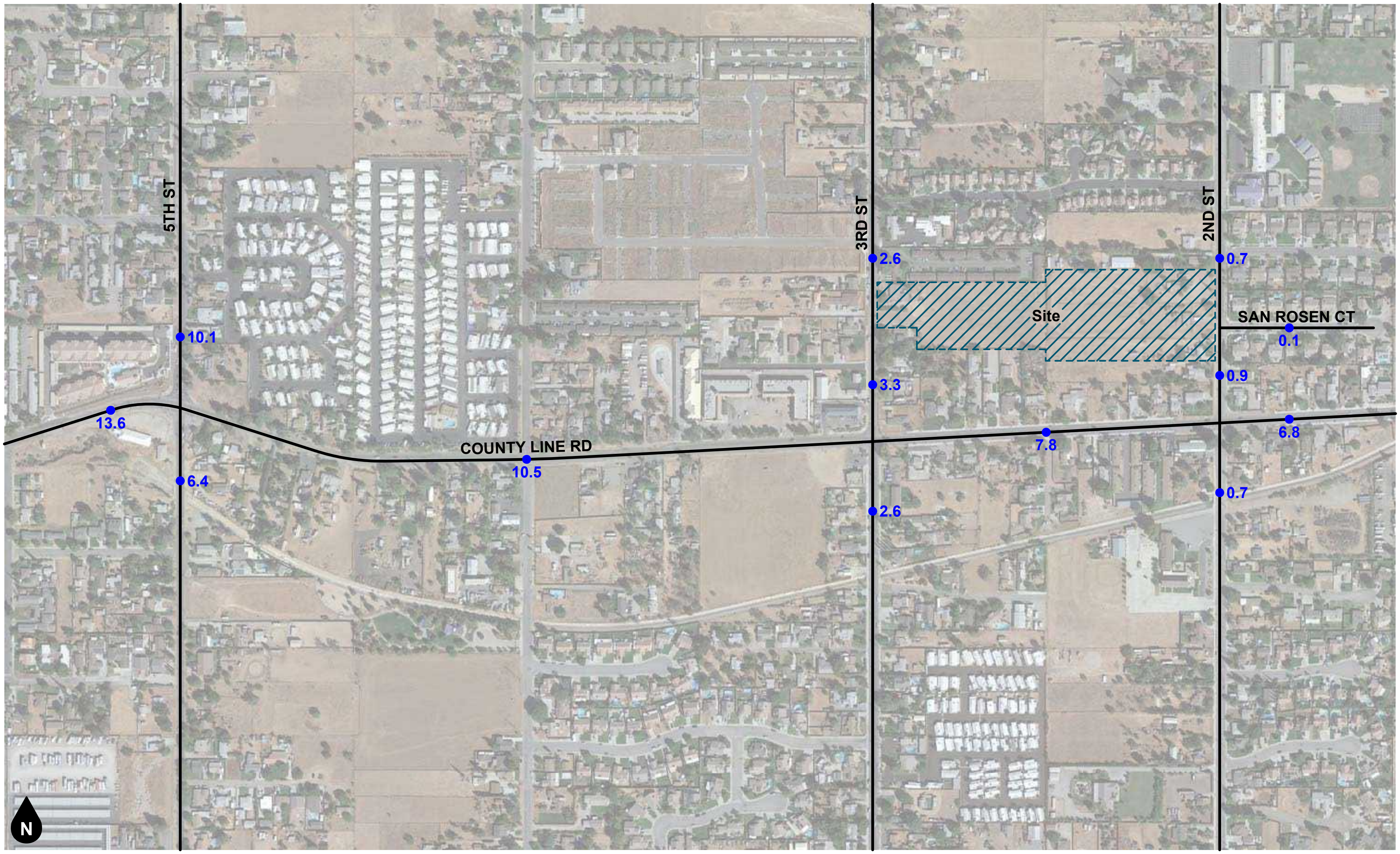
Source: County of San Bernardino

Figure 8
County of San Bernardino General Plan Roadway Cross-Sections



Source: City of Yucaipa

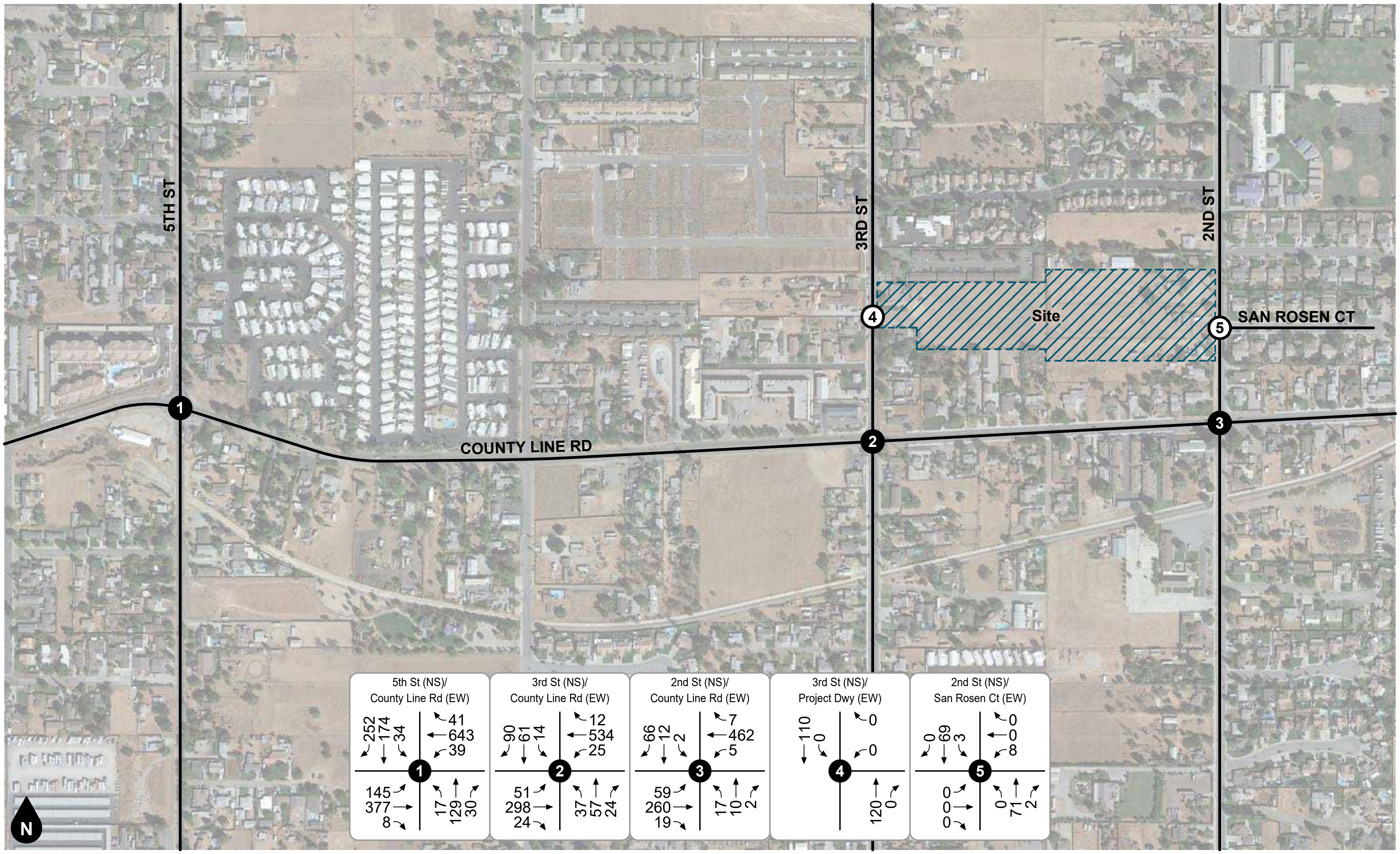
Figure 9
City of Yucaipa General Plan Bikeway Network



Legend

●## Vehicles Per Day (1,000's)

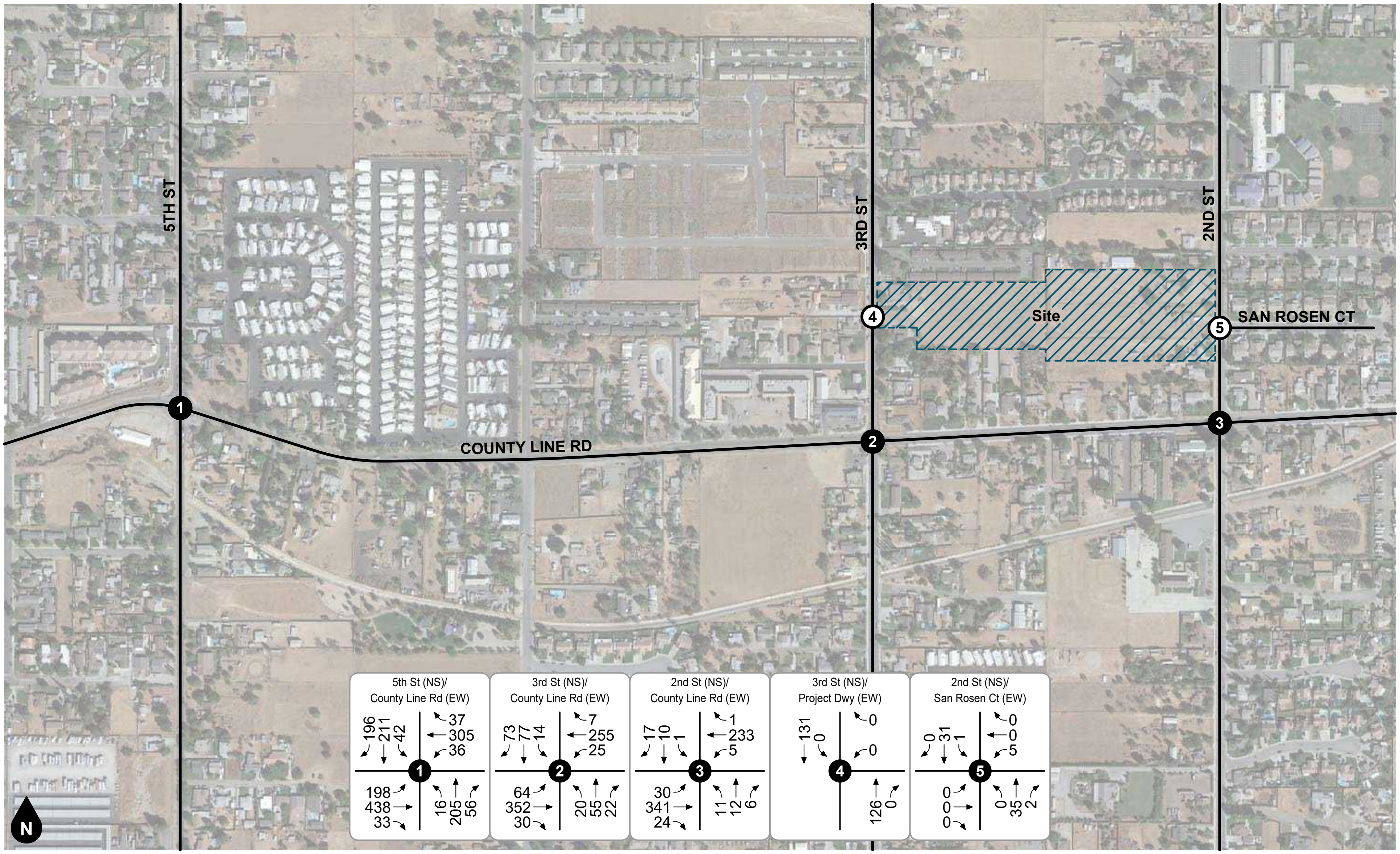
Figure 10
Existing Average Daily Traffic Volumes



Legend

- Study Intersection
- Project Driveway

Figure 11
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend

- Study Intersection
- Project Driveway

Figure 12
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 2 shows the existing, proposed project, and net new project trip generation based on trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017). Trip generation rates for ITE Land Use Code 220 (multi-family residential) were used for the proposed project and rates from ITE Land Use Code 210 (single-family residential) were used for the existing development to be displaced by the project.

As also shown in Table 2, the proposed project is forecast to generate a total of approximately 1,426 daily trips, including 89 during the AM peak hour and 108 trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Figure 13 and Figure 14 show the forecast outbound and inbound directional distribution patterns for the project generated trips. The project trip distribution patterns were determined in consultation with City staff based on review of existing traffic data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

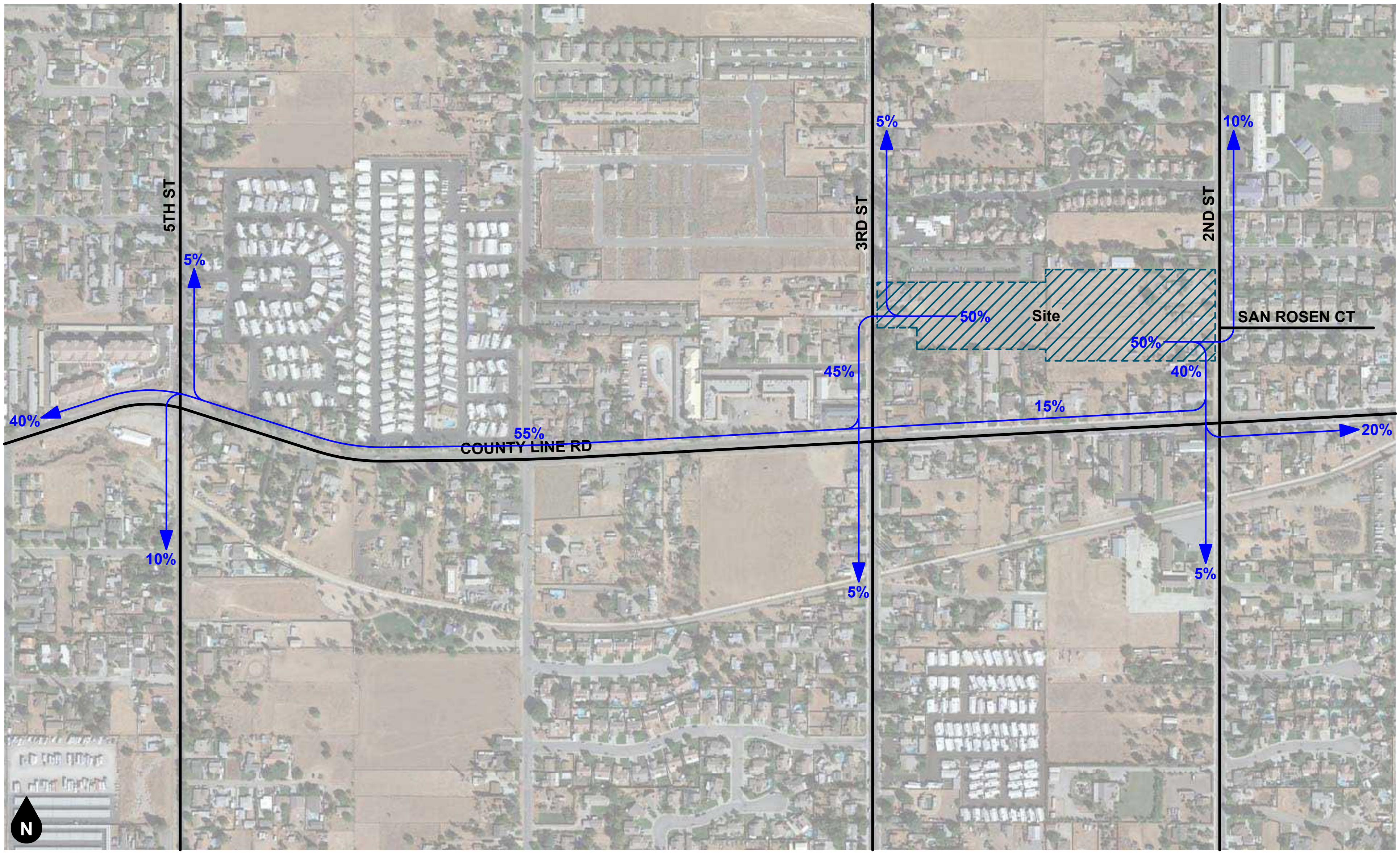
Based on the identified project trip generation and distributions, project weekday average daily traffic volumes are shown on Figure 15. Project-generated AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 16 and Figure 17.

Table 2
Project Trip Generation

Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Daily Rate
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.74	63%	37%	0.99	9.44
Multifamily Housing (Low-Rise)	ITE 220	DU	23%	77%	0.46	63%	37%	0.56	7.32

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Existing Project Site Land Use									
Single-Family Detached Housing	-4	DU	-1	-2	-3	-2	-2	-4	-38
Proposed Project									
Multifamily Housing (Low-Rise)	200	DU	21	71	92	71	41	112	1,464
NET PROJECT TRIPS GENERATED			**+ 20**	**+ 69**	**+ 89**	**+ 69**	**+ 39**	**+ 108**	**+ 1,426**

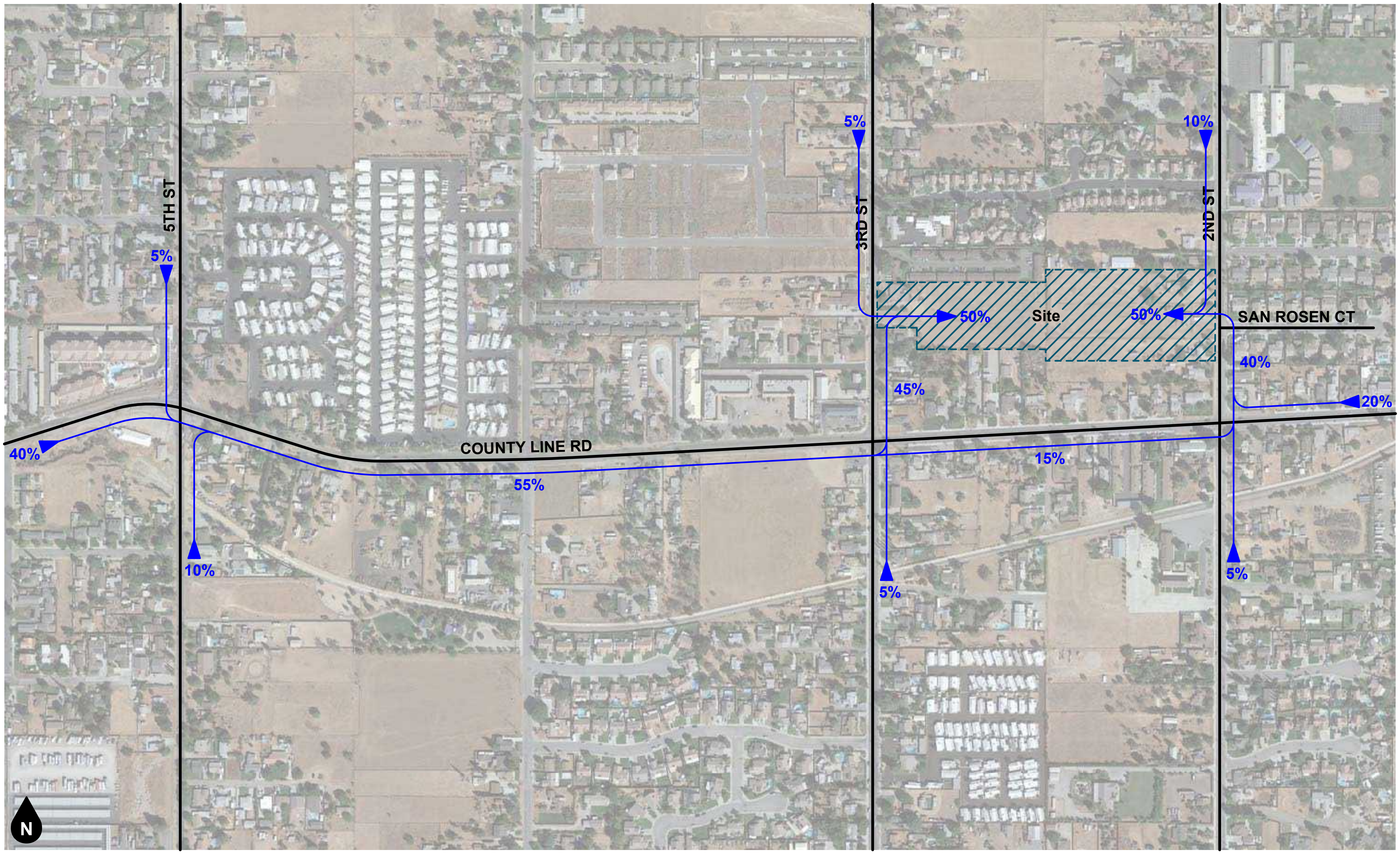
Notes:
(1) Source: ITE = Institute of Transportation Engineers, *Trip Generation Manual (10th Edition, 2017)*; ### = Land Use Code.
(2) DU = Dwelling Units



Legend
10% Percent From Project

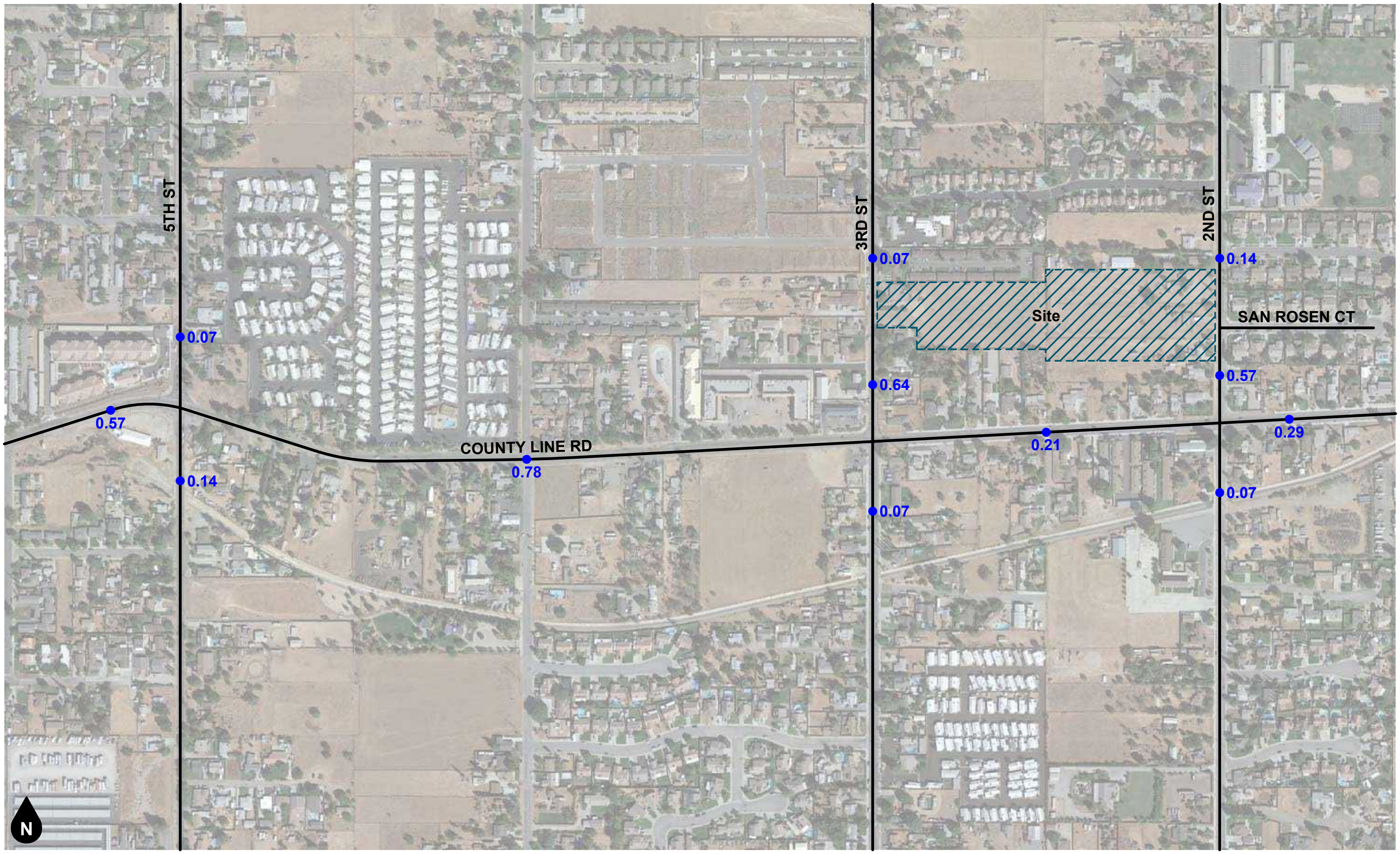
Figure 13
Project Trip Distribution (Outbound)

ganddini



Legend
10% Percent To Project

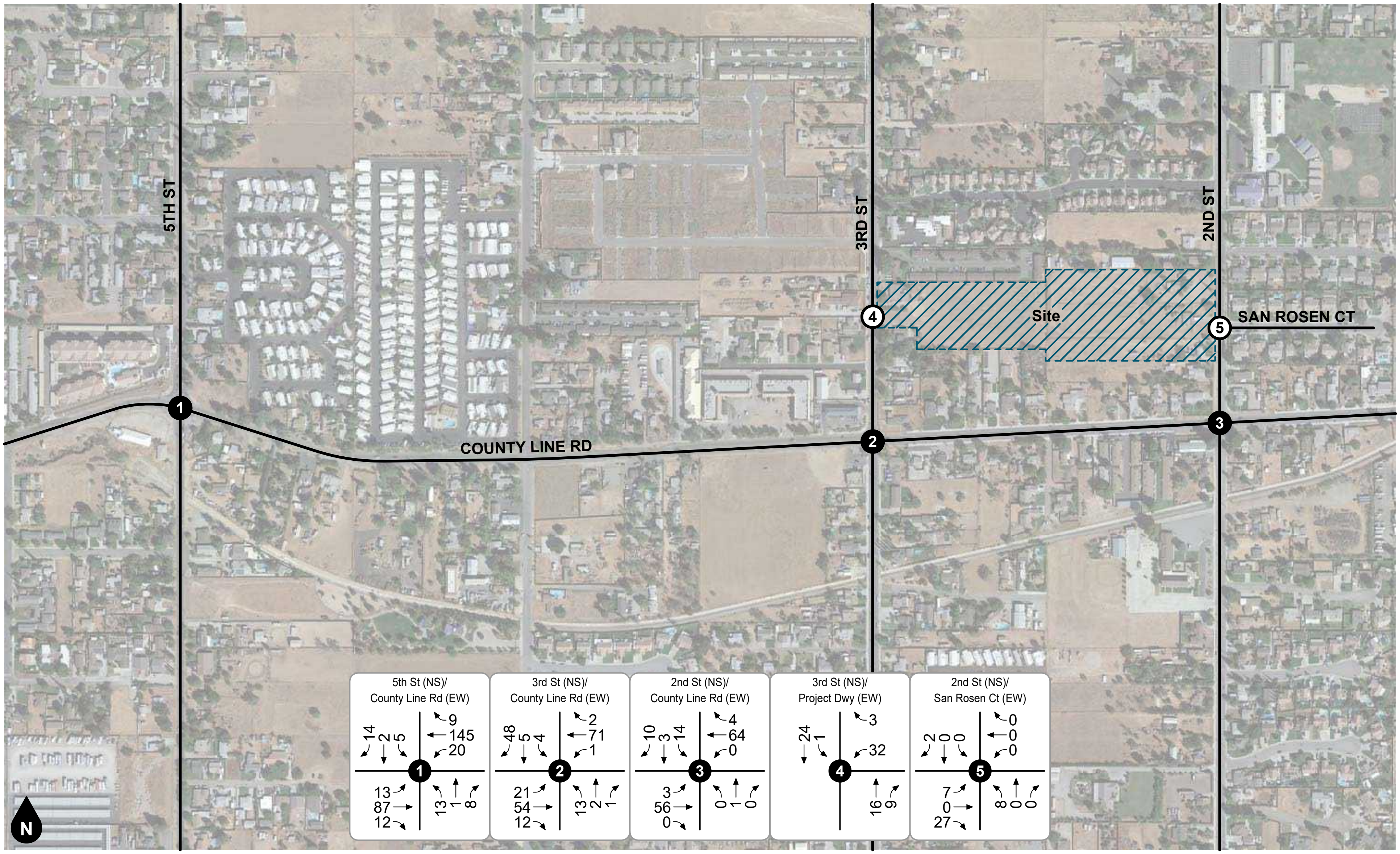
Figure 14
Project Trip Distribution (Inbound)



Legend

●## Vehicles Per Day (1,000's)

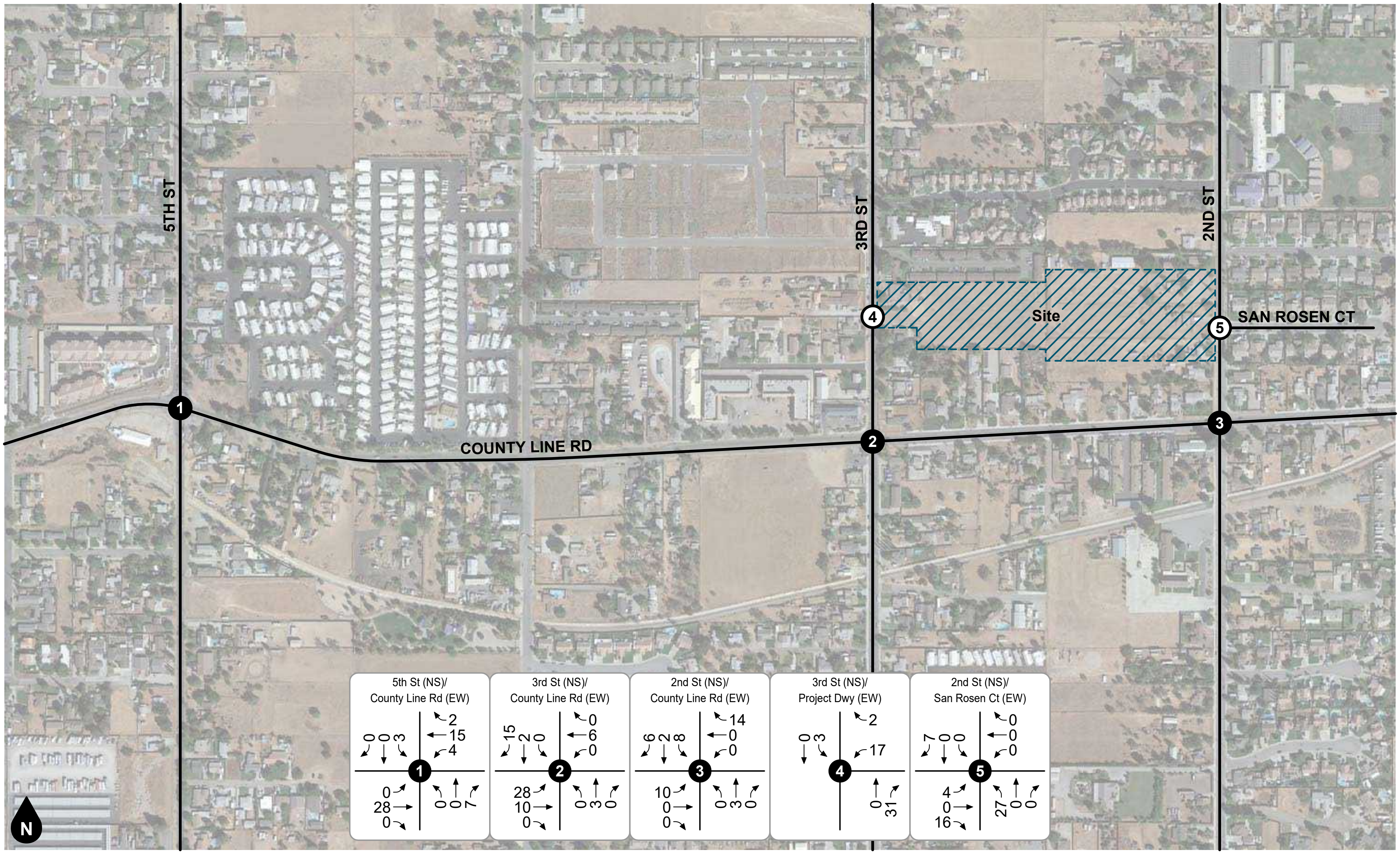
Figure 15
Project Average Daily Traffic Volumes



Legend

- Study Intersection
- Project Driveway

Figure 16
Project AM Peak Hour Intersection Turning Movement Volumes



Legend
- Study Intersection
- Project Driveway

Figure 17
Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes and illustrates the future volume forecasts for each analysis scenario.

METHOD OF PROJECTION

To assess future conditions, existing roadway volumes are combined with project trips, ambient growth, and other development trips. The project completion year for analysis purposes in this report is 2023.

Regional Ambient Growth

To account for traffic volume growth associated with regional development, a growth rate of one and one-half percent (1.5%) per year over a two-year period was applied to existing volumes. This equates to a total growth factor of approximately 1.03. This is a conservative assumption since the ambient growth was applied to all movements at the study intersections.

Other Developments

To account for growth associated with other development projects in the project vicinity, trips generated by other pending or approved but unconstructed developments in the City of Yucaipa and City of Calimesa were reviewed and added to the study area as appropriate. The other development trip generation summary is shown in Table 3. The regional ambient growth is assumed to account for any additional trips generated by other developments outside a 1.5-mile radius from the project site and not specifically listed in Table 3. Figure 18 shows the other development location map.

Average daily traffic volumes generated by other developments are shown on Figure 19. Figure 20 and Figure 21 show the forecast AM peak hour and PM peak hour intersection turning movement volumes for trips generated by other developments.

Model General Buildout Growth

General Buildout (Year 2040) forecasts have been determined using a growth increment approach with the San Bernardino Transportation Analysis Model (SBTAM) base year and horizon year travel demand model plots. This difference defines the incremental growth in forecast volumes over the model growth period. The incremental growth in average daily traffic volume has been factored to reflect the forecast growth between the measured count year (2021) and year 2040. For analysis purposes, linear growth between the base year condition and the horizon year condition was assumed.

To derive AM and PM peak hour intersection turning movement volumes, the traffic volume growth forecasts were further refined using a spreadsheet program developed by the Federal Highway Administration and consistent with traffic volume forecasting procedures outlined in the National Cooperative Highway Research Program Report 255. The spreadsheet program uses a linear programming algorithm to calculate future turning movements based on the relationship of existing intersection turning movements and forecast model growth. The forecast turning movements developed by the spreadsheet program were reviewed for reasonableness and adjusted as necessary to ensure growth over near-term forecasts. The end results of the post-processing procedures are future intersection turning movement volumes suitable for analysis. Travel demand model plots are provided in Appendix E. Travel demand model post-processing worksheets are provided in Appendix F.

FUTURE VOLUMES

Existing Plus Project

The Existing Plus Project volume forecast was developed by adding project-generated trips to existing (year 2021) volumes. Existing Plus Project average daily traffic volumes are shown on Figure 22. Existing Plus Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 23 and Figure 24.

Opening Year (2023) Without Project

The Opening Year (2023) Without Project volume forecast was developed by applying the ambient growth factor to existing (year 2021) volumes and adding trips generated by other developments. Opening Year (2023) Without Project average daily traffic volumes are shown on Figure 25. Opening Year (2023) Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 26 and Figure 27.

Opening Year (2023) With Project

The Opening Year (2023) With Project volume forecast was developed by adding project-generated trips to the Opening Year (2023) Without Project volumes. Opening Year (2023) With Project average daily traffic volumes are shown on Figure 28. Opening Year (2023) With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 29 and Figure 30.

Year 2040 Without Project

The Year 2040 Without Project volume forecast was developed based on SBTAM travel demand growth forecasts and post-processing procedures described above. Year 2040 Without Project average daily traffic volumes are shown on Figure 31. Year 2040 Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 32 and Figure 33.

Year 2040 With Project

The Year 2040 With Project volume forecast was developed by adding project-generated trips to the Year 2040 Without Project scenario. Year 2040 With Project average daily traffic volumes are shown on Figure 34. Year 2040 With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 35 and Figure 36.

Table 3 (1 of 2)
Other Development Trip Generation

ID	Other Development Name/Address	Land Use	Quantity	Units[1]	Source[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
	City of Yucaipa											
Y1	18-121 CUP	Commercial Flex	37.211	TSF	ITE 770	9	6	15	7	9	16	463
Y2	TTM20040	Single Family Detached Housing	29	DU	ITE 210	5	16	21	18	11	29	274
Y3	TTM20252	Single Family Detached Housing	13	DU	ITE 210	2	8	10	8	5	13	123
Y4	17-103 CUP	Car Wash	1	CWT	ITE 948	17	17	34	39	39	78	9
Y5	17-118/LUCR	Senior Attached Housing	96	DU	ITE 252	7	12	19	14	11	25	355
Y6	20-118 CUP	Senior Attached Housing	16	DU	ITE 252	1	2	3	2	2	4	59
Y7	TTM18167	Condominiums	57	DU	ITE 220	6	20	26	20	12	32	417
Y8	20-088/LUCR	Multi-family Attached Housing	3	DU	ITE 220	0	1	1	1	1	2	22
Y9	20-047/TPM	Single Family Detached Housing	4	DU	ITE 210	1	2	3	2	2	4	38
Y10	17-012 CUP	Multi-family Attached Housing	14	DU	ITE 220	1	5	6	5	3	8	102
Y11	TTM17725	Condominiums	108	DU	ITE 220	11	39	50	38	22	60	791
Y12	20-046/TPM	Single Family Detached Housing	4	DU	ITE 210	1	2	3	2	2	4	38
Y13	19-093 CUP	Church	1.500	TSF	ITE 560	0	0	0	0	1	1	10
Y14	20-050	Private K-12 School	60	ST	ITE 534	30	25	55	7	9	16	247
Y15	TTM20066	Single Family Detached Housing	18	DU	ITE 210	3	10	13	11	7	18	170
Y16	18-083	Single Family Detached Housing	21	DU	ITE 210	4	12	16	13	8	21	198
Y17	20-102	Coffee Shop	1.200	TSF	ITE 937	54	53	107	26	26	52	984
Y18	TTM20146	Multi-family Attached Housing	30	DU	ITE 220	3	11	14	11	6	17	220
Y19	16-162 CUP	Multi-family Attached Housing	16	DU	ITE 220	2	5	7	6	3	9	117
Y20	TTM20202	Condominiums	18	DU	ITE 220	2	6	8	6	4	10	132
Y21	20-107	Single Family Detached Housing	4	DU	ITE 210	1	2	3	2	2	4	38
Y22	TTM19929	Condominiums	40	DU	ITE 220	4	14	18	14	8	22	293
Y23	TTM17031	Condominiums	33	DU	ITE 220	3	12	15	12	6	18	242
Y24	TTM20048	Multi-family Attached Housing	21	DU	ITE 220	2	8	10	7	5	12	154
Y25	20-119	Senior Attached Housing	34	DU	ITE 252	2	5	7	5	4	9	126
Y26	TTM 20263	Single Family Detached Housing	44	DU	ITE 220	5	15	20	16	9	25	322
Y27	19-145/LUCR	Multi-family Attached Housing	17	DU	ITE 220	2	6	8	6	4	10	124
Y28	17-089/LUCR	Duplex	2	DU	ITE 220	0	1	1	1	0	1	15
Y29	TTM19900	Senior Adult Housing - Attached	150	DU	ITE 252	11	20	31	21	18	39	555
Y30	TTM19074	Multi-family Attached Housing	16	DU	ITE 221	1	5	6	4	3	7	87
	City of Calimesa											
C1	B&H Fuel & C-Mart	Service Station w/ C-Mart	8	VFP	ITE 945	51	49	100	57	55	112	1,643
		Pass-by: -62%AM; -56%PM			*[b]*	-32	-30	-62	-32	-31	-63	-125
		Subtotal				19	19	38	25	24	49	1,518
C2	Heritage Oaks Specific Plan	Single Family Detached Housing	45	DU	ITE 210	8	25	33	28	17	45	425

Table 3 (2 of 2)
Other Development Trip Generation

ID	Other Development Name/Address	Land Use	Quantity	Units[1]	Source[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
	City of Calimesa											
C3	JP Ranch[4]	Single Family Detached Housing	121	DU	ITE 210	22	68	90	75	45	120	1,142
C4	Sandlewood Travel Center	Mixed-Use	--	--	[b]	126	125	251	135	133	268	3,693
C5	76/Circle K Fuel & C-Mart[5]	Mixed-Use	--	--	[c]	79	66	145	73	69	142	2,836
C6	RV Fueling Station[6]	Mixed-Use	--	--	[d]	151	146	297	87	87	174	2,977
C7	Mesa Verde SP (Phase 1A)	Single Family Detached Housing	226	DU	ITE 210	42	125	167	141	83	224	2,133
TOTAL OTHER DEVELOPMENT TRIPS						**639**	**920**	**1,559**	**894**	**704**	**1,598**	**21,581**

Notes:

(1) DU = Dwelling Units; TSF = Thousand Square Feet; CWT = Carwash Tunnel; VFP = Vehicle Fuel Position; ST = Student; HSG = Housing

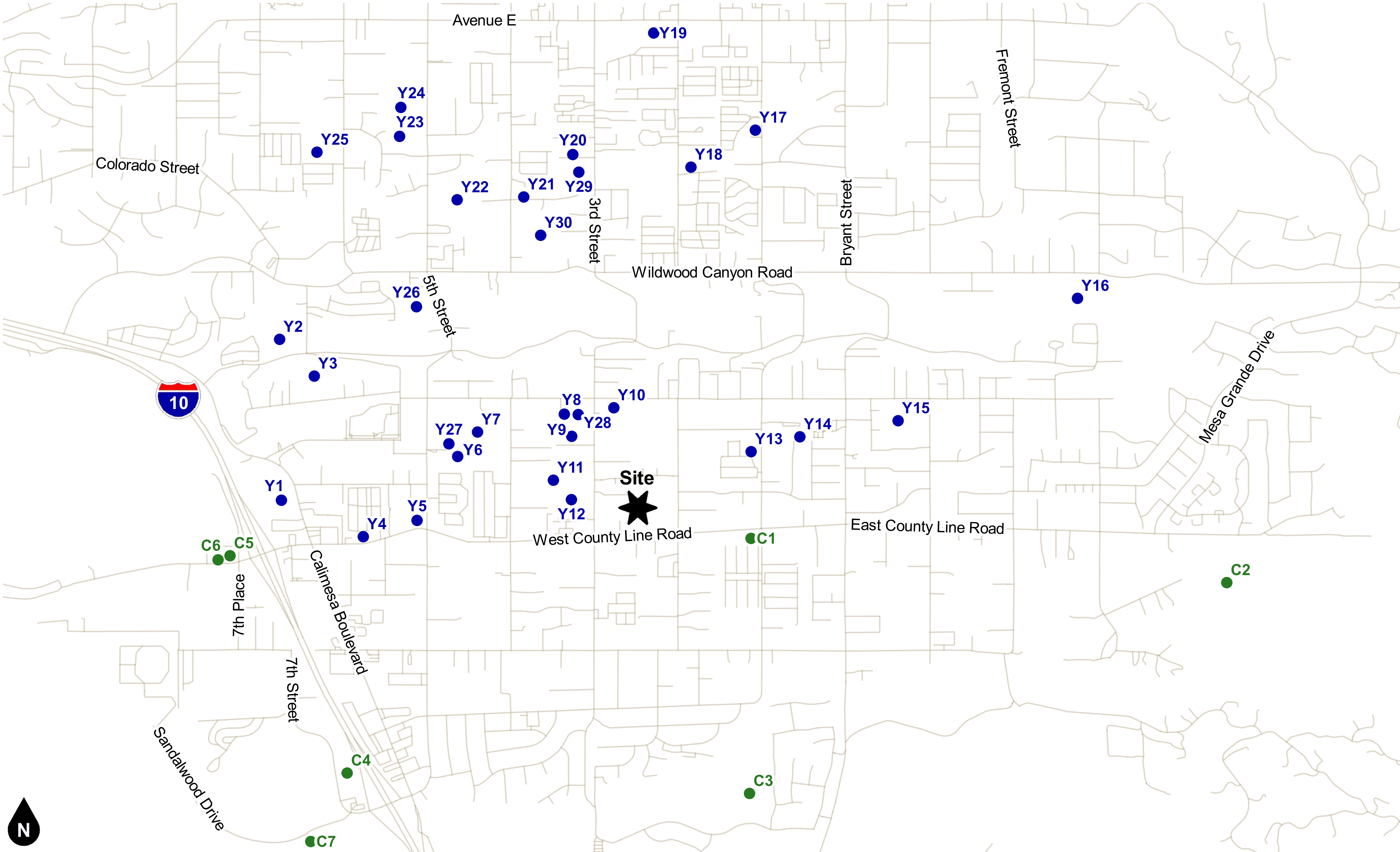
(2) Source: ITE = Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017); ### = Land Use Code

[a] = ITE *Trip Generation Handbook (3rd Edition, 2017)*. Pass-by peak hour values per handbook percentages. Daily pass-by value is the sum of the peak hour values when no daily rate is available.

[b] = *Sandlewood Travel Center Traffic Impact Analysis*, Ganddini Group, Inc., (February 22, 2021).

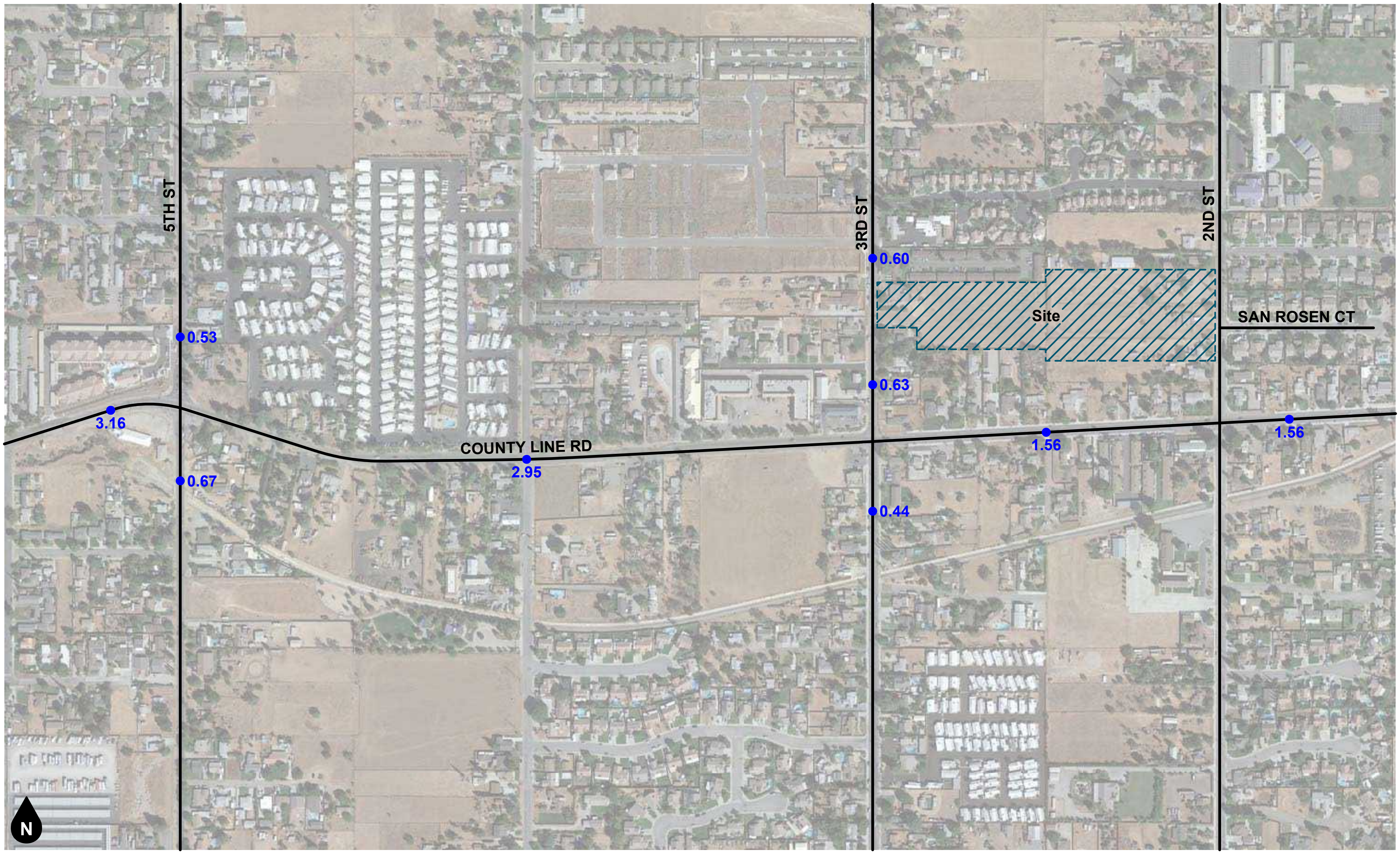
[c] = *Calimesa - County Line Project Traffic Impact Analysis (Revised)*, Kunzman Associates, Inc., (May 17, 2017).

[d] = *7th Street & County Line Road RV Fueling & Retail Project Traffic Impact Analysis*, Ganddini Group, Inc., (July 29, 2020).



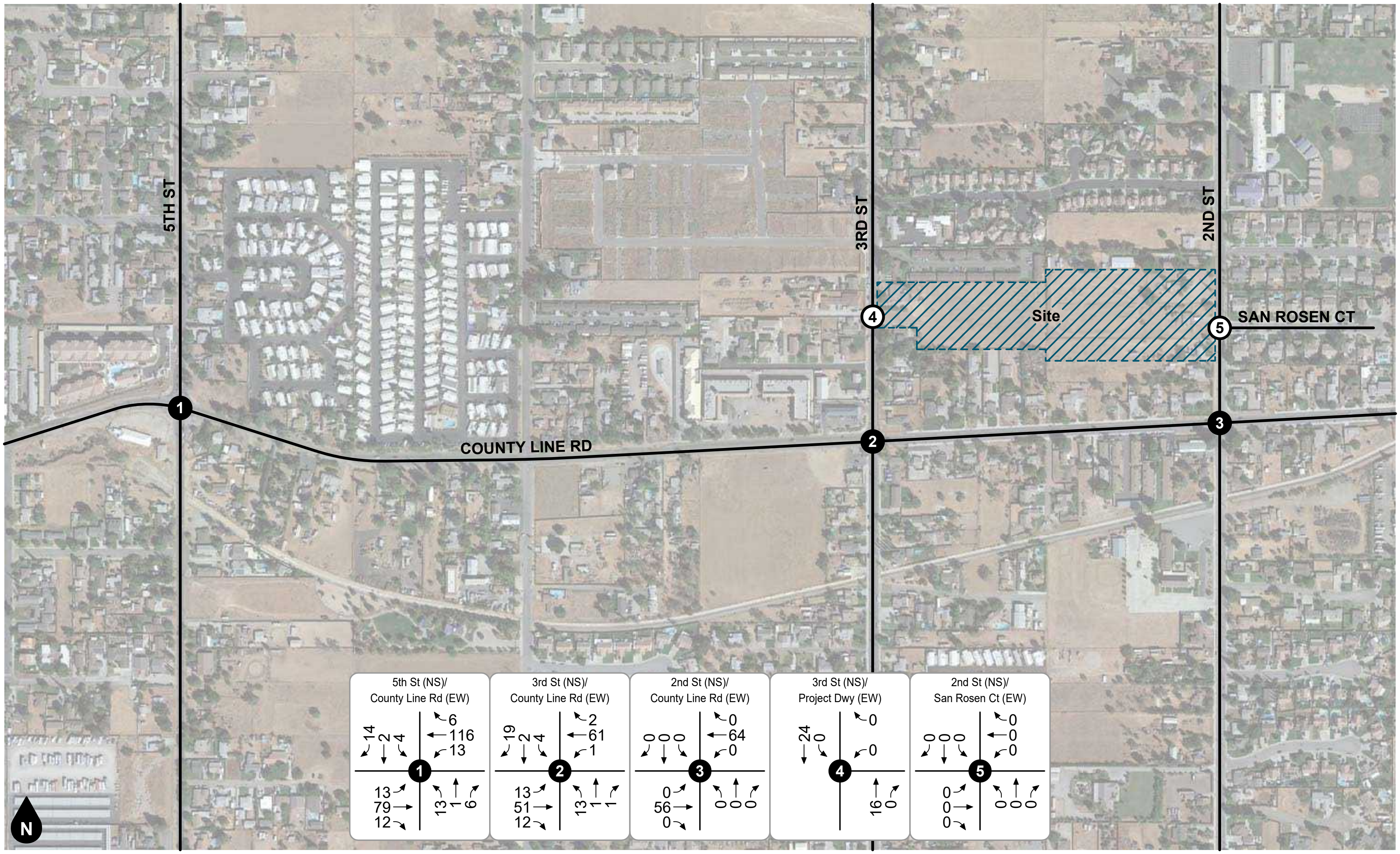
Legend
Other Development ID in:
City of Yucaipa
City of Calimesa

Figure 18
Other Development Location Map



Legend
●## Vehicles Per Day (1,000's)

Figure 19
Other Development Average Daily Traffic Volumes

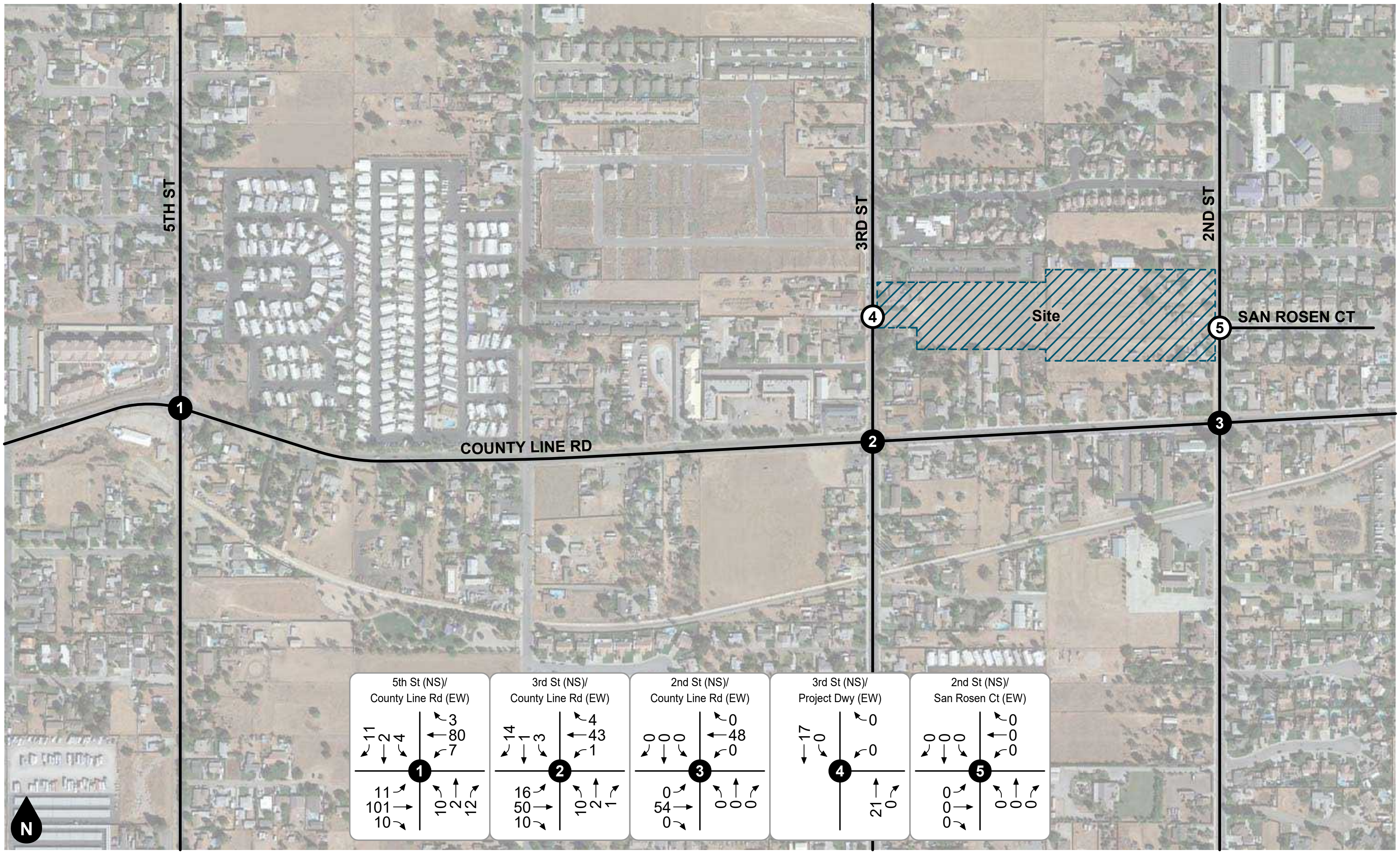


Legend

Study Intersection

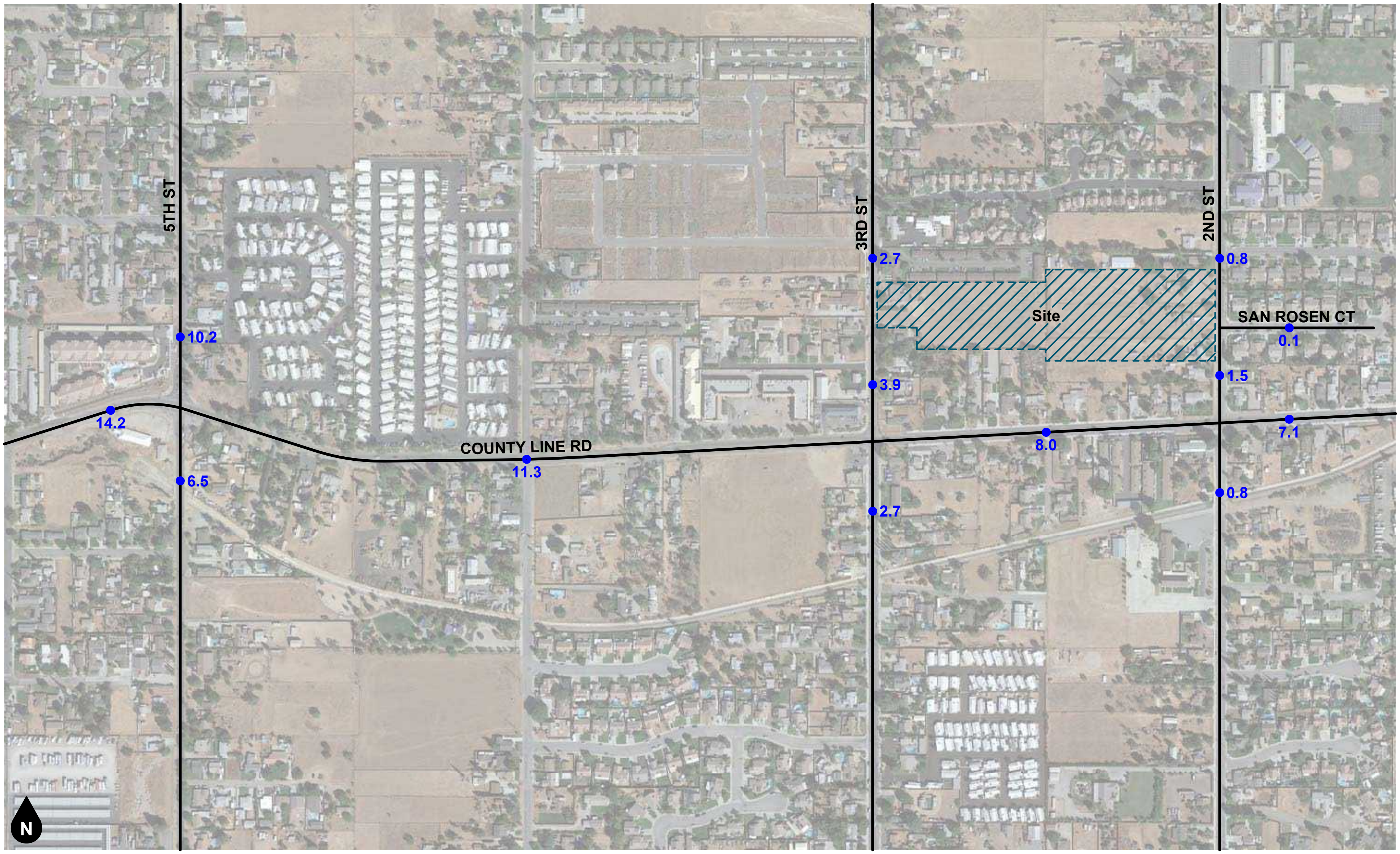
Project Driveway

Figure 20
Other Development
AM Peak Hour Intersection Turning Movement Volumes



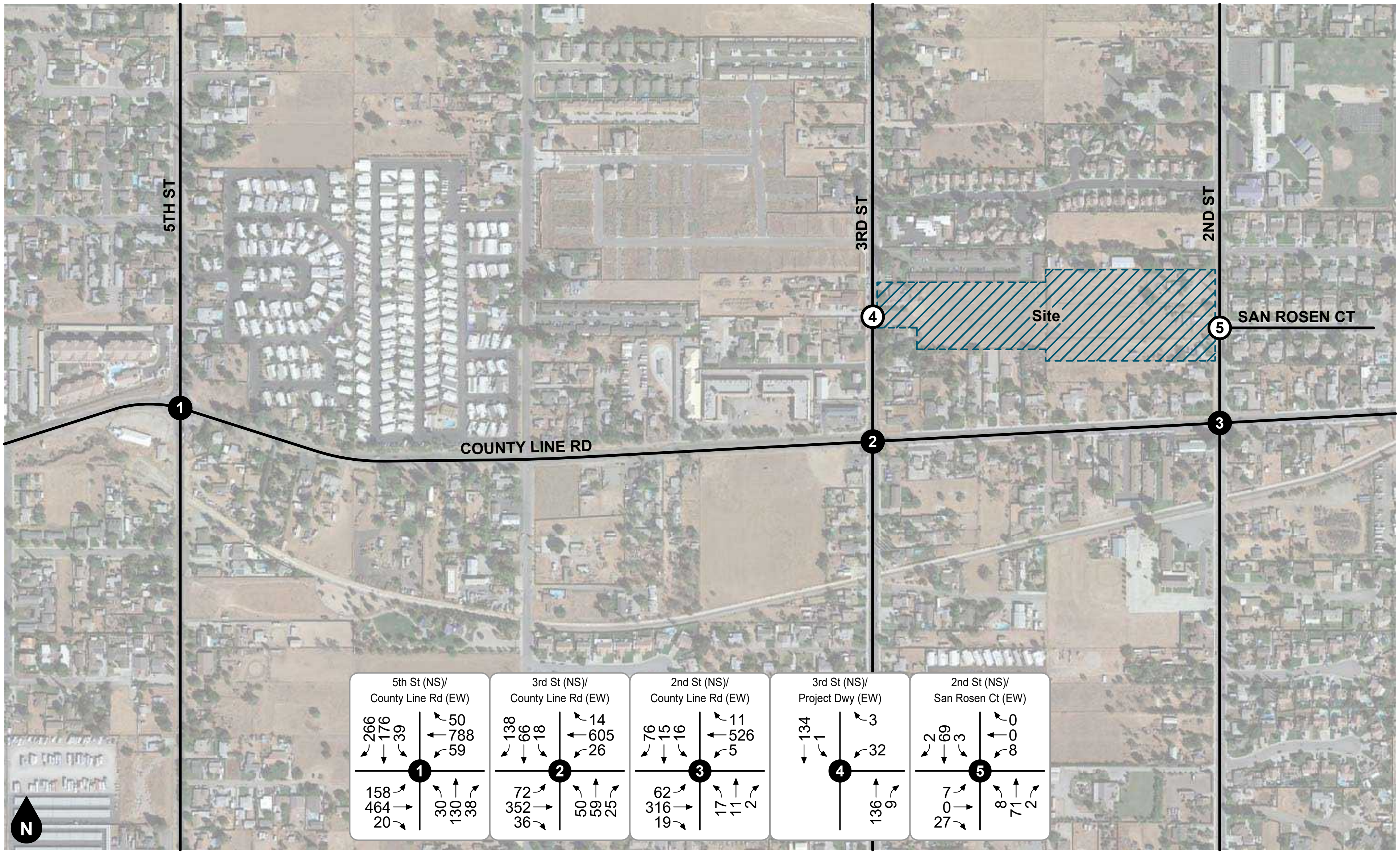
Legend
- Study Intersection
- Project Driveway

Figure 21
Other Development
PM Peak Hour Intersection Turning Movement Volumes



Legend
●## Vehicles Per Day (1,000's)

Figure 22
Existing Plus Project Average Daily Traffic Volumes

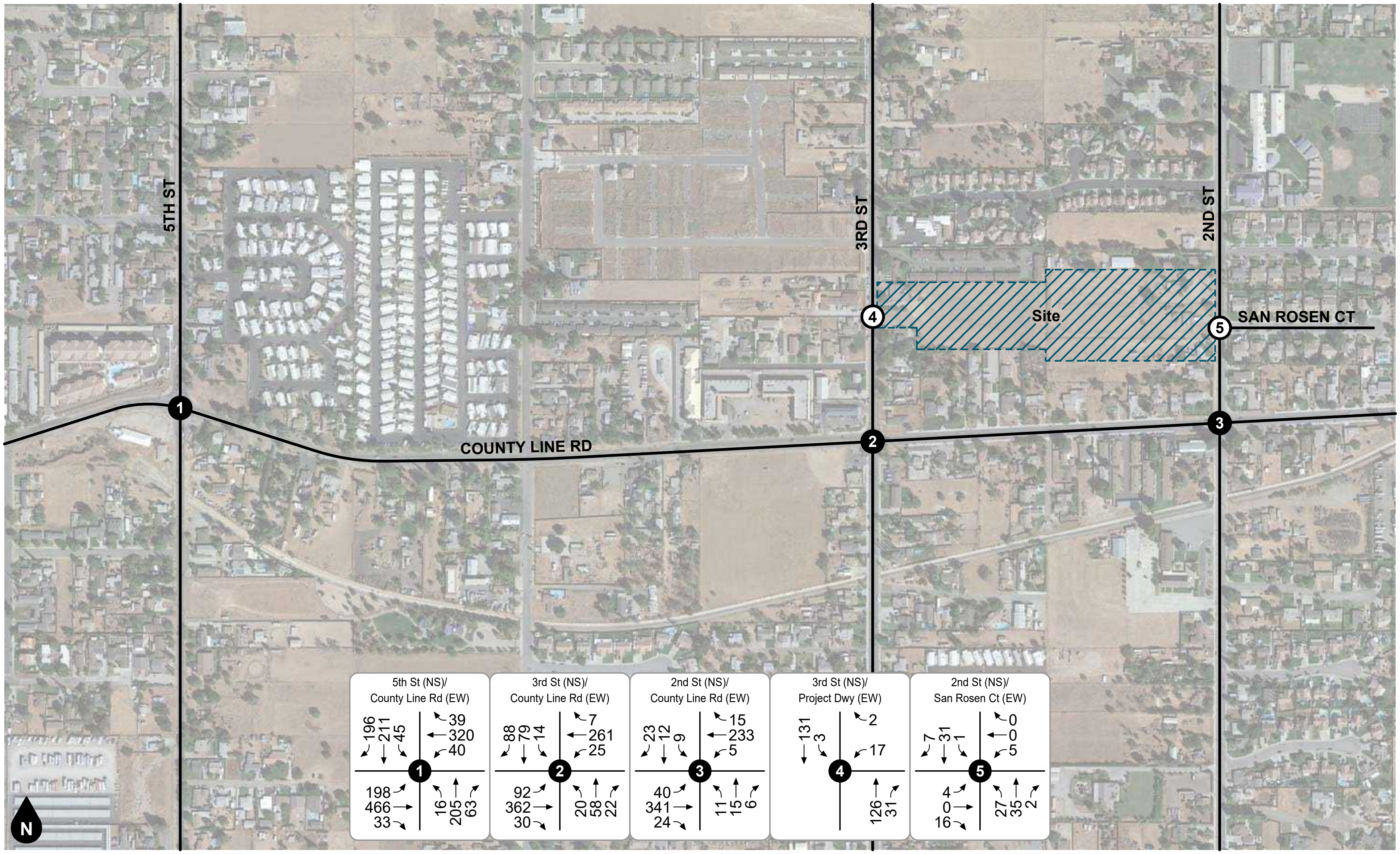


Legend

(#) Study Intersection

(#) Project Driveway

Figure 23
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes

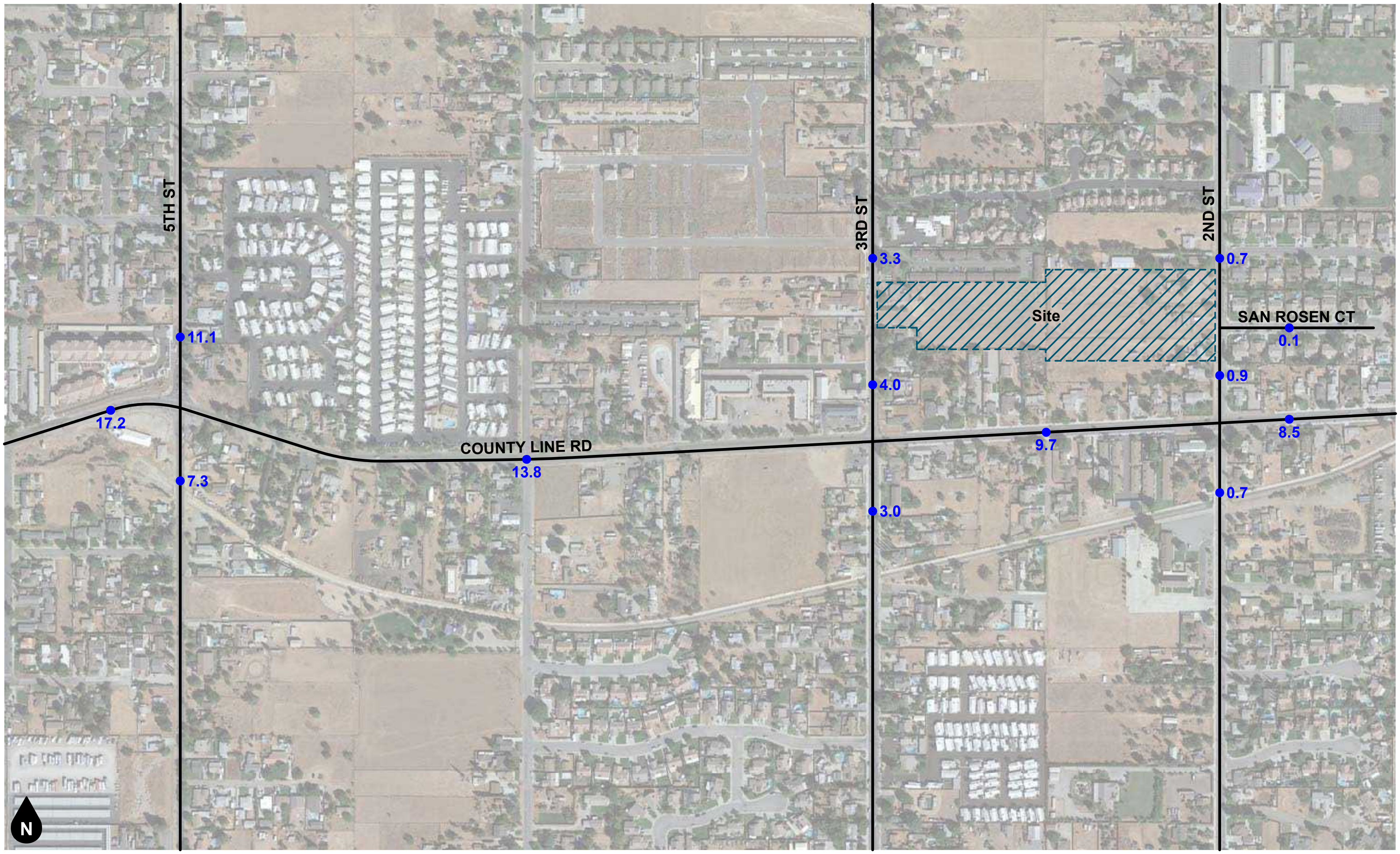


Legend

Study Intersection

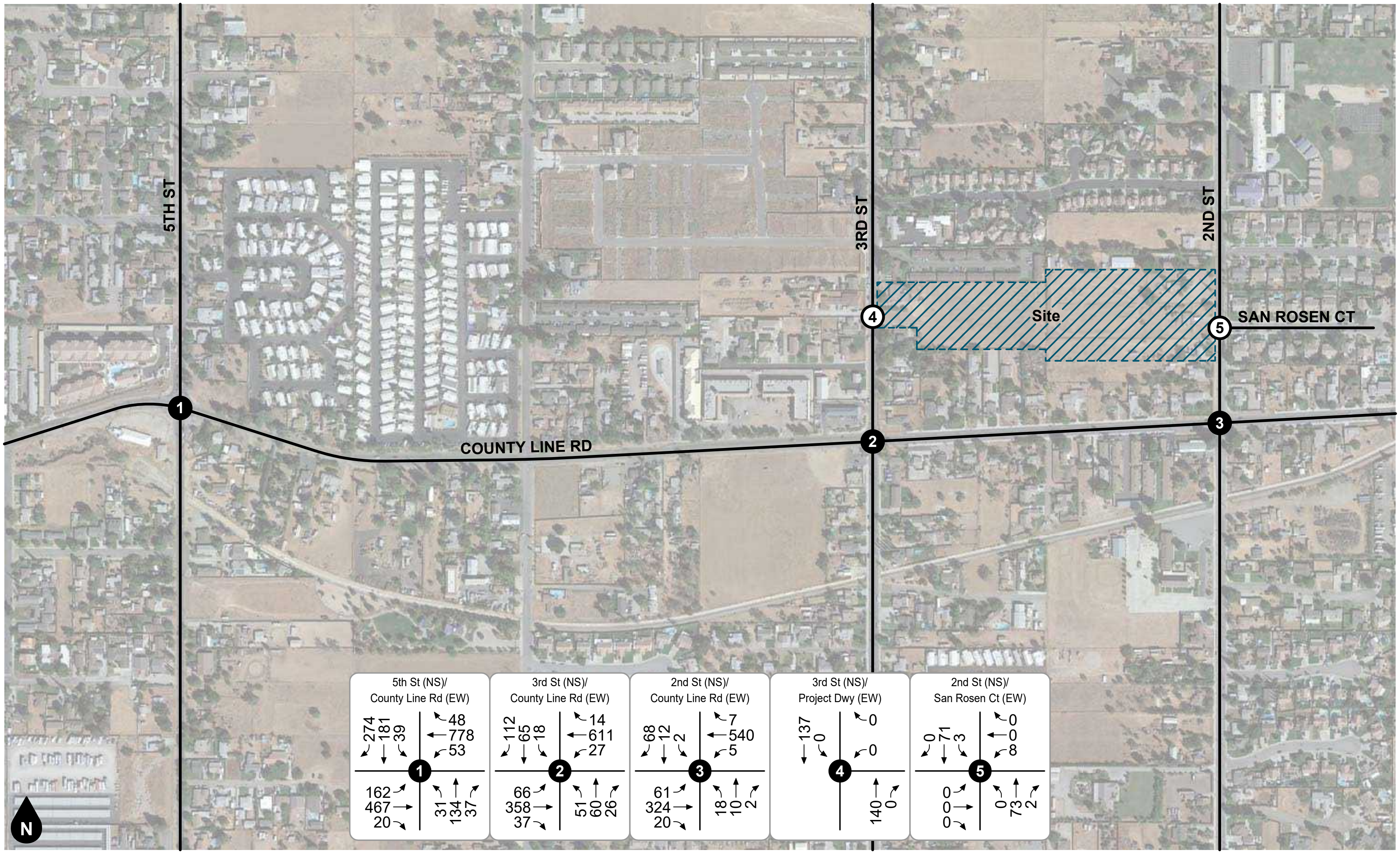
(#) Project Driveway

Figure 24
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
●## Vehicles Per Day (1,000's)

Figure 25
Opening Year (2023) Without Project Average Daily Traffic Volumes



Legend
- # Study Intersection
- (#) Project Driveway

Figure 26
Opening Year (2023) Without Project
AM Peak Hour Intersection Turning Movement Volumes

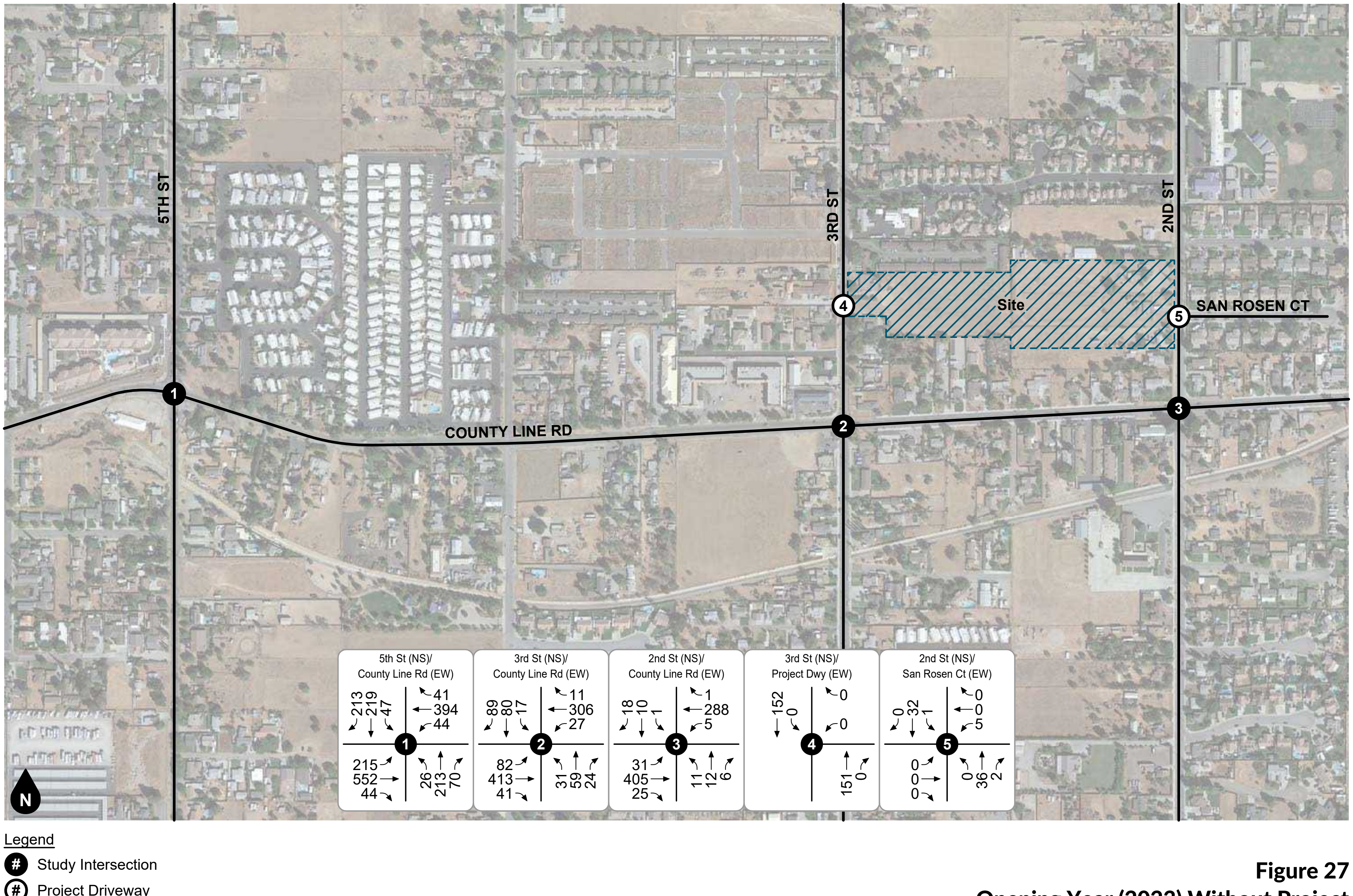
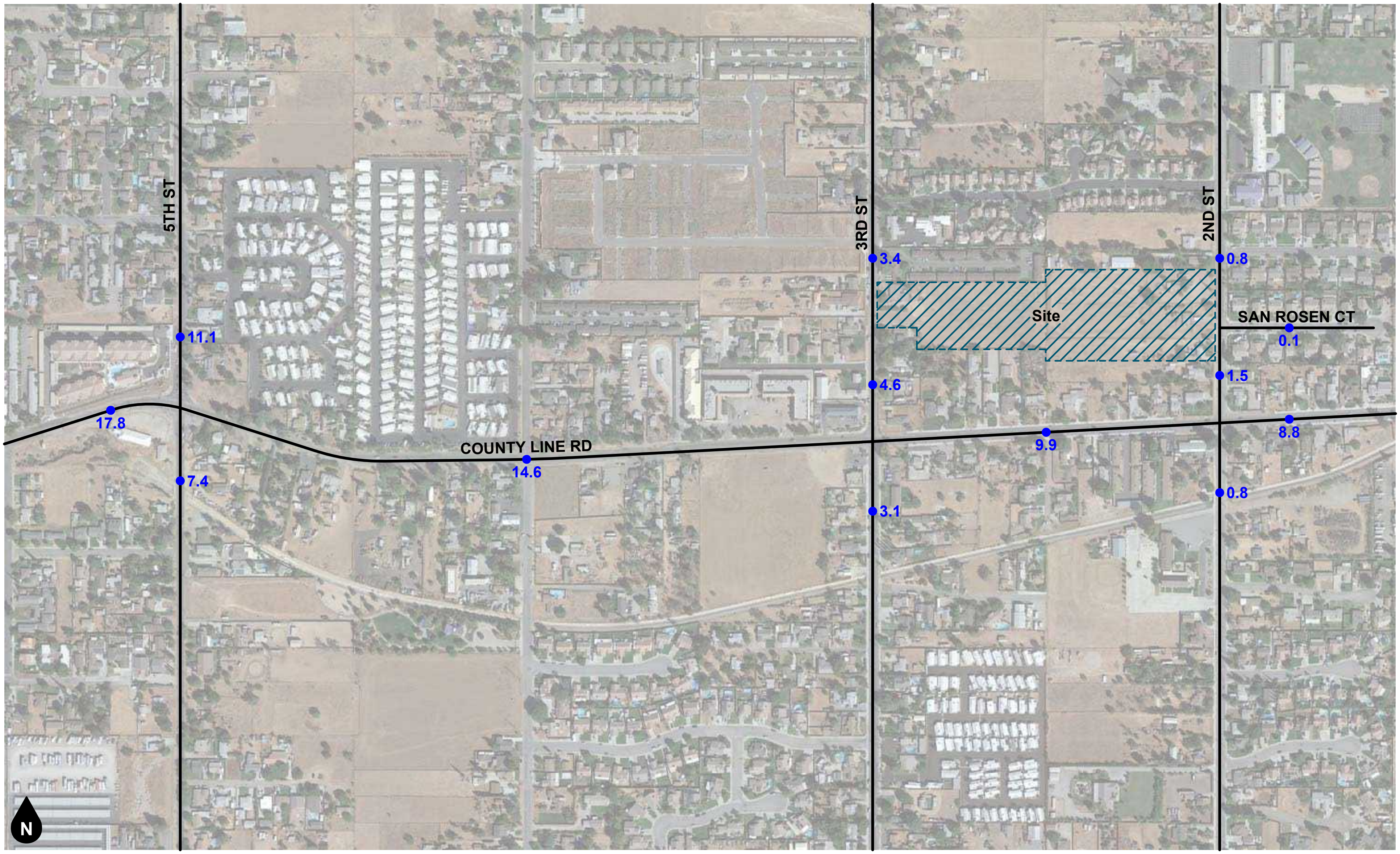
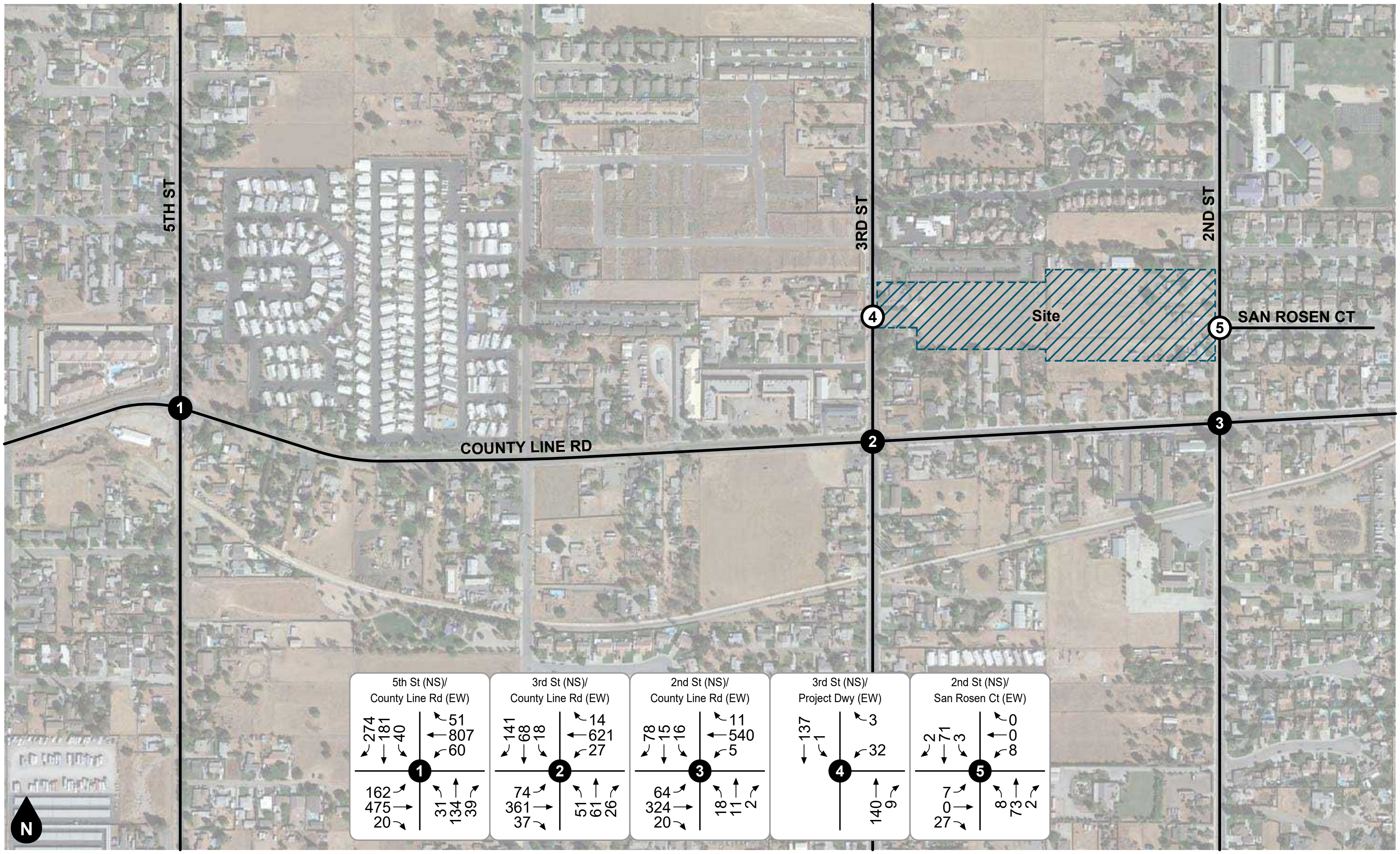


Figure 27
Opening Year (2023) Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
●## Vehicles Per Day (1,000's)

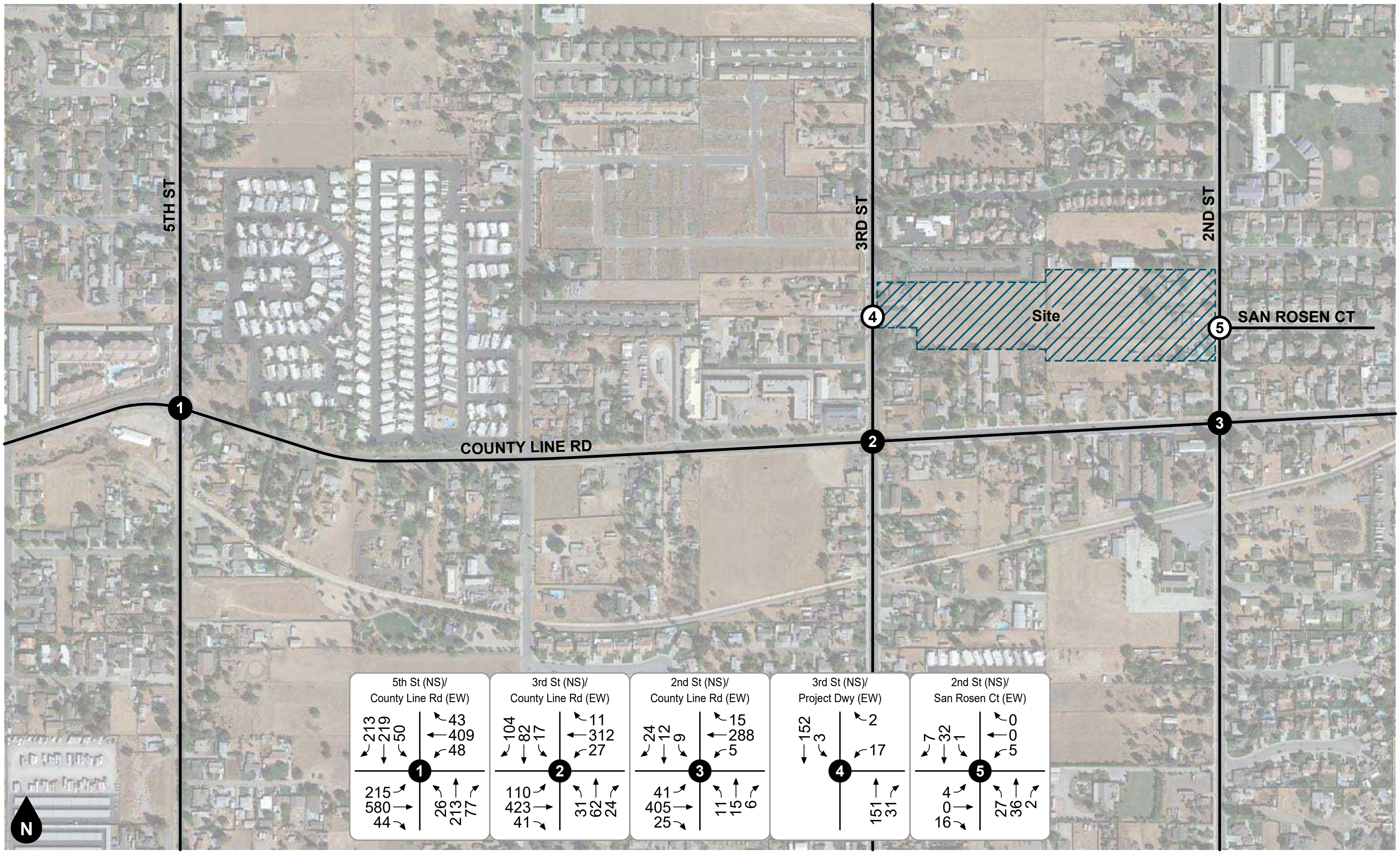
Figure 28
Opening Year (2023) With Project Average Daily Traffic Volumes



Legend

- Study Intersection
- Project Driveway

Figure 29
Opening Year (2023) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

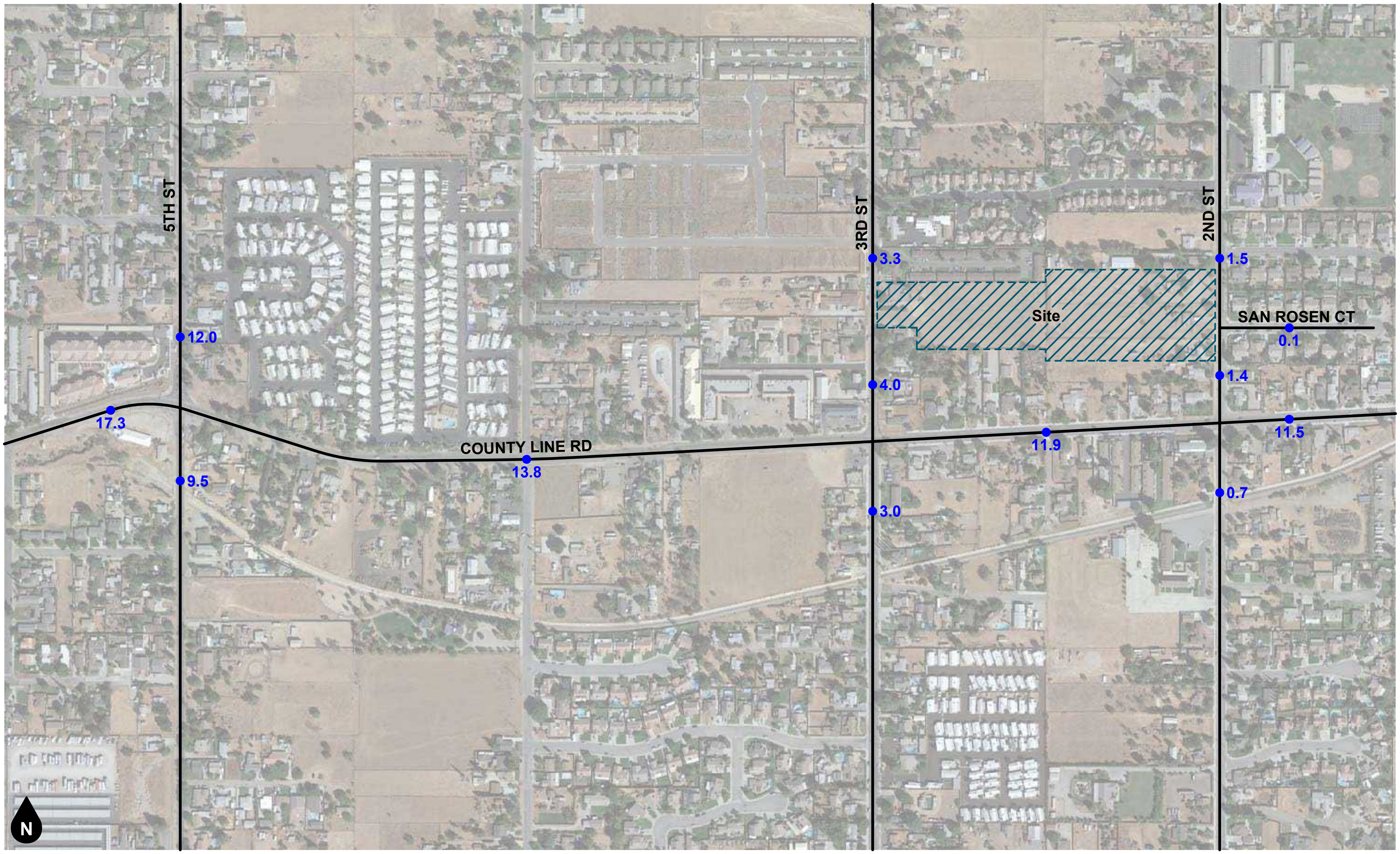
\# Study Intersection

(#) Project Driveway

Figure 30

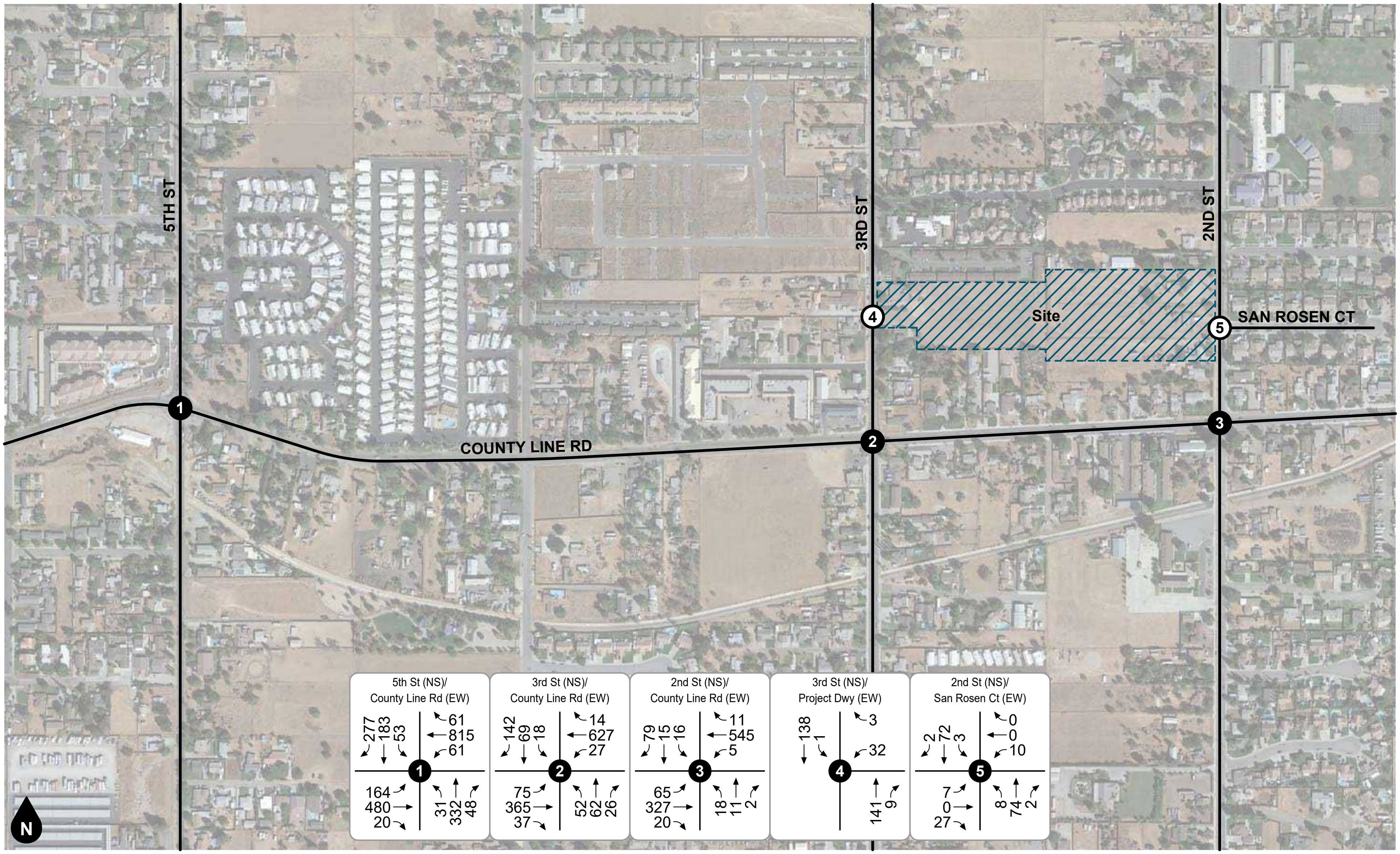
Opening Year (2023) With Project

PM Peak Hour Intersection Turning Movement Volumes



Legend
●## Vehicles Per Day (1,000's)

Figure 31
Year 2040 Without Project Average Daily Traffic Volumes

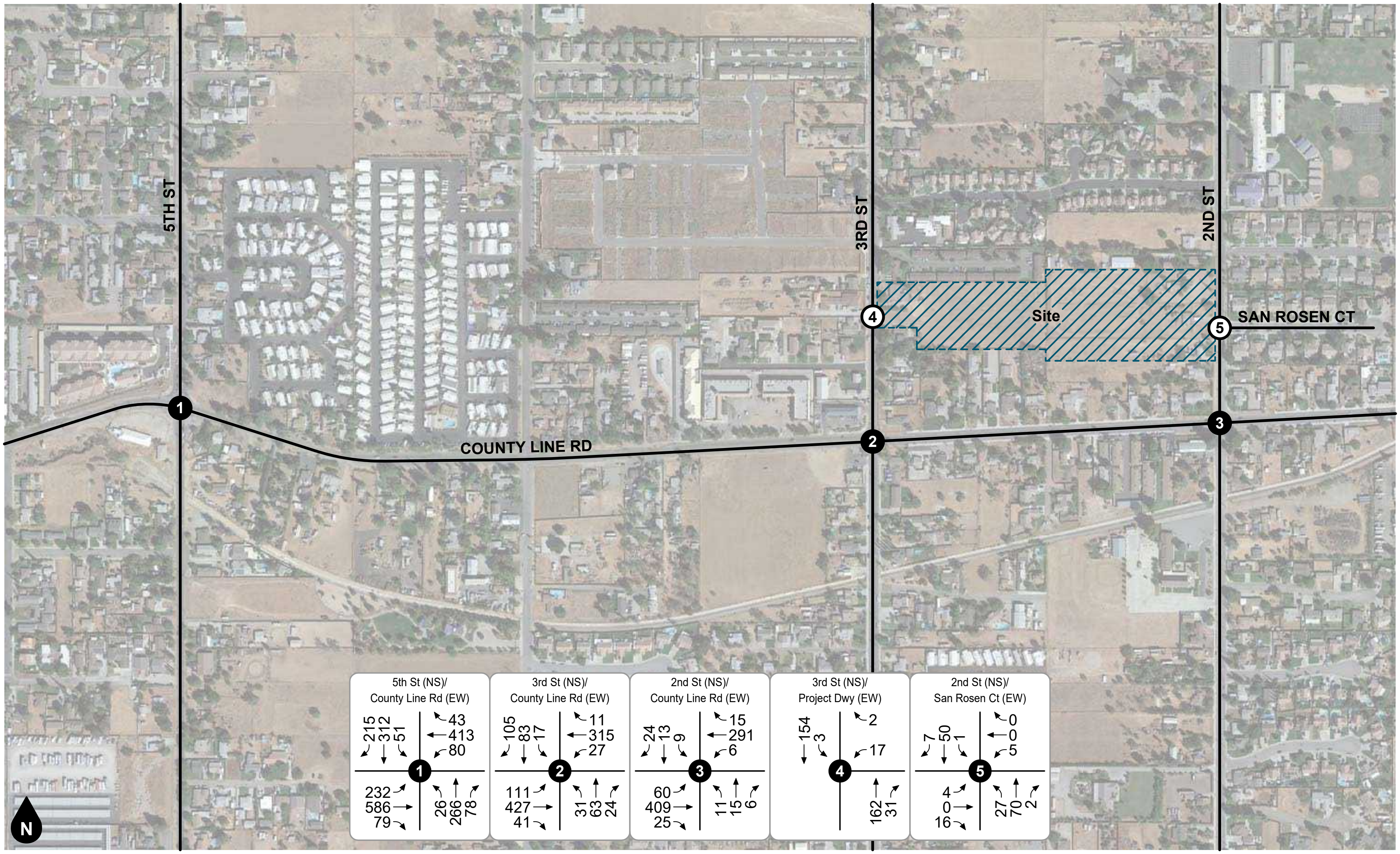


Legend

\# Study Intersection

(#) Project Driveway

Figure 32
Year 2040 Without Project
AM Peak Hour Intersection Turning Movement Volumes

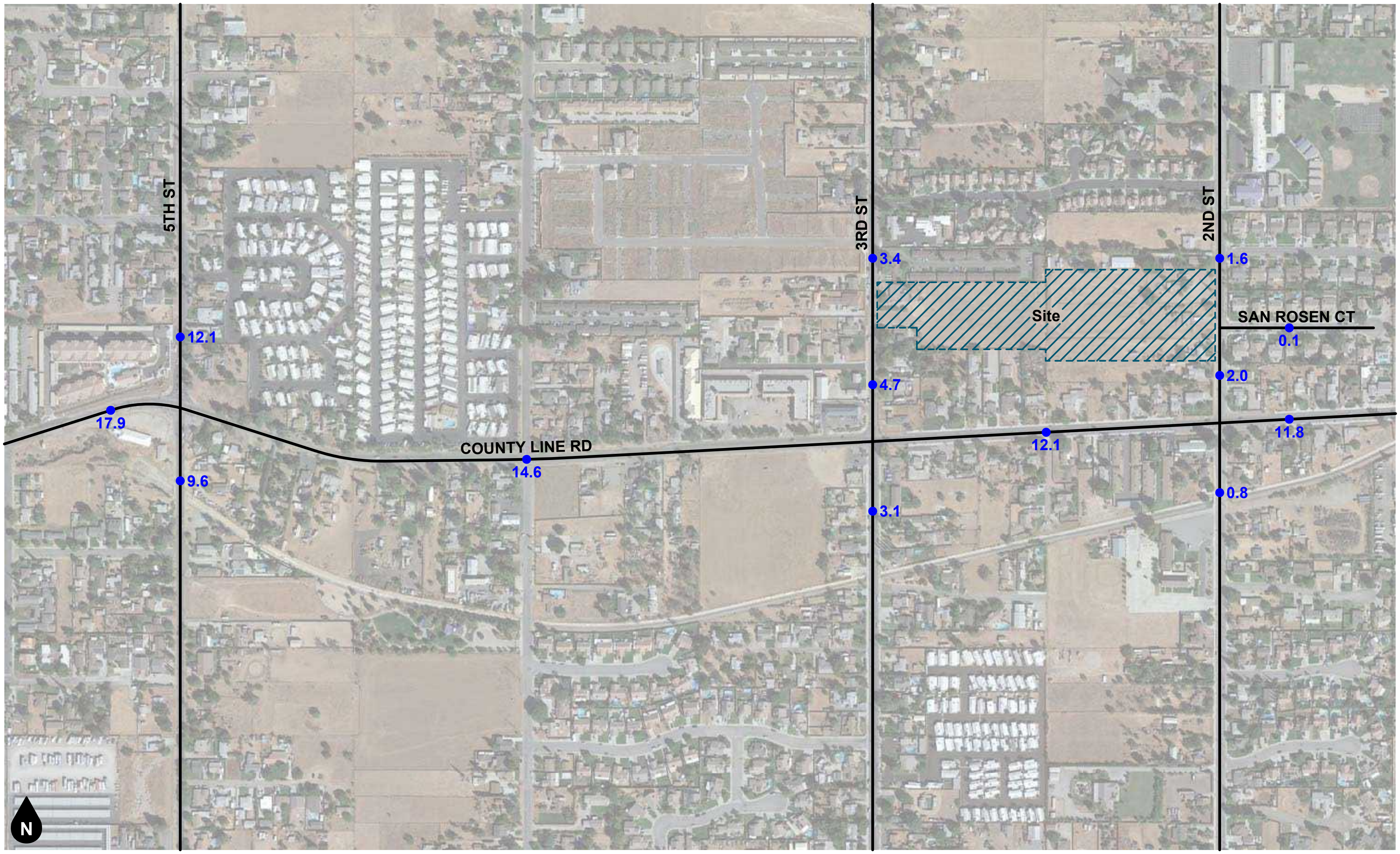


Legend

Study Intersection

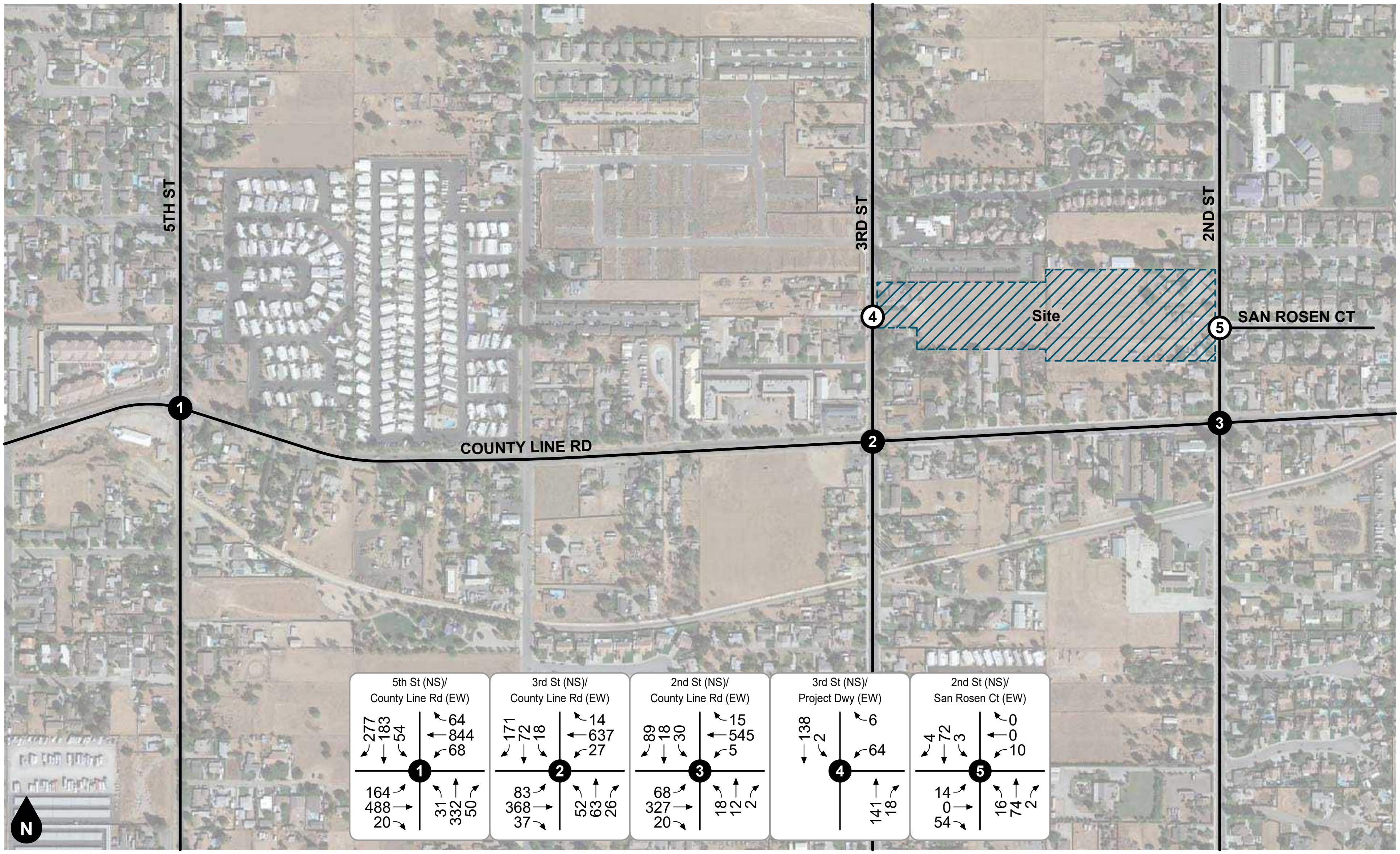
(#) Project Driveway

Figure 33
Year 2040 Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
● ## Vehicles Per Day (1,000's)

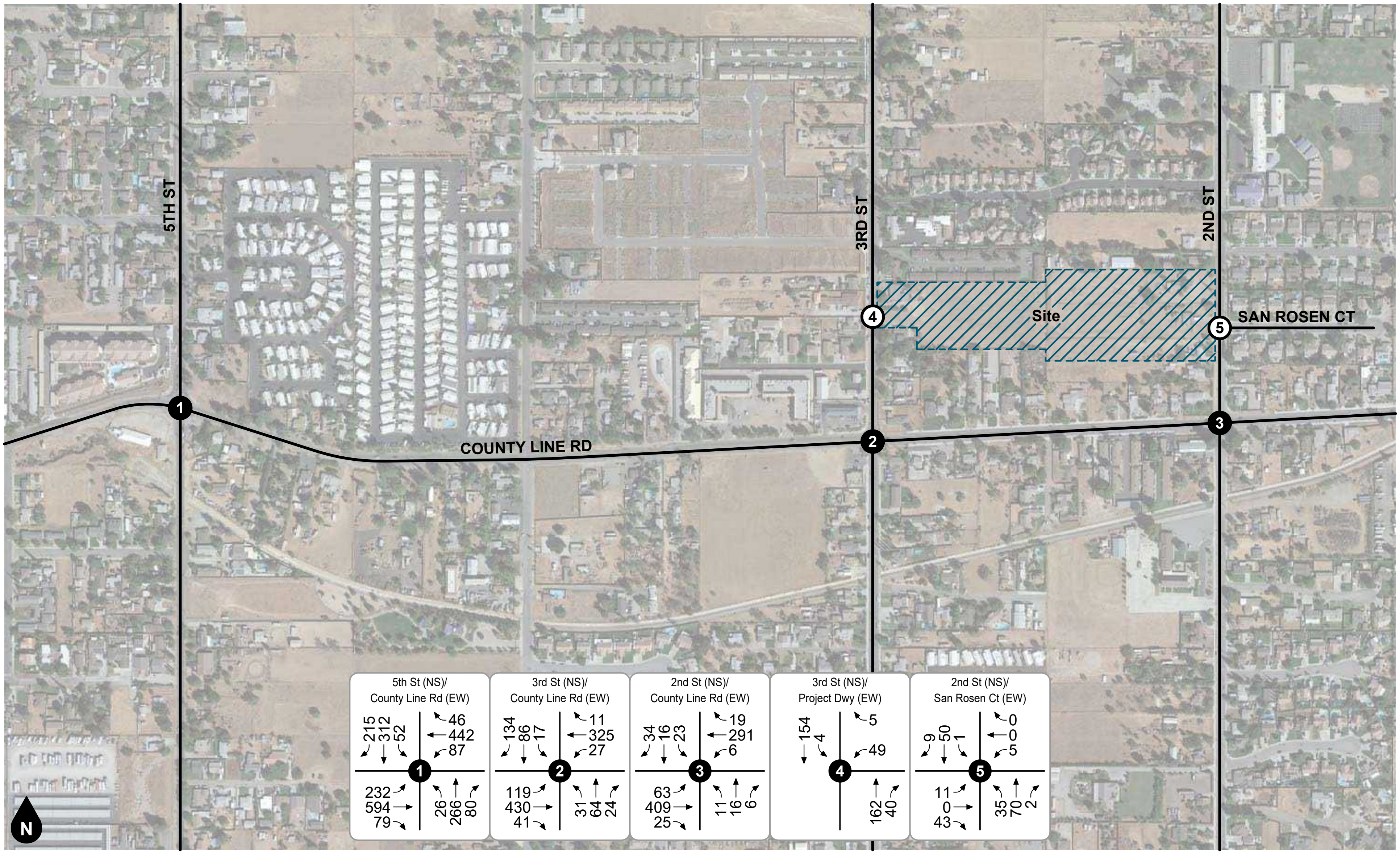
Figure 34
Year 2040 With Project Average Daily Traffic Volumes



Legend

- Study Intersection
- Project Driveway

Figure 35
Year 2040 With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

(#) Study Intersection

(#) Project Driveway

Figure 36
Year 2040 With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE LEVELS OF SERVICE ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix G.

Project design features, such as improvements necessary to provide project site access, are assumed to be constructed by the proposed project and are described in further detail in the Site Access & Circulation section presented later in this report.

EXISTING PLUS PROJECT

The study intersection Levels of Service for Existing Plus Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing Plus Project conditions, except for the following study intersection that is forecast to operate at Level of Service E during the AM peak hour:

3. 3rd Street at County Line Road

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours with implementation of the following improvement:

3rd Street (NS) at County Line Road (EW) - #2

- Install a roundabout

Installation of roundabouts at the intersections of County Line Road/3rd Street and County Line Road/2nd Street are currently funded capital improvements and scheduled for construction starting in the fall of 2021. See Appendix H for City of Yucaipa and City of Calimesa joint project Capital Improvement Plans for County Line Road from west of 4th Street to east of Bryant Street.

OPENING YEAR (2023) WITHOUT PROJECT

As previously noted, installation of the 3rd Street and 2nd Street roundabouts at County Line Road are funded capital improvements scheduled for construction starting in the fall of 2021 and are therefore presumed to be installed by the project opening year in 2023.

The study intersection Levels of Service for Opening Year (2023) Without Project conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2023) Without Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

OPENING YEAR (2023) WITH PROJECT

The study intersection Levels of Service for Opening Year (2023) With Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2023) With Project conditions with implementation of the previously identified City capital improvements. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for Opening Year (2023) With Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

YEAR 2040 WITHOUT PROJECT

The study intersection Levels of Service for Year 2040 Without Project conditions are shown in Table 7. As shown in Table 7, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Year 2040 Without Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

YEAR 2040 WITH PROJECT

The study intersection Levels of Service for Year 2040 With Project conditions are shown in Table 8. As shown in Table 8, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Year 2040 With Project conditions with implementation of the previously identified improvements. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for Year 2040 With Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

Table 4
Existing Plus Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	Existing AM Peak Hour Delay[2]	Existing AM Peak Hour LOS[3]	Existing PM Peak Hour Delay[2]	Existing PM Peak Hour LOS[3]	Existing Plus Project AM Peak Hour Delay[2]	Existing Plus Project AM Peak Hour LOS[3]	Existing Plus Project PM Peak Hour Delay[2]	Existing Plus Project PM Peak Hour LOS[3]	AM Peak Hour Delay Change	AM Peak Hour Project Deficiency?[4]	PM Peak Hour Delay Change	PM Peak Hour Project Deficiency?
1.	5th Street at County Line Road	TS	27.1	C	23.3	C	27.6	C	23.4	C	+0.5	NO	+0.1	NO
2.	3rd Street at County Line Road	AWS	29.7	D	17.0	C	35.7	E	21.0	C	+6.0	YES	+4.0	NO
3.	2nd Street at County Line Road	AWS	17.5	C	12.6	B	18.5	C	13.1	B	+1.0	NO	+0.5	NO
4.	3rd Street at Project West Driveway	CSS	-	-	-	-	10.2	B	10.3	B	+10.2	NO	+10.3	NO
5.	2nd Street at San Rosen Ct/Project Driveway	CSS	10.5	B	9.5	A	11.0	B	10.0	A	+0.5	NO	+0.5	NO

Notes:

(1) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

(4) The operational threshold is exceeded when the project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at a Level of Service E or F.

Table 5
Opening Year (2023) Without Project Intersection Levels of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. 5th Street at County Line Road	TS	30.1	C	24.5	C
2. 3rd Street at County Line Road	RND[4]	8.8	A	7.4	A
3. 2nd Street at County Line Road	RND[4]	6.9	A	5.7	A
5. 2nd Street at San Rosen Ct/Project Driveway	CSS	10.6	B	9.5	A

Notes:

(1) TS = Traffic Signal; RND = Roundabout; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

(4) City of Yucaipa and Calimesa joint Capital Improvements project to improve County Line Road from 4th Street to California Street and install round-abouts at 3rd Street and 2nd Street.

Table 6
Opening Year (2023) Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	Opening Year (2023) Without Project				Opening Year (2023) With Project				AM Peak Hour		PM Peak Hour	
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay Change	Project Deficiency?[4]	Delay Change	Project Deficiency?
1.	5th Street at County Line Road	TS	30.1	C	24.5	C	31.7	C	24.8	C	+1.6	NO	+0.3	NO
2.	3rd Street at County Line Road	RND	8.8	A	7.4	A	9.2	A	7.9	A	+0.4	NO	+0.5	NO
3.	2nd Street at County Line Road	RND	6.9	A	5.7	A	7.0	A	5.9	A	+0.1	NO	+0.2	NO
4.	3rd Street at Project West Driveway	CSS	-	-	-	-	10.5	B	10.7	B	+10.5	NO	+10.7	NO
5.	2nd Street at San Rosen Ct/Project Driveway	CSS	10.6	B	9.5	A	11.0	B	10.0	A	+0.4	NO	+0.5	NO

Notes:

(1) TS = Traffic Signal; RND = Roundabout; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn

(3) LOS = Level of Service

(4) The operational threshold is exceeded when the project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at a Level of Service E or F.

Table 7
Year (2040) Without Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	5th Street at County Line Road	TS	31.7	C	24.5	C
2.	3rd Street at County Line Road	RND[4]	10.0	A	7.7	A
3.	2nd Street at County Line Road	RND[4]	7.0	A	5.9	A
5.	2nd Street at San Rosen Ct/Project Driveway	CSS	10.3	B	10.3	B

Notes:

(1) TS = Traffic Signal; RND = Roundabout; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

(4) City of Yucaipa and Calimesa joint Capital Improvements project to improve County Line Road from 4th Street to California Street and install round-abouts at 3rd Street and 2nd Street.

Table 8
Year 2040 Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	Year 2040 Without Project AM Peak Hour Delay[2]	LOS[3]	Year 2040 Without Project PM Peak Hour Delay[2]	LOS[3]	Year 2040 With Project AM Peak Hour Delay[2]	LOS[3]	Year 2040 With Project PM Peak Hour Delay[2]	LOS[3]	AM Peak Hour Delay Change	AM Peak Hour Project Deficiency?[4]	PM Peak Hour Delay Change	PM Peak Hour Project Deficiency?
1.	5th Street at County Line Road	TS	31.7	C	24.5	C	32.2	C	24.6	C	+0.5	NO	+0.1	NO
2.	3rd Street at County Line Road	RND	10.0	A	7.7	A	10.5	B	8.2	A	+0.5	NO	+0.5	NO
3.	2nd Street at County Line Road	RND	7.0	A	5.9	A	7.2	A	6.1	A	+0.2	NO	+0.2	NO
4.	3rd Street at Project West Driveway	CSS	-	-	-	-	10.9	B	11.3	B	+10.9	NO	+11.3	NO
5.	2nd Street at San Rosen Ct/Project Driveway	CSS	10.3	B	10.3	B	10.6	B	11.0	B	+0.3	NO	+0.7	NO

Notes:

(1) TS = Traffic Signal; RND = Roundabout; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn

(3) LOS = Level of Service

(4) The operational threshold is exceeded when the project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at a Level of Service E or F.

7. SITE ACCESS ANALYSIS

This section describes the project site access and on-site circulation. Gated vehicular access is proposed at 3rd Street and 2nd Street.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project to provide project site access:

3rd Street (NS) at Project West Driveway (EW) - #4

- Install westbound stop control.
- Construct the westbound approach to consist of one shared left/right turn lane.

2nd Street (NS) at Project East Driveway (EW) - #5

- Install eastbound stop control.
- Construct the eastbound approach to consist of one shared left/right turn lane.

This analysis also assumes the project shall comply with the following conditions as part of the City of Yucaipa standard development review process to ensure adequate geometric design and emergency access:

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Yucaipa.

- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of Yucaipa.

- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable City of Yucaipa/California Department of Transportation sight distance standards.

- A construction work site traffic control plan shall comply with State standards set forth in the California *Manual of Uniform Traffic Control Devices* and shall be submitted to the County for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.

8. CONCLUSIONS

This section summarizes the findings and recommended improvements or mitigation measures (if any) identified in previous sections of this study.

PROJECT TRIP GENERATION

The proposed project is forecast to generate a total of approximately 1,426 daily trips, including 89 during the AM peak hour and 108 trips during the PM peak hour.

LEVEL OF SERVICE ANALYSIS

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing Plus Project conditions, except for the following study intersection that is forecast to operate at Level of Service E during the AM peak hour:

3. 3rd Street at County Line Road

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours with implementation of the following improvement:

<u>3rd Street (NS) at County Line Road (EW) - #2</u>

- Install a roundabout

Installation of roundabouts at the intersections of County Line Road/3rd Street and County Line Road/2nd Street are currently funded capital improvements and scheduled for construction starting in the fall of 2021. These improvements are assumed to be completed for Opening Year (2023) and future conditions.

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2023) With Project and Year 2040 With Project conditions with implementation of the previously identified improvements. Therefore, the proposed project is forecast to result in <u>no</u> project-related Level of Service deficiencies at the study intersections for Opening Year (2023) With Project or Year 2040 With Project conditions with implementation of the roundabout capital improvements at County Line Road/3rd Street and County Line Road/2nd Street.

SITE ACCESS IMPROVEMENTS

The proposed project shall construct the following improvements to provide project site access:

<u>3rd Street (NS) at Project West Driveway (EW) - #4</u>

- Install westbound stop control.
- Construct the westbound approach to consist of one shared left/right turn lane.

<u>2nd Street (NS) at Project East Driveway (EW) - #5</u>

- Install eastbound stop control.
- Construct the eastbound approach to consist of one shared left/right turn lane.

APPENDICES

APPENDIX A

GLOSSARY

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
GFA	Gross Floor Area
LOS	Level of Service
PCE	Passenger Car Equivalent
SP	Service Population
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

ACTUATED SIGNAL CONTROL: A type of traffic signal control in which display of each phase depends on whether the corresponding phase detector has registered a service call or the phase is on recall.

ACTUATION: Detection of a roadway user that is forwarded to the signal controller.

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CALL: An indication within a signal controller that a particular phase is waiting for service, either through actuation from a roadway user or phase recall.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass through a roadway facility during a specified period.

CHANNELIZATION: The separation of conflicting traffic movements by use of pavement markings, raised curbs, or other suitable means to facilitate free flow movement.

CLEARANCE INTERVAL: Equal to the yellow plus all-red time, if any, when a traffic signal changes between phases (i.e., the amount of time between the end of a green light from one movement to the beginning of a green light for the next).

COORDINATED SIGNAL CONTROL: A type of traffic signal control in which non-coordinated phases associated with minor movements are constrained such that the coordinated phases are served at a specific time during the signal cycle, thus maintaining the efficient progression of traffic flow along the major roadway.

CONTROL DELAY: The portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign). It includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay.

CORDON: An imaginary boundary line around or across a study area across which vehicles, persons, or other information can be collected for survey and analytical purposes.

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic traveling at a given speed to radically alter their speed or trajectory.

CYCLE: A complete sequence of signal indications for all phases.

CYCLE LENGTH: The total time for a traffic signal to complete one full cycle.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The total additional travel time experienced by a roadway user (driver, passenger, bicyclist, or pedestrian) beyond that required to travel at a desired speed.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device used to count or determine the presence of a roadway user.

DESIGN SPEED: A speed used for purposes of designing horizontal and vertical alignments of a highway.

DIRECTIONAL SPLIT: The percent of two-way traffic traveling in a specified direction.

DIVERSION: The rerouting of traffic from a normal path of travel between two points, such as to avoid congestion or perform a secondary trip.

FREE FLOW: Traffic flow that is unaffected by a traffic control and/or or upstream or downstream conditions.

GAP: Time or distance between two vehicles measured from rear bumper of the front vehicle to front bumper of the second vehicle.

GAP ACCEPTANCE: The method by which a driver accepts an available gap in traffic to enter or cross the road.

HEADWAY: Time or distance between two successive vehicles measured from same point on both vehicles (i.e., front bumper to front bumper).

LEVEL OF SERVICE: A grading scale of quantitative performance measures representing the quality of service of a transportation facility or service from an average traveler's perspective.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MULTI-MODAL: More than one mode, such as automobile, transit, bicycle, and pedestrian.

OFFSET: The time interval between the beginning of a traffic signal cycle at one intersection and the beginning of signal cycle an adjacent intersection.

PLATOON: A set of vehicles traveling at similar speed and moving as a general group with clear separation between other vehicles ahead and behind.

PASSENGER CAR EQUIVALENT: A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEDESTRIAN CLEARANCE INTERVAL: Also known as the "Flashing Don't Walk" interval, it signals the end of pedestrian entry into the crosswalk following the "Walk" indication and provides time for pedestrians who have already entered the crosswalk to finishing crossing.

PEAK HOUR: The hour within a day in which the maximum volume occurs.

PEAK HOUR FACTOR: The peak hour volume divided by the four times the peak 15-minute flow rate. This

PHASE: In traffic signals, the green, yellow, and red clearance intervals assigned to a specified traffic movement.

PRETIMED SIGNAL: A traffic signal operation in which the cycle length, phasing sequence, and phasing times are predetermined and fixed, regardless of actual demand for any given traffic movement. Also known as a fixed time signal.

PROGRESSION: The coordinated movement of vehicles through signalized intersections along a corridor.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

RECALL: A signal phasing operation in which a specified phase places a call to the signal controller each time a conflicting phase is served, thus ensuring the specified phase will be serviced again.

SEMI-ACTUATED CONTROL: A type of traffic signal control in which only the minor movements are provided detection.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle traveling at a given speed to bring the vehicle to a stop after an object on the road becomes visible, including reaction and response time.

TRIP OR TRIP END: The one-directional movement of a person or vehicle. Every trip has an origin and a destination at its respective ends (i.e., trip ends). In terms of site trip generation, the same vehicle entering and exiting a site generates two trips: one inbound trip and one outbound trip.

TRIP GENERATION RATE: The rate at which a land use generates trips per the specified land use variable, such per dwelling unit or per thousand square feet.

TRUCK: A heavy motor vehicle generally used for transporting goods.

VEHICLE MILES TRAVELED: A measure of the amount and distance of automobile travel essentially calculated as the sum of each trip times the trip length.

APPENDIX B

SCOPING AGREEMENT

MEMORANDUM OF UNDERSTANDING

TO: Fermin Preciado, City Engineer | CITY OF YUCAIPA

FROM: Perrie Ilercil, PE (AZ) | GANDDINI GROUP, INC.

DATE: July 9, 2021

SUBJECT: Fallbrook Meadows Residential Project Traffic Study Assumptions
19403

The purpose of this scoping document is to outline the proposed focused traffic analysis parameters and assumptions for the Fallbrook Meadows Residential Project for review/concurrence by City of Yucaipa staff.

PROJECT DESCRIPTION

Figure 1 shows the regional vicinity of the project, and Figure 2 shows the project location map. The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street. The site plan is illustrated on Figure 3.

PROJECT TRIP GENERATION & DISTRIBUTION

Table 1 shows proposed project trip generation is based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Handbook* (3rd Edition, 2017). Trip generation rates for ITE Land Use Code 220 (multi-family residential) were used for the proposed project, and rates from ITE Land Use Code 210 (single-family residential) were used for the existing development displaced by the project. As shown in Table 1, the proposed is forecast to generate approximately 1,426 daily trips, including 89 during the AM peak hour, and 108 trips during the PM peak hour.

<u>Project Trip Distributions</u>

Figures 4 and 5 illustrate the forecast directional distribution patterns of the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

STUDY AREA

As conforming with the City of Yucaipa procedures, the study area shall consist of the following study intersections:

Study Intersections	Jurisdiction
1. 5th Street (NS) at W County Line Road (EW)	Yucaipa / Calimesa
2. 3rd Street (NS) at W County Line Road (EW)	Yucaipa / Calimesa
3. 2nd Street (NS) at W County Line Road (EW)	Yucaipa / Calimesa
4. 3rd Street (NS) at Project West Driveway (EW)	Yucaipa
5. 2nd Street (NS) at Project East Driveway (EW)	Yucaipa

NS= north-south, EW = east-west

TRAFFIC COUNTS

New intersection turning movement counts will be collected at the study intersections during the typical weekday AM and PM peak hour (7:00 AM – 9:00 AM and 4:00 - 6:00 PM). A historical 2019 count at the intersection of W County Line Road and 5th Street will be increased by one percent per year to estimate non-pandemic year 2021 volumes and compared to the new counts. If necessary, new counts shall be adjusted as appropriate based on a factor derived from the difference between the adjusted historical count and new count volumes.

INTERSECTION ANALYSIS METHODOLOGY

In accordance with the City of Yucaipa *Transportation Impact Analysis Guidelines, August 2020; [*TIA Guidelines], intersections shall by analyzed using the intersection delay methodology based on procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). Default values not specifically identified in the City or County guidelines will be based *Highway Capacity Manual* recommended values. Intersection analysis shall be performed using the Vistro software (Version 6.00-00).

PERFORMANCE STANDARDS

The City of Yucaipa General Plan Policy T-2.1, seeks to maintain the following target Levels of Service: Level of Service C along standard intersections and roadway segments with Level of Service D acceptable for roundabout intersections or roadway segments.

Additionally, in accordance with the County of San Bernardino *Transportation Impact Study Guidelines, July 2019;* an operational improvement would be required if the study determines the following

- Any signalized study intersection that is operating at an acceptable Level of Service (C or better) without project traffic where the project causes the intersection to degrade to Level of Service (D, E or F) shall identify improvements to enhance operations to Level of Service (C or better).

- Any signalized study intersection that is operating at unacceptable Level of Service (D, E or F) without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

- Any unsignalized study intersection that is operating at an acceptable Level of Service (C or better) without project traffic where the project causes the intersection to degrade to Level of Service (D, E or F).
  AND
  The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

OR

- Any unsignalized study intersection that is operating at unacceptable Level of Service (D, E or F) without project traffic where the project increases delay by 5.0 or more seconds.
  AND
  The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

ANALYSIS SCENARIOS

The traffic study shall evaluate the following analysis scenarios for weekday AM and PM peak hours:

- Existing
- Existing Plus Project
- Opening Year (2023) Without Project (Ambient Growth + Other Development)
- Opening Year (2023) With Project (Ambient Growth + Other Development + Project)
- Year (2045) Without Project
- Year (2045) With Project

OPENING YEAR (2023) FORECASTING METHODOLOGY

Regional Ambient Growth

To account for ambient growth, existing roadway volumes shall be increased by a growth rate of one percent (1.5%) per year over a two-year period for Opening Year (2023) conditions. This equates to a growth factor of 1.03.

Other Development

In addition, a list of pending and approved other development projects shall be requested from the City of Yucaipa and City of Calimesa. Trip forecasts for other development projects within the project study area shall be determined from the other development traffic study or calculated based on the Institute of Transportation Engineers (ITE), *Trip Generation Manual* and will be manually assigned to the study intersections.

Model General Plan Buildout Growth

General Buildout (Year 2040) forecasts will be determined using a growth increment approach with the San Bernardino Transportation Analysis Model (SBTAM) base year and horizon year travel demand model plots and forecasting procedures outlined in the National Cooperative Highway Research Program Report 255.

VEHICLE MILES TRAVELED (VMT) ASSESSMENT

The traffic study shall include a VMT screening analysis for CEQA compliance based on State-recommended screening criteria or those adopted by City of Yucaipa at the time of preparation. The study shall include a narrative of narrative of VMT requirements under CEQA and documentation of the project screening results based on the applicable criteria. Based on preliminary review, the proposed project does not satisfy any of the County-established VMT screening criteria. If necessary, to assess the significance of the project VMT impact relative to the applicable thresholds of significance, the project VMT will be estimated using the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool. VMT for project traffic analysis zone (TAZ) shall be used as a proxy for the proposed project since the proposed project is not regionally significant. Therefore, new model runs are not anticipated to be required or included in this scope of work.

Bernardino County Transportation Authority (SBCTA) VMT Screening Tool. VMT for project traffic analysis zone (TAZ) shall be used as a proxy for the proposed project since the proposed project is not regionally significant. Therefore, new model runs are not anticipated to be required or included in this scope of work.

CONCLUSION

We appreciate the opportunity to provide this memorandum of understanding for your review. Should you have any questions or comments regarding the proposed scope, please contact me.

Table 1
Project Trip Generation

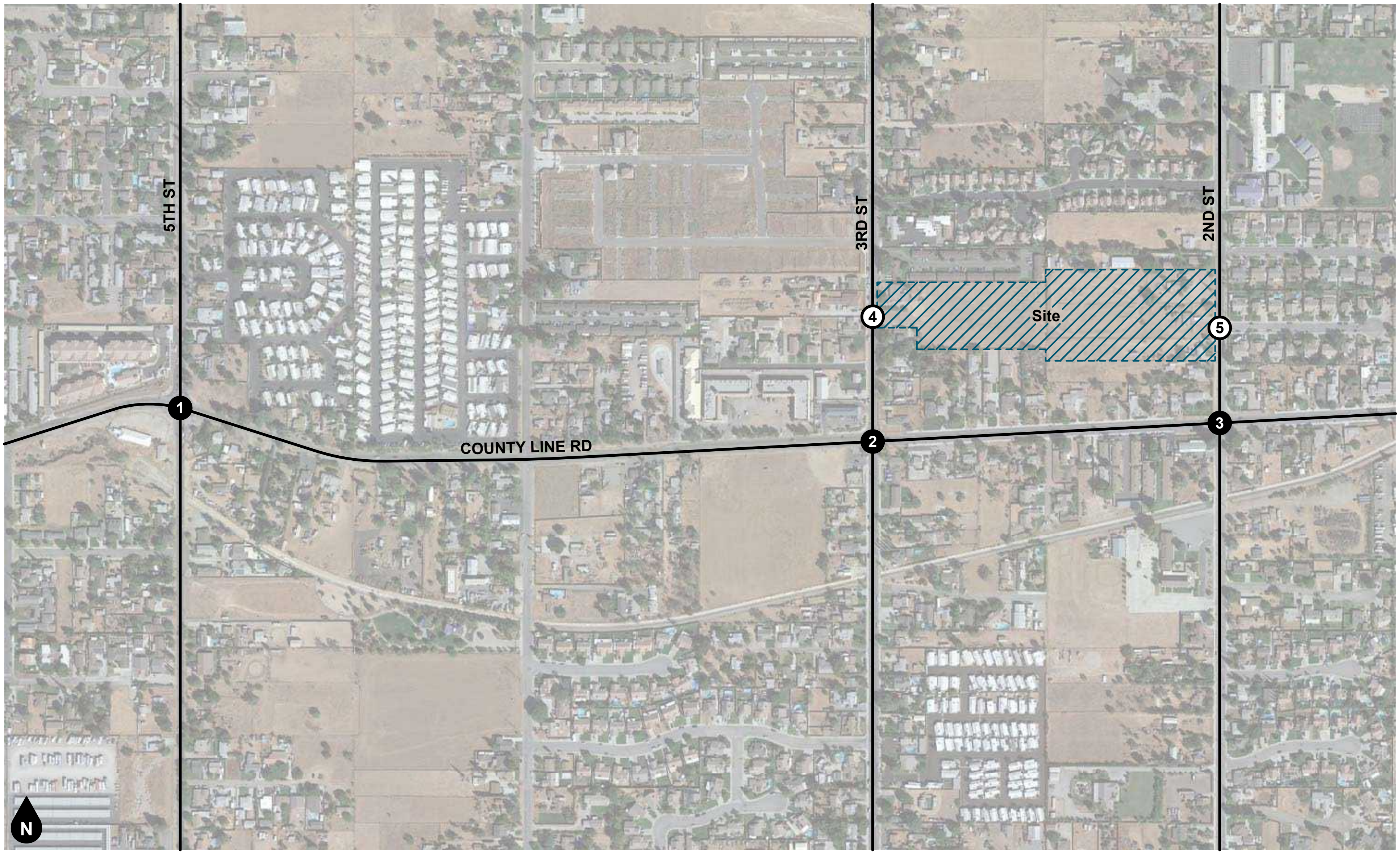
Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Daily
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.74	63%	37%	0.99	9.44
Multifamily Housing (Low-Rise)	ITE 220	DU	23%	77%	0.46	63%	37%	0.56	7.32

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Existing Project Site Land Use									
Single-Family Detached Housing	4	DU	1	2	3	2	2	4	38
Proposed Project									
Multifamily Housing (Low-Rise)	200	DU	21	71	92	71	41	112	1,464
NET PROJECT TRIPS GENERATED			+ 20	+ 69	+ 89	+ 69	+ 39	+ 108	+ 1,426

Notes:

(1) Source: ITE = Institute of Transportation Engineers, *Trip Generation Manual (10th Edition, 2017)* ; ### = Land Use Code(s).

(2) DU = Dwelling Units.



Legend

- # Study Intersection
- (#) Project Driveway

Figure 1
Project Location Map

gandlin

Fallbrook Meadows Residential Project
Traffic Impact Analysis
19403

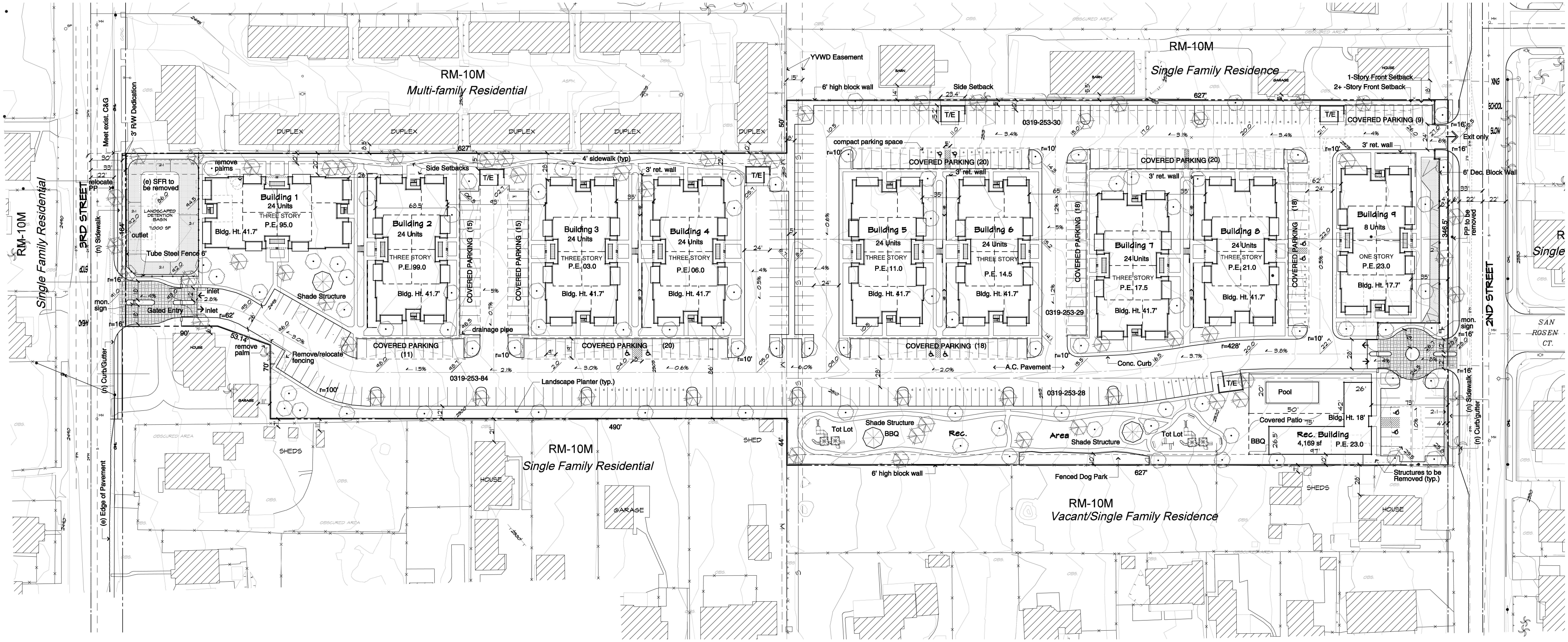
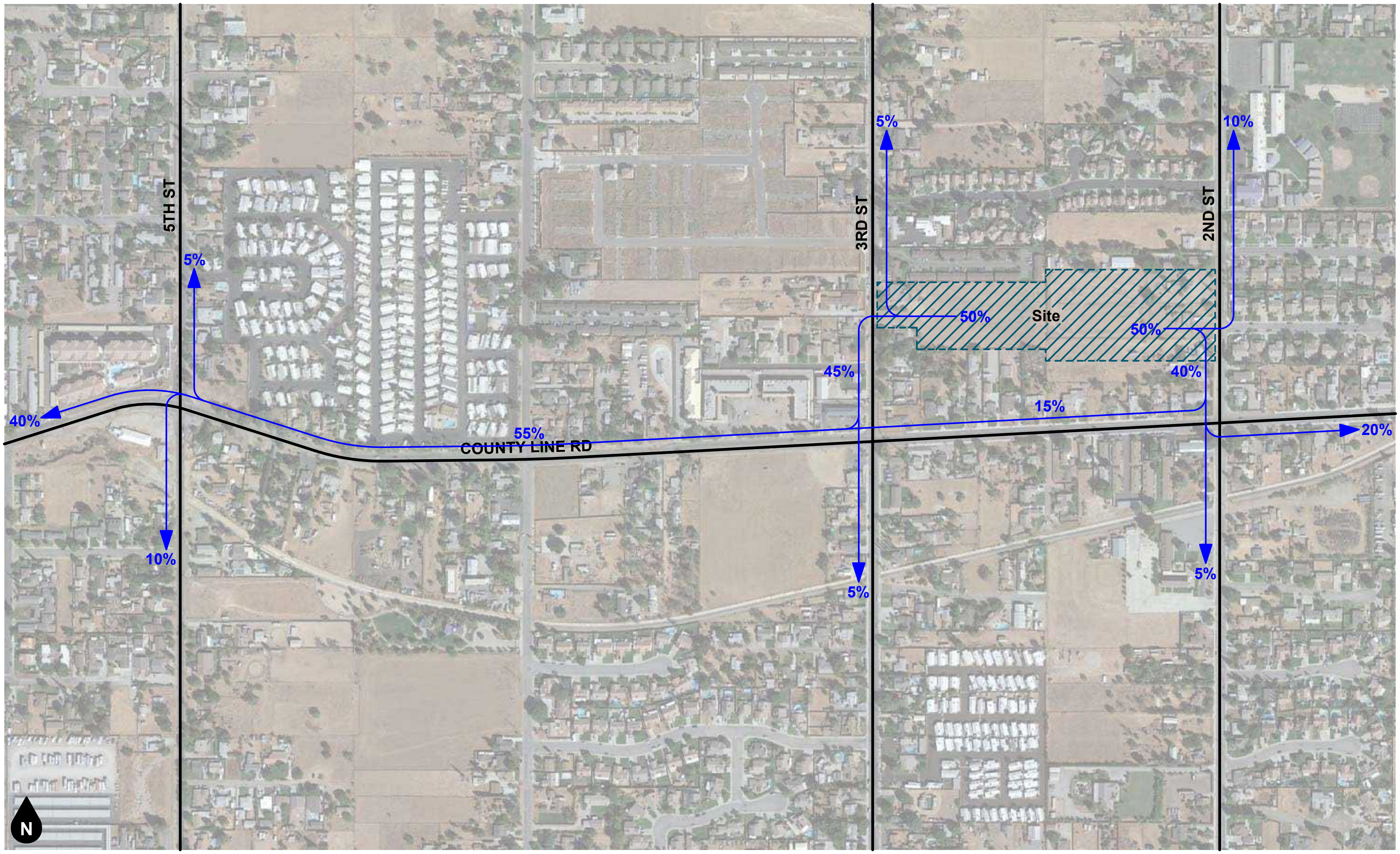


Figure 2
Site Plan

ganddini

Fallbrook Meadows Residential Project
Traffic Impact Analysis
19403



Legend
10% Percent To/From Project

Figure 3
Project Trip Distribution

ganddini

Fallbrook Meadows Residential Project
Traffic Impact Analysis
19403

Perrie Ilercil

From: Fermin Preciado <fpreciado@Yucaipa.org>
Sent: Thursday, July 22, 2021 11:57 AM
To: Perrie Ilercil; Benjamin Matlock
Cc: Landon Kern; Katrina Kunkel
Subject: RE: Fallbrook Meadows Residential Project

Hi Perrie,

Thank you for taking the time to speak with me today. As we discussed, the list of intersections, counts and annual growth factor of 1.5% are acceptable as well as the scope provided in your email dated 7/8/21.

If you have further questions, please email/call.

Thank you

Fermin Preciado, P.E.
Director of Development Services/City Engineer

CITY OF Yucaipa

34272 Yucaipa Boulevard
Yucaipa, CA 92399
(909) 797-2489, Ext. 240

From: Perrie Ilercil <perrie@ganddini.com>
Sent: Thursday, July 8, 2021 7:43 PM
To: Benjamin Matlock <bmatlock@yucaipa.org>; Fermin Preciado <fpreciado@Yucaipa.org>
Subject: RE: Fallbrook Meadows Residential Project

Hi Benjamin & Fermin,

See the attached Traffic Scoping Agreement for Fallbrook Meadows Residential Project located in the City of Yucaipa between 2nd and 3rd Streets north of County Line Road.

It is requested to conduct new counts at this time which will be reviewed for a "adjustment factor" based on historical pre-covid count of the 5th Street and County Line Road from September 2019 during the school year. By applying an ambient growth factor to the historical count, a schools in-session pre-covid with growth value for 2021 can be derived to establish the "standardized existing 2021". Then the new count will be compared to the "standardized *value" and will be factored accordingly. At your earliest convenience, provide your approval of intersections and summer counts, so that traffic counts can be ordered.*

Let me know if you have questions or comments.

Sincerely,

Perrie Ilercil, **PE (AZ)**
Senior Engineer

GANDDINI GROUP, INC.
550 Parkcenter Drive, Suite 202
Santa Ana, CA 92705
c. **949 257-3126**
e: ***perrie@ganddini.com***

From: Benjamin Matlock <bmatlock@yucaipa.org>
Sent: Thursday, July 08, 2021 4:51 PM
To: Fermin Preciado <fpreciado@Yucaipa.org>; Perrie Ilercil <perrie@ganddini.com>
Subject: RE: Fallbrook Meadows Residential Project

Hi Perrie,

Attached is the City's TIA and VMT requirements.

Benjamin J. Matlock
Planning Manager/City Planner
Yucaipa City Hall • 34272 Yucaipa Blvd • Yucaipa, CA 92399
Office: (909)797-2489 ext. 261

www.yucaipa.org

From: Fermin Preciado <fpreciado@Yucaipa.org>
Sent: Thursday, July 8, 2021 3:56 PM
To: Benjamin Matlock <bmatlock@yucaipa.org>
Subject: FW: Fallbrook Meadows Residential Project

Ben,
Please respond.

Thank you

Fermin Preciado, P.E.
Director of Development Services/City Engineer

APPENDIX C

INTERSECTION TURNING MOVEMENT COUNT WORKSHEETS

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Jul 28, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Calimesa 5th County Line	PROJECT #: SC2989 LOCATION #: 1 CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

		NORTHBOUND 5th			SOUTHBOUND 5th			EASTBOUND County Line			WESTBOUND County Line			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	1	0	1	1	0	1	1	1	1	1	1	
AM	7:00 AM	2	5	1	1	12	32	16	27	0	7	97	5	205
AM	7:15 AM	2	10	5	6	12	38	16	31	1	7	101	4	233
AM	7:30 AM	0	14	5	1	21	49	15	32	2	4	87	3	233
AM	7:45 AM	5	10	4	0	28	30	18	49	1	3	96	4	248
AM	8:00 AM	1	17	7	2	21	37	15	57	1	7	84	5	254
AM	8:15 AM	4	25	4	6	27	46	23	50	2	6	86	6	285
AM	8:30 AM	0	23	3	10	23	28	26	49	0	5	99	8	274
AM	8:45 AM	5	26	9	1	22	23	17	50	2	6	67	4	232
AM	VOLUMES	19	130	38	27	166	283	146	345	9	45	717	39	1,964
AM	APPROACH %	10%	70%	20%	6%	35%	59%	29%	69%	2%	6%	90%	5%	
AM	APP/DEPART	187	/	315	476	/	220	500	/	410	801	/	1,019	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	10	75	18	18	99	141	82	205	4	21	365	23	1,061
AM	APPROACH %	10%	73%	17%	7%	38%	55%	28%	70%	1%	5%	89%	6%	
AM	PEAK HR FACTOR		0.780			0.816			0.970			0.913		0.931
AM	APP/DEPART	103	/	180	258	/	124	291	/	241	409	/	516	0
PM	04:00 PM	3	36	9	4	34	37	31	78	4	13	66	7	322
PM	4:15 PM	4	37	1	5	48	42	21	76	6	5	61	7	313
PM	4:30 PM	3	43	6	6	37	31	36	68	6	8	92	4	340
PM	4:45 PM	3	44	16	4	42	36	38	85	7	8	56	5	344
PM	5:00 PM	4	38	9	8	47	47	36	70	8	7	61	9	344
PM	5:15 PM	1	45	8	12	40	37	49	77	4	6	59	5	343
PM	5:30 PM	4	36	10	9	36	36	35	109	8	8	66	10	367
PM	5:45 PM	2	35	10	9	28	33	42	68	2	8	76	8	321
PM	VOLUMES	24	314	69	57	312	299	288	631	45	63	537	55	2,694
PM	APPROACH %	6%	77%	17%	9%	47%	45%	30%	65%	5%	10%	82%	8%	
PM	APP/DEPART	407	/	657	668	/	420	964	/	757	655	/	860	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	12	163	43	33	165	156	158	341	27	29	242	29	1,398
PM	APPROACH %	6%	75%	20%	9%	47%	44%	30%	65%	5%	10%	81%	10%	
PM	PEAK HR FACTOR		0.865			0.868			0.865			0.893		0.952
PM	APP/DEPART	218	/	350	354	/	221	526	/	417	300	/	410	0

5th

NORTH SIDE

County Line WEST SIDE

EAST SIDE **County Line**

SOUTH SIDE

5th

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
7/28/21	LOCATION:	Calimesa	PROJECT #:	SC2989
WEDNESDAY	NORTH & SOUTH:	3rd	LOCATION #:	2
	EAST & WEST:	County Line	CONTROL:	STOP ALL

PCE Adjusted	NOTES:								
	Class	1	2	3	4	5	6		AM
	Factor	1	1.5	2	3	2	2		PM
									MD
									OTHER
									OTHER

▲ N

◄ W E ►

S ▼

	NORTHBOUND 3rd			SOUTHBOUND 3rd			EASTBOUND County Line			WESTBOUND County Line			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0.5	0.5	0	1	0	0	1	0	
AM 7:00 AM	7	7	2	0	8	16	3	28	5	4	77	0	157
7:15 AM	15	9	1	1	4	17	9	26	2	2	79	2	165
7:30 AM	6	6	0	1	8	11	5	28	1	5	77	0	148
7:45 AM	7	3	4	3	9	7	8	37	2	2	92	1	174
8:00 AM	3	20	2	0	8	18	7	47	4	6	70	3	186
8:15 AM	6	7	4	3	11	13	4	48	2	4	72	2	175
8:30 AM	7	4	4	2	8	15	11	44	6	4	83	1	189
8:45 AM	9	8	9	0	11	14	12	43	2	3	58	3	170
VOLUMES	58	64	26	10	67	110	59	299	24	29	607	12	1,362
APPROACH %	39%	43%	18%	5%	36%	59%	15%	78%	6%	4%	94%	2%	
APP/DEPART	148	/	135	186	/	119	381	/	335	647	/	774	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	22	34	14	8	36	53	30	176	14	15	316	7	723
APPROACH %	31%	49%	20%	8%	37%	55%	14%	80%	6%	4%	93%	2%	
PEAK HR FACTOR		0.700			0.889			0.898			0.894		0.959
APP/DEPART	70	/	71	96	/	64	219	/	198	338	/	391	0
PM 04:00 PM	4	15	7	1	8	6	15	75	10	5	64	1	209
4:15 PM	6	21	3	1	21	11	3	49	5	5	50	0	174
4:30 PM	5	14	7	4	11	9	16	48	7	7	82	3	211
4:45 PM	2	19	2	1	13	8	13	72	5	4	49	4	192
5:00 PM	7	8	3	2	20	19	10	65	6	7	53	1	200
5:15 PM	6	16	7	3	12	11	11	65	6	3	41	1	182
5:30 PM	1	12	3	3	13	17	21	95	7	5	47	2	224
5:45 PM	2	8	5	3	17	12	10	60	5	5	66	2	194
VOLUMES	33	112	37	18	114	92	99	527	51	40	450	14	1,584
APPROACH %	18%	62%	20%	8%	51%	41%	15%	78%	7%	8%	89%	3%	
APP/DEPART	181	/	224	224	/	204	676	/	581	504	/	575	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	16	44	18	11	62	59	52	284	24	20	206	6	799
APPROACH %	21%	56%	23%	8%	47%	45%	14%	79%	7%	8%	89%	3%	
PEAK HR FACTOR		0.668			0.809			0.736			0.798		0.894
APP/DEPART	78	/	101	131	/	106	359	/	312	232	/	281	0

3rd

NORTH SIDE

County Line WEST SIDE EAST SIDE **County Line**

SOUTH SIDE

3rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Calimesa	PROJECT #:	SC2989
7/28/21	NORTH & SOUTH:	2nd	LOCATION #:	3
WEDNESDAY	EAST & WEST:	County Line	CONTROL:	STOP ALL

	NOTES:											
PCE	Class	1	2	3	4	5	6		AM		▲ N	
Adjusted	Factor	1	1.5	2	3	2	2		PM	◄ W		E ►
									MD		S ▼	
									OTHER			
									OTHER			

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	2nd			2nd			County Line			County Line			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM 7:00 AM	3	1	1	0	1	7	3	19	1	2	78	0	115
7:15 AM	4	4	2	0	0	9	4	28	1	1	62	0	114
7:30 AM	5	0	0	0	0	7	8	22	1	0	70	0	113
7:45 AM	2	1	0	0	0	7	8	33	3	2	94	0	150
8:00 AM	0	1	1	0	1	6	9	38	1	0	61	1	119
8:15 AM	2	2	0	1	4	14	17	37	2	1	58	2	140
8:30 AM	6	2	0	0	2	12	1	46	5	0	60	1	135
8:45 AM	5	1	2	0	5	1	10	36	2	5	61	0	127
VOLUMES	26	12	6	1	13	63	59	258	16	11	543	4	1,011
APPROACH %	59%	27%	14%	1%	16%	82%	18%	77%	5%	2%	97%	1%	
APP/DEPART	44	/	75	76	/	40	333	/	265	558	/	632	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	10	6	1	1	7	39	35	154	11	3	273	4	543
APPROACH %	58%	36%	6%	2%	15%	83%	17%	77%	6%	1%	98%	1%	
PEAK HR FACTOR		0.550			0.618			0.896			0.729		0.907
APP/DEPART	17	/	45	47	/	21	199	/	156	280	/	322	0
PM 04:00 PM	4	1	1	0	0	7	3	65	0	1	50	0	131
4:15 PM	2	3	1	0	1	5	4	46	2	3	46	0	113
4:30 PM	2	1	2	2	0	6	7	47	1	3	74	0	145
4:45 PM	2	2	0	0	2	7	8	70	1	1	44	1	137
5:00 PM	0	2	3	0	3	4	2	64	7	0	51	0	135
5:15 PM	3	1	0	0	1	0	8	56	3	2	51	0	124
5:30 PM	4	5	2	1	2	3	6	86	8	1	44	0	161
5:45 PM	1	1	3	0	1	4	5	49	5	1	65	0	135
VOLUMES	18	16	12	3	10	36	42	482	27	12	423	1	1,080
APPROACH %	39%	34%	27%	6%	21%	73%	8%	88%	5%	3%	97%	0%	
APP/DEPART	45	/	59	49	/	49	551	/	497	436	/	476	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	9	10	5	1	8	14	24	275	19	4	188	1	556
APPROACH %	37%	41%	22%	4%	35%	61%	7%	87%	6%	2%	97%	1%	
PEAK HR FACTOR		0.548			0.639			0.796			0.919		0.866
APP/DEPART	23	/	34	23	/	31	317	/	281	193	/	211	0

2nd

NORTH SIDE

County Line WEST SIDE

EAST SIDE **County Line**

SOUTH SIDE

2nd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/28/21 WEDNESDAY	LOCATION:	Calimesa	PROJECT #:	SC2989
	NORTH & SOUTH:	2nd	LOCATION #:	5
	EAST & WEST:	San Rosen Court	CONTROL:	STOP W

PCE Adjusted	NOTES:							
	Class	1	2	3	4	5	6	
	Factor	1	1.5	2	3	2	2	

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND 2nd			SOUTHBOUND 2nd			EASTBOUND San Rosen Court			WESTBOUND San Rosen Court			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	1	0	0	1	X	X	X	X	0	X	0	
AM	7:00 AM	0	4	0	0	6	0	0	0	0	1	0	0	11
	7:15 AM	0	8	0	0	7	0	0	0	0	2	0	1	18
	7:30 AM	0	6	0	0	6	0	0	0	0	2	0	1	15
	7:45 AM	0	11	0	0	6	0	0	0	0	1	0	0	18
	8:00 AM	0	12	0	2	2	0	0	0	0	1	0	0	17
	8:15 AM	0	17	0	0	19	0	0	0	0	1	0	0	37
	8:30 AM	0	2	1	0	14	0	0	0	0	2	0	0	19
	8:45 AM	0	7	1	0	3	0	0	0	0	1	0	1	13
	VOLUMES	0	67	2	2	63	0	0	0	0	11	0	3	148
	APPROACH %	0%	97%	3%	3%	97%	0%	0%	0%	0%	79%	0%	21%	
	APP/DEPART	69	/	70	65	/	74	0	/	4	14	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	42	1	2	41	0	0	0	0	5	0	0	91
	APPROACH %	0%	98%	2%	5%	95%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.632			0.566			0.000			0.625		0.615
	APP/DEPART	43	/	42	43	/	46	0	/	3	5	/	0	0
PM	04:00 PM	0	3	0	1	2	0	0	0	0	2	0	0	8
	4:15 PM	0	7	1	0	6	0	0	0	0	0	0	0	14
	4:30 PM	0	9	0	1	7	0	0	0	0	1	0	0	18
	4:45 PM	0	8	0	0	7	0	0	0	0	2	0	0	17
	5:00 PM	0	5	1	0	5	0	0	0	0	1	0	0	12
	5:15 PM	0	5	2	0	2	0	0	0	0	0	0	2	11
	5:30 PM	0	7	3	0	7	0	0	0	0	1	0	0	18
	5:45 PM	0	9	0	1	3	0	0	0	0	0	0	0	13
	VOLUMES	0	52	7	3	39	0	0	0	0	7	0	2	110
	APPROACH %	0%	88%	12%	7%	93%	0%	0%	0%	0%	78%	0%	22%	
	APP/DEPART	59	/	54	42	/	46	0	/	10	9	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	28	2	1	25	0	0	0	0	4	0	0	60
	APPROACH %	0%	93%	7%	4%	96%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.833			0.813			0.000			0.500		0.833
	APP/DEPART	30	/	28	26	/	29	0	/	3	4	/	0	0

2nd

NORTH SIDE

San Rosen Court WEST SIDE EAST SIDE **San Rosen Court**

SOUTH SIDE

2nd

APPENDIX D

EXISTING VOLUME ADJUSTMENT FACTOR CALCULATIONS

Pandemic Factorization Calculation Summary

	Intersection	Peak Hour	Historical Count (Pre-Pandemic) Date	Historical Count (Pre-Pandemic) Volume	Existing Count (Pandemic Condition) Date	Existing Count (Pandemic Condition) Volume	Years	Ambient Growth Factor 1.5 % Annual Rate	Historical Volume With Ambient Growth 2021	Count Adjustment Factor
1	5th / County Line Rd	AM	19-Sep-19	1,745	28-Jul-21	1,061	1.86	1.0280	1,794	69.1%
		PM	19-Sep-19	1,686	28-Jul-21	1,398	1.86	1.0280	1,733	24.0%

APPENDIX E

TRAVEL DEMAND MODEL PLOTS


SBTAM 2016
I-10 Freeway to Bryant Street
AM Daily Flow
WILDWOOD CANYON RD
6TH PL
AVE G
AVE H
5TH ST
4TH ST
3RD ST
2ND ST
CALIFORNIA ST
BRYANT ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
W AVENUE L
CALIMESA BLVD
SANDALWOOD DR
REDLANDS FWY


SBTAM 2016
I-10 Freeway to Bryant Street
PM Daily Flow
WILDWOOD CANYON RD
6TH PL
AVE G
AVE H
5TH ST
4TH ST
3RD ST
2ND ST
CALIFORNIA ST
BRYANT ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
W AVENUE L
CALIMESA BLVD
SANDALWOOD DR
REDLANDS FWY


SBTAM 2016
I-10 Freeway to Bryant Street
AM Daily Truck Flow
WILDWOOD CANYON RD
6TH PL
AVE G
5TH ST
AVE H
4TH ST
3RD ST
2ND ST
CALIFORNIA ST
BRYANT ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
CALIMESA BLVD
W AVENUE L
SANDALWOOD DR
REDLANDS FWY


SBTAM 2016
I-10 Freeway to Bryant Street
PM Daily Truck Flow
WILDWOOD CANYON RD
6TH PL
AVE G
AVE H
5TH ST
4TH ST
3RD ST
2ND ST
CALIFORNIA ST
BRYANT ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
W AVENUE L
CALIMESA BLVD
SANDALWOOD DR
REDLANDS FWY

SBTAM 2016
I-10 Freeway to Bryant Street
Average Daily Flow


SBTAM 2016
I-10 Freeway to Bryant Street
Average Daily Truck Flow
WILDWOOD CANYON RD
6TH PL
AVE G
5TH ST
AVE H
4TH ST
3RD ST
CALIFORNIA ST
BRYANT ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
W AVENUE L
CALIMESA BLVD
SANDALWOOD DR
REDLANDS FWY

SBTAM 2040
I-10 Freeway to Bryant Street
Average Daily Flow


SBTAM 2040
I-10 Freeway to Bryant Street
Average Daily Truck Flow
WILDWOOD CANYON RD
BRYANT ST
CALIFORNIA ST
6TH PL
AVE G
3RD ST
AVE H
2ND ST
1ST ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
E COUNTY LINE RD
W COUNTY LINE RD
COUNTY LINE RD
COUNTYLINE RD
5TH ST
W AVENUE L
SANDALWOOD DR


SBTAM 2040
I-10 Freeway to Bryant Street
AM Daily Flow
WILDWOOD CANYON RD
BRYANT ST
CALIFORNIA ST
AVE G
6TH PL
3RD ST
AVE H
2ND ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
W COUNTY LINE RD
E COUNTY LINE RD
COUNTY LINE RD
COUNTYLINE RD
5TH ST
W AVENUE L
SANDALWOOD DR

SBTAM 2040
I-10 Freeway to Bryant Street
PM Daily Flow


SBTAM 2040
I-10 Freeway to Bryant Street
AM Daily Truck Flow
WILDWOOD CANYON RD
BRYANT ST
CALIFORNIA ST
6TH PL
AVE G
3RD ST
AVE H
2ND ST
4TH ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
E COUNTY LINE RD
W COUNTY LINE RD
COUNTY LINE RD
COUNTYLINE RD
5TH ST
W AVENUE L
SANDALWOOD DR

SBTAM 2040
I-10 Freeway to Bryant Street
PM Daily Truck Flow
WILDWOOD CANYON RD
BRYANT ST
CALIFORNIA ST
3RD ST
6TH PL
AVE G
AVE H
2ND ST
DOUGLAS ST
FREMONT ST
HOLMES ST
MESA GRANDE DR
E COUNTY LINE RD
W COUNTY LINE RD
COUNTY LINE RD
COUNTYLINE RD
5TH ST
W AVENUE L
SANDALWOOD DR

APPENDIX F

POST PROCESSING WORKSHEETS

AVERAGE DAILY TRAFFIC

ID	INTERSECTION	LEG	MODEL 2021 ADT	EXISTING 2021 ADT	MODEL 2040 ADT	FUTURE 2040 ADT[1]	OPENING 2023 ADT	ADJUSTED BUILDOUT ADT[2]
1	5th Street at:	North	7,744	10,100	11,985	11,990	10,550	11,990
	County Line Road	South	1,341	6,400	4,414	9,500	6,700	9,500
		East	7,226	10,500	8,725	12,000	10,700	13,800
		West	13,007	13,600	15,383	16,900	13,900	17,300
2	3rd Street at:	North	1,098	3,300	1,688	3,900	3,400	4,000
	County Line Road	South	158	2,600	351	2,800	2,600	3,000
		East	8,758	7,800	11,918	11,900	8,100	11,900
		West	9,388	9,100	13,405	13,400	9,500	13,400
3	2nd Street at:	North	1,561	900	1,386	1,400	900	1,400
	County Line Road	South	-	700	-	700	700	700
		East	7,799	6,800	11,522	11,500	7,200	11,500
		West	8,758	7,500	11,918	11,900	7,800	11,900
4	3rd Street at:	North	1,098	2,600	1,688	3,200	2,700	3,300
	Project Driveway	South	1,098	2,600	1,688	3,200	2,700	3,300
		East	-		-	-	-	-
		West	-		-	-	-	-
5	2nd Street at:	North	1,561	700	1,386	1,500	700	1,500
	San Rosen Center	South	1,561	900	1,386	1,500	900	1,500
		East	-	100	-	100	100	100
		West	-	-	-	-	-	-

5th Street (NS) / County Line Road (EW) - #1

MORNING PEAK HOUR								EVENING PEAK HOUR							
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):								EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):							
2021			130	94	16			2021			153	160	32		
			<	v	>						<	v	>		
	77	^				^	22		154	^				^	28
	180	>				<	344		325	>				<	236
	3	v				v	20		27	v				v	29
			<	^	>						<	^	>		
			10	73	18						11	159	40		
EXISTING PEAK HOUR COUNT YEAR (AUTOS):								EXISTING PEAK HOUR COUNT YEAR (AUTOS):							
2021				240	172			2021				345	341		
				v	^							v	^		
	484	<	IN =		987	<	386		400	<	IN =		1354	<	293
	260	>	OUT =		987	>	214		506	>	OUT =		1354	>	397
				v	^							v	^		
				117	101							216	210		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):								EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):							
			19	9	4						5	10	2		
			<	v	>						<	v	>		
	9	^				^	2		6	^				^	2
	43	>				<	36		28	>				<	10
	2	v				v	3		0	v				v	0
PCE FACTORS BY AXLE:			<	^	>			PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2.0 4+: 3.0			0	3	0			2: 1.5 3: 2 4+: 3.0			2	6	5		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):								TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):							
2021			149	103	20			2021			158	170	34		
			<	v	>						<	v	>		
	86	^				^	24		160	^				^	30
	223	>				<	380		353	>				<	246
	5	v				v	23		27	v				v	29
			<	^	>						<	^	>		
			10	76	18						13	165	45		
EXISTING PEAK PERIOD MODEL YEAR (AUTO):								EXISTING PEAK PERIOD MODEL YEAR (AUTO):							
2016				731	667			2016				1061	980		
				v	^							v	^		
	1517	<	IN =		2572	<	925		1416	<	IN =		3815	<	641
	750	>	OUT =		2571	>	296		1943	>	OUT =		3815	>	1212
				v	^							v	^		
				91	166							207	170		
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2016				19	21			2016				21	18		
				v	^							v	^		
	24	<	IN =		58	<	8		29	<	IN =		58	<	11
	26	>	OUT =		57	>	10		24	>	OUT =		59	>	9
				v	^							v	^		
				2	5							3	2		
EXISTING PEAK HOUR MODEL YEAR (PCEs):								EXISTING PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.38				284	260			PHF FOR CARS: 0.28				302	279		
PHF FOR TRUCKS: 0.333				v	^			PHF FOR TRUCKS: 0.25				v	^		
	584	<	IN =		997	<	354		404	<	IN =		1083	<	182
	294	>	OUT =		996	>	116		550	>	OUT =		1083	>	342
				v	^							v	^		
				35	65							59	48		
FUTURE PEAK PERIOD MODEL YEAR (AUTO):								FUTURE PEAK PERIOD MODEL YEAR (AUTO):							
2040				1302	1790			2040				1372	1791		
				v	^							v	^		
	1391	<	IN =		3784	<	291		996	<	IN =		5514	<	981
	981	>	OUT =		3784	>	494		2548	>	OUT =		5514	>	1487
				v	^							v	^		
				109	1210							1240	613		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2040				35	36			2040				31	39		
				v	^							v	^		
	43	<	IN =		102	<	11		20	<	IN =		102	<	19
	22	>	OUT =		103	>	21		39	>	OUT =		102	>	13
				v	^							v	^		
				3	34							30	13		
FUTURE PEAK HOUR MODEL YEAR (PCEs):								FUTURE PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.38				506	692			PHF FOR CARS: 0.28				392	511		
PHF FOR TRUCKS: 0.333				v	^			PHF FOR TRUCKS: 0.25				v	^		
	543	<	IN =		1472	<	114		284	<	IN =		1569	<	279
	380	>	OUT =		1472	>	195		723	>	OUT =		1569	>	420
				v	^							v	^		
				42	471							355	175		
RAW GROWTH (PCEs): 2016 TO 2040								RAW GROWTH (PCEs): 2016 TO 2040							
CONVERSION OF TRUCKS TO: 2040				222	432			CONVERSION OF TRUCKS TO: 2040				90	232		
FACTOR = 1.00				v	^			FACTOR = 1.00				v	^		
	-42	<				<	-240		-120	<				<	97
	86	>				>	79		173	>				>	78
				v	^							v	^		
				7	406							296	127		

5th Street (NS) / County Line Road (EW) - #1

MORNING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040						
10.00 MINIMUM GROWTH %						220	430		
						v	^		
				50	<	IN =	760	<	40
				90	>	OUT =	570	>	80
						v	^		
						10	410		
PRORATED GROWTH (PCEs):	2021	TO	2040						
19 YEARS						170	340		
						v	^		
				40	<			<	30
				70	>			>	60
						v	^		
						10	320		
NEW PROJECTED VOLUMES (PCEs):	2040								
						440	530		
						v	^		
				580	<			<	460
				380	>			>	320
						v	^		
						140	420		
YEAR 2023 GROWTH:	2021	TO	2023						
2 YEARS						20	40		
						v	^		
				0	<			<	0
				10	>			>	10
						v	^		
						0	30		
INITIAL YEAR 2023 VOLUMES:									
2023						290	230		
						v	^		
				540	<	IN =	1170	<	430
				320	>	OUT =	1170	>	270
						v	^		
						130	130		
BALANCED YEAR 2023 VOLUMES:									
2023						290	230		
						v	^		
				540	<	IN =	1170	<	430
				320	>	OUT =	1170	>	270
						v	^		
						130	130		
ADT BY LEG:									
2040						11,990			
						N			
				16,900	W	LEG	E		9,600
						S			
						8,300			
ADT BY LEG:									
2023						8,650			
						N			
				11,300	W	LEG	E		8,700
						S			
						5,500			

EVENING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040						
10 MINIMUM GROWTH %						90	230		
						v	^		
				40	<	IN =	490	<	100
				170	>	OUT =	650	>	80
						v	^		
						300	130		
PRORATED GROWTH (PCEs):	2021	TO	2040						
19 YEARS						70	180		
						v	^		
				30	<			<	80
				130	>			>	60
						v	^		
						240	100		
NEW PROJECTED VOLUMES (PCEs):	2040								
						430	540		
						v	^		
				450	<			<	390
				670	>			>	490
						v	^		
						470	320		
YEAR 2023 GROWTH:	2021	TO	2023						
2 YEARS						10	20		
						v	^		
				0	<			<	10
				10	>			>	10
						v	^		
						30	10		
INITIAL YEAR 2023 VOLUMES:									
2023						370	380		
						v	^		
				420	<	IN =	1470	<	320
				550	>	OUT =	1500	>	440
						v	^		
						260	230		
BALANCED YEAR 2023 VOLUMES:									
2023						380	380		
						v	^		
				420	<	IN =	1500	<	330
				560	>	OUT =	1500	>	440
						v	^		
						260	230		
ADT BY LEG:									
2040						11,990			
						N			
				16,900	W	LEG	E		9,600
						S			
						8,300			
ADT BY LEG:									
2023						8,650			
						N			
				11,300	W	LEG	E		8,700
						S			
						5,500			

5th Street (NS) / County Line Road (EW) - #1

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR INPUT DATA					EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**10**	SOUTH LEG		NORTH	LEFT	**13**	SOUTH LEG	
BOUND	THRU	**76**	IN ...	**420**	BOUND	THRU	**165**	IN ...	**320**
	RIGHT	**18**	OUT ...	**140**		RIGHT	**45**	OUT ...	**470**
SOUTH	LEFT	**20**	NORTH LEG		SOUTH	LEFT	**34**	NORTH LEG	
BOUND	THRU	**103**	IN ...	**440**	BOUND	THRU	**170**	IN ...	**430**
	RIGHT	**149**	OUT ...	**530**		RIGHT	**158**	OUT ...	**540**
EAST	LEFT	**86**	WEST LEG		EAST	LEFT	**160**	WEST LEG	
BOUND	THRU	**223**	IN ...	**380**	BOUND	THRU	**353**	IN ...	**670**
	RIGHT	**5**	OUT ...	**580**		RIGHT	**27**	OUT ...	**450**
WEST	LEFT	**23**	EAST LEG		WEST	LEFT	**29**	EAST LEG	
BOUND	THRU	**380**	IN ...	**460**	BOUND	THRU	**246**	IN ...	**390**
	RIGHT	**24**	OUT ...	**320**		RIGHT	**30**	OUT ...	**490**

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR RESULTS					EVENING PEAK HOUR RESULTS				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**10**	**15**	NORTH LEG	NORTH	LEFT	**13**	**19**	NORTH LEG
BOUND	THRU	**76**	**332**	RATIO **7.7%**	BOUND	THRU	**165**	**266**	RATIO **8.9%**
	RIGHT	**18**	**48**	ADT 11,990		RIGHT	**45**	**58**	ADT 11,990
SOUTH	LEFT	**20**	**53**	SOUTH LEG	SOUTH	LEFT	**34**	**37**	SOUTH LEG
BOUND	THRU	**103**	**122**	RATIO **6.6%**	BOUND	THRU	**170**	**312**	RATIO **9.8%**
	RIGHT	**149**	**224**	ADT 8,300		RIGHT	**158**	**174**	ADT 8,300
EAST	LEFT	**86**	**137**	EAST LEG	EAST	LEFT	**160**	**232**	EAST LEG
BOUND	THRU	**223**	**245**	RATIO **8.9%**	BOUND	THRU	**353**	**408**	RATIO **9.6%**
	RIGHT	**5**	**6**	ADT 9,600		RIGHT	**27**	**79**	ADT 9,600
WEST	LEFT	**23**	**25**	WEST LEG	WEST	LEFT	**29**	**80**	WEST LEG
BOUND	THRU	**380**	**418**	RATIO **6.2%**	BOUND	THRU	**246**	**302**	RATIO **7.2%**
	RIGHT	**24**	**61**	ADT 16,900		RIGHT	**30**	**41**	ADT 16,900

3rd Street (NS) / County Line Road (EW) - #2

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):							
2021			44	32	6		
			<	v	>		
	30	^				^	7
	138	>				<	289
	8	v				v	12
			<	^	>		
			19	34	14		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):						
2021			82	71		
			v	^		
	352	<	IN =	633	<	308
	176	>	OUT =	633	>	158
			v	^		
			52	67		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):							
			9	4	2		
			<	v	>		
	0	^				^	0
	38	>				<	27
	6	v				v	3
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2.0 4+: 3.0			3	0	0		

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):							
2021			53	36	8		
			<	v	>		
	30	^				^	7
	176	>				<	316
	14	v				v	15
			<	^	>		
			22	34	14		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):						
2016			54	165		
			v	^		
	1151	<	IN =	1923	<	1124
	745	>	OUT =	1926	>	610
			v	^		
			0	0		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						
2016			1	4		
			v	^		
	12	<	IN =	30	<	11
	18	>	OUT =	31	>	15
			v	^		
			0	0		

EXISTING PEAK HOUR MODEL YEAR (PCEs):						
PHF FOR CARS: 0.38			21	64		
PHF FOR TRUCKS: 0.333			v	^		
	441	<	IN =	741	<	431
	289	>	OUT =	742	>	237
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):						
2040			93	297		
			v	^		
	1117	<	IN =	2194	<	1064
	1037	>	OUT =	2196	>	773
			v	^		
			9	0		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						
2040			1	6		
			v	^		
	21	<	IN =	51	<	20
	30	>	OUT =	52	>	25
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):						
PHF FOR CARS: 0.38			36	115		
PHF FOR TRUCKS: 0.333			v	^		
	431	<	IN =	851	<	411
	404	>	OUT =	852	>	302
			v	^		
			3	0		

RAW GROWTH (PCEs): 2016 TO 2040						
CONVERSION OF TRUCKS TO: 2040			15	51		
FACTOR = 1.00			v	^		
	-10	<			<	-20
	115	>			>	65
			v	^		
			3	0		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):							
2021			55	60	9		
			<	v	>		
	50	^				^	6
	260	>				<	187
	24	v				v	18
			<	^	>		
			16	42	18		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):						
2021			124	98		
			v	^		
	258	<	IN =	745	<	211
	334	>	OUT =	745	>	287
			v	^		
			102	76		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):							
			4	2	2		
			<	v	>		
	2	^				^	0
	24	>				<	19
	0	v				v	2
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2 4+: 3.0			0	2	0		

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):							
2021			59	62	11		
			<	v	>		
	52	^				^	6
	284	>				<	206
	24	v				v	20
			<	^	>		
			16	44	18		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):						
2016			306	137		
			v	^		
	1351	<	IN =	3114	<	1044
	1608	>	OUT =	3116	>	1628
			v	^		
			0	156		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						
2016			6	2		
			v	^		
	20	<	IN =	36	<	15
	13	>	OUT =	36	>	14
			v	^		
			0	2		

EXISTING PEAK HOUR MODEL YEAR (PCEs):						
PHF FOR CARS: 0.28			87	39		
PHF FOR TRUCKS: 0.25			v	^		
	383	<	IN =	881	<	296
	453	>	OUT =	881	>	459
			v	^		
			0	44		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):						
2040			367	382		
			v	^		
	1776	<	IN =	4133	<	1408
	2352	>	OUT =	4135	>	1977
			v	^		
			0	6		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						
2040			5	5		
			v	^		
	29	<	IN =	53	<	25
	23	>	OUT =	53	>	19
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):						
PHF FOR CARS: 0.28			104	108		
PHF FOR TRUCKS: 0.25			v	^		
	505	<	IN =	1170	<	400
	664	>	OUT =	1171	>	558
			v	^		
			0	2		

RAW GROWTH (PCEs): 2016 TO 2040						
CONVERSION OF TRUCKS TO: 2040			17	69		
FACTOR = 1.00			v	^		
	121	<			<	104
	211	>			>	99
			v	^		
			0	-43		

3rd Street (NS) / County Line Road (EW) - #2

MORNING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040					
10.00 MINIMUM GROWTH %					10	50		
					v	^		
			40	<	IN =	150	<	30
			110	>	OUT =	160	>	70
					v	^		
					0	0		
PRORATED GROWTH (PCEs):	2021	TO	2040					
19 YEARS					10	40		
					v	^		
			30	<			<	20
			90	>			>	60
					v	^		
					0	0		
NEW PROJECTED VOLUMES (PCEs):	2040							
					110	110		
					v	^		
			420	<			<	360
			310	>			>	260
					v	^		
					70	70		
YEAR 2023 GROWTH:	2021	TO	2023					
2 YEARS					0	0		
					v	^		
			0	<			<	0
			10	>			>	10
					v	^		
					0	0		
INITIAL YEAR 2023 VOLUMES:								
2023					100	70		
					v	^		
			390	<	IN =	740	<	340
			230	>	OUT =	740	>	210
					v	^		
					70	70		
BALANCED YEAR 2023 VOLUMES:								
2023					100	70		
					v	^		
			390	<	IN =	740	<	340
			230	>	OUT =	740	>	210
					v	^		
					70	70		
ADT BY LEG:								
2040					3,200			
					N			
			13,400	W	LEG	E		11,900
					S			
					2,100			
ADT BY LEG:								
2023					2,800			
					N			
			7,800	W	LEG	E		6,600
					S			
					2,100			

EVENING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040					
10 MINIMUM GROWTH %					20	70		
					v	^		
			120	<	IN =	330	<	100
			210	>	OUT =	290	>	100
					v	^		
					0	0		
PRORATED GROWTH (PCEs):	2021	TO	2040					
19 YEARS					20	60		
					v	^		
			100	<			<	80
			170	>			>	80
					v	^		
					0	0		
NEW PROJECTED VOLUMES (PCEs):	2040							
					150	160		
					v	^		
			380	<			<	310
			530	>			>	390
					v	^		
					110	80		
YEAR 2023 GROWTH:	2021	TO	2023					
2 YEARS					0	10		
					v	^		
			10	<			<	10
			20	>			>	10
					v	^		
					0	0		
INITIAL YEAR 2023 VOLUMES:								
2023					130	110		
					v	^		
			290	<	IN =	830	<	240
			380	>	OUT =	830	>	320
					v	^		
					110	80		
BALANCED YEAR 2023 VOLUMES:								
2023					130	110		
					v	^		
			290	<	IN =	830	<	240
			380	>	OUT =	830	>	320
					v	^		
					110	80		
ADT BY LEG:								
2040					3,200			
					N			
			13,400	W	LEG	E		11,900
					S			
					2,100			
ADT BY LEG:								
2023					2,800			
					N			
			7,800	W	LEG	E		6,600
					S			
					2,100			

3rd Street (NS) / County Line Road (EW) - #2

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR INPUT DATA					EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**22**	SOUTH LEG		NORTH	LEFT	**16**	SOUTH LEG	
BOUND	THRU	**34**	IN ...	**70**	BOUND	THRU	**44**	IN ...	**80**
	RIGHT	**14**	OUT ...	**70**		RIGHT	**18**	OUT ...	**110**
SOUTH	LEFT	**8**	NORTH LEG		SOUTH	LEFT	**11**	NORTH LEG	
BOUND	THRU	**36**	IN ...	**110**	BOUND	THRU	**62**	IN ...	**150**
	RIGHT	**53**	OUT ...	**110**		RIGHT	**59**	OUT ...	**160**
EAST	LEFT	**30**	WEST LEG		EAST	LEFT	**52**	WEST LEG	
BOUND	THRU	**176**	IN ...	**310**	BOUND	THRU	**284**	IN ...	**530**
	RIGHT	**14**	OUT ...	**420**		RIGHT	**24**	OUT ...	**380**
WEST	LEFT	**15**	EAST LEG		WEST	LEFT	**20**	EAST LEG	
BOUND	THRU	**316**	IN ...	**360**	BOUND	THRU	**206**	IN ...	**310**
	RIGHT	**7**	OUT ...	**260**		RIGHT	**6**	OUT ...	**390**

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR RESULTS					EVENING PEAK HOUR RESULTS				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**22**	**24**	NORTH LEG	NORTH	LEFT	**16**	**18**	NORTH LEG
BOUND	THRU	**34**	**41**	RATIO **7.0%**	BOUND	THRU	**44**	**48**	RATIO **10.1%**
	RIGHT	**14**	**15**	ADT 3,200		RIGHT	**18**	**20**	ADT 3,200
SOUTH	LEFT	**8**	**10**	SOUTH LEG	SOUTH	LEFT	**11**	**12**	SOUTH LEG
BOUND	THRU	**36**	**40**	RATIO **7.3%**	BOUND	THRU	**62**	**68**	RATIO **10.0%**
	RIGHT	**53**	**63**	ADT 2,100		RIGHT	**59**	**81**	ADT 2,100
EAST	LEFT	**30**	**58**	EAST LEG	EAST	LEFT	**52**	**106**	EAST LEG
BOUND	THRU	**176**	**239**	RATIO **5.4%**	BOUND	THRU	**284**	**369**	RATIO **6.0%**
	RIGHT	**14**	**17**	ADT 11,900		RIGHT	**24**	**35**	ADT 11,900
WEST	LEFT	**15**	**17**	WEST LEG	WEST	LEFT	**20**	**22**	WEST LEG
BOUND	THRU	**316**	**348**	RATIO **5.6%**	BOUND	THRU	**206**	**280**	RATIO **6.6%**
	RIGHT	**7**	**11**	ADT 13,400		RIGHT	**6**	**8**	ADT 13,400

2nd Street (NS) / County Line Road (EW) - #3

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):								
2021				39	7	1		
				<	v	>		
	33	^					^	4
	123	>					<	246
	7	v					v	3
				<	^	>		
				8	6	1		
EXISTING PEAK HOUR COUNT YEAR (AUTOS):								
2021					47	43		
					v	^		
			293	<	IN =	478	<	253
			163	>	OUT =	478	>	125
					v	^		
					17	15		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):								
				0	0	0		
				<	v	>		
	2	^					^	0
	31	>					<	27
	4	v					v	0
PCE FACTORS BY AXLE:				<	^	>		
2: 1.5 3: 2.0 4+: 3.0				2	0	0		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):								
2021				39	7	1		
				<	v	>		
	35	^					^	4
	154	>					<	273
	11	v					v	3
				<	^	>		
				10	6	1		
EXISTING PEAK PERIOD MODEL YEAR (AUTO):								
2016					199	200		
					v	^		
			1124	<	IN =	1888	<	1079
			610	>	OUT =	1884	>	560
					v	^		
					0	0		
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								
2016					3	3		
					v	^		
			11	<	IN =	29	<	11
			15	>	OUT =	28	>	14
					v	^		
					0	0		
EXISTING PEAK HOUR MODEL YEAR (PCEs):								
PHF FOR CARS: 0.38					77	77		
PHF FOR TRUCKS: 0.333					v	^		
			431	<	IN =	727	<	414
			237	>	OUT =	725	>	217
					v	^		
					0	0		
FUTURE PEAK PERIOD MODEL YEAR (AUTO):								
2040					310	82		
					v	^		
			1064	<	IN =	1898	<	815
			773	>	OUT =	1898	>	752
					v	^		
					0	0		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								
2040					0	1		
					v	^		
			20	<	IN =	44	<	19
			25	>	OUT =	40	>	19
					v	^		
					0	0		
FUTURE PEAK HOUR MODEL YEAR (PCEs):								
PHF FOR CARS: 0.38					118	31		
PHF FOR TRUCKS: 0.333					v	^		
			411	<	IN =	736	<	316
			302	>	OUT =	735	>	292
					v	^		
					0	0		
RAW GROWTH (PCEs): 2016 TO 2040								
CONVERSION OF TRUCKS TO: 2040					41	-46		
FACTOR = 1.00					v	^		
			-20	<			<	-98
			65	>			>	75
					v	^		
					0	0		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):								
2021				14	8	1		
				<	v	>		
	22	^					^	1
	249	>					<	177
	12	v					v	4
				<	^	>		
				7	8	5		
EXISTING PEAK HOUR COUNT YEAR (AUTOS):								
2021					23	31		
					v	^		
			198	<	IN =	508	<	182
			283	>	OUT =	508	>	255
					v	^		
					24	20		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):								
				0	0	0		
				<	v	>		
	2	^					^	0
	26	>					<	11
	7	v					v	0
PCE FACTORS BY AXLE:				<	^	>		
2: 1.5 3: 2 4+: 3.0				2	2	0		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):								
2021				14	8	1		
				<	v	>		
	24	^					^	1
	275	>					<	188
	19	v					v	4
				<	^	>		
				9	10	5		
EXISTING PEAK PERIOD MODEL YEAR (AUTO):								
2016					245	292		
					v	^		
			1044	<	IN =	2895	<	1022
			1628	>	OUT =	2893	>	1557
					v	^		
					0	0		
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								
2016					3	3		
					v	^		
			15	<	IN =	32	<	15
			14	>	OUT =	31	>	13
					v	^		
					0	0		
EXISTING PEAK HOUR MODEL YEAR (PCEs):								
PHF FOR CARS: 0.28					69	83		
PHF FOR TRUCKS: 0.25					v	^		
			296	<	IN =	819	<	290
			459	>	OUT =	818	>	439
					v	^		
					0	0		
FUTURE PEAK PERIOD MODEL YEAR (AUTO):								
2040					326	476		
					v	^		
			1408	<	IN =	3754	<	1451
			1977	>	OUT =	3754	>	1870
					v	^		
					0	0		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):								
2040					5	5		
					v	^		
			25	<	IN =	47	<	23
			19	>	OUT =	47	>	17
					v	^		
					0	0		
FUTURE PEAK HOUR MODEL YEAR (PCEs):								
PHF FOR CARS: 0.28					93	135		
PHF FOR TRUCKS: 0.25					v	^		
			400	<	IN =	1063	<	412
			558	>	OUT =	1063	>	528
					v	^		
					0	0		
RAW GROWTH (PCEs): 2016 TO 2040								
CONVERSION OF TRUCKS TO: 2040					23	52		
FACTOR = 1.00					v	^		
			104	<			<	122
			99	>			>	89
					v	^		
					0	0		

2nd Street (NS) / County Line Road (EW) - #3

MORNING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040					
10.00 MINIMUM GROWTH %					40	0		
					v	^		
			30	<	IN =	140	<	30
			70	>	OUT =	100	>	70
					v	^		
					0	0		
PRORATED GROWTH (PCEs):	2021	TO	2040					
19 YEARS					30	0		
					v	^		
			20	<			<	20
			60	>			>	60
					v	^		
					0	0		
NEW PROJECTED VOLUMES (PCEs):	2040							
					80	50		
					v	^		
			340	<			<	300
			260	>			>	220
					v	^		
					20	20		
YEAR 2023 GROWTH:	2021	TO	2023					
2 YEARS					0	0		
					v	^		
			0	<			<	0
			10	>			>	10
					v	^		
					0	0		
INITIAL YEAR 2023 VOLUMES:								
2023					50	50		
					v	^		
			320	<	IN =	560	<	280
			210	>	OUT =	560	>	170
					v	^		
					20	20		
BALANCED YEAR 2023 VOLUMES:								
2023					50	50		
					v	^		
			320	<	IN =	560	<	280
			210	>	OUT =	560	>	170
					v	^		
					20	20		
ADT BY LEG:								
2040					1,400			
					N			
			11,900	W	LEG	E		11,500
					S			
					600			
ADT BY LEG:								
2023					700			
					N			
			6,400	W	LEG	E		5,900
					S			
					600			

EVENING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040					
10 MINIMUM GROWTH %					20	50		
					v	^		
			100	<	IN =	240	<	120
			100	>	OUT =	240	>	90
					v	^		
					0	0		
PRORATED GROWTH (PCEs):	2021	TO	2040					
19 YEARS					20	40		
					v	^		
			80	<			<	100
			80	>			>	70
					v	^		
					0	0		
NEW PROJECTED VOLUMES (PCEs):	2040							
					40	80		
					v	^		
			290	<			<	290
			400	>			>	350
					v	^		
					30	20		
YEAR 2023 GROWTH:	2021	TO	2023					
2 YEARS					0	0		
					v	^		
			10	<			<	10
			10	>			>	10
					v	^		
					0	0		
INITIAL YEAR 2023 VOLUMES:								
2023					20	40		
					v	^		
			220	<	IN =	570	<	200
			330	>	OUT =	580	>	290
					v	^		
					30	20		
BALANCED YEAR 2023 VOLUMES:								
2023					20	40		
					v	^		
			220	<	IN =	580	<	200
			340	>	OUT =	580	>	290
					v	^		
					30	20		
ADT BY LEG:								
2040					1,400			
					N			
			11,900	W	LEG	E		11,500
					S			
					600			
ADT BY LEG:								
2023					700			
					N			
			6,400	W	LEG	E		5,900
					S			
					600			

2nd Street (NS) / County Line Road (EW) - #3

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR INPUT DATA					EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**10**	SOUTH LEG		NORTH	LEFT	**9**	SOUTH LEG	
BOUND	THRU	**6**	IN ...	**20**	BOUND	THRU	**10**	IN ...	**20**
	RIGHT	**1**	OUT ...	**20**		RIGHT	**5**	OUT ...	**30**
SOUTH	LEFT	**1**	NORTH LEG		SOUTH	LEFT	**1**	NORTH LEG	
BOUND	THRU	**7**	IN ...	**80**	BOUND	THRU	**8**	IN ...	**40**
	RIGHT	**39**	OUT ...	**50**		RIGHT	**14**	OUT ...	**80**
EAST	LEFT	**35**	WEST LEG		EAST	LEFT	**24**	WEST LEG	
BOUND	THRU	**154**	IN ...	**260**	BOUND	THRU	**275**	IN ...	**400**
	RIGHT	**11**	OUT ...	**340**		RIGHT	**19**	OUT ...	**290**
WEST	LEFT	**3**	EAST LEG		WEST	LEFT	**4**	EAST LEG	
BOUND	THRU	**273**	IN ...	**300**	BOUND	THRU	**188**	IN ...	**290**
	RIGHT	**4**	OUT ...	**220**		RIGHT	**1**	OUT ...	**350**

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR RESULTS					EVENING PEAK HOUR RESULTS				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**10**	**11**	NORTH LEG	NORTH	LEFT	**9**	**10**	NORTH LEG
BOUND	THRU	**6**	**8**	RATIO **9.1%**	BOUND	THRU	**10**	**14**	RATIO **8.4%**
	RIGHT	**1**	**2**	ADT 1,400		RIGHT	**5**	**6**	ADT 1,400
SOUTH	LEFT	**1**	**3**	SOUTH LEG	SOUTH	LEFT	**1**	**3**	SOUTH LEG
BOUND	THRU	**7**	**10**	RATIO **7.7%**	BOUND	THRU	**8**	**13**	RATIO **11.7%**
	RIGHT	**39**	**61**	ADT 600		RIGHT	**14**	**22**	ADT 600
EAST	LEFT	**35**	**39**	EAST LEG	EAST	LEFT	**24**	**60**	EAST LEG
BOUND	THRU	**154**	**215**	RATIO **4.6%**	BOUND	THRU	**275**	**343**	RATIO **5.5%**
	RIGHT	**11**	**12**	ADT 11,500		RIGHT	**19**	**21**	ADT 11,500
WEST	LEFT	**3**	**3**	WEST LEG	WEST	LEFT	**4**	**6**	WEST LEG
BOUND	THRU	**273**	**300**	RATIO **5.4%**	BOUND	THRU	**188**	**265**	RATIO **6.1%**
	RIGHT	**4**	**6**	ADT 11,900		RIGHT	**1**	**6**	ADT 11,900

2nd Street (NS) / San Rosen Center (EW) - #5

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):

2021			0	41	2		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	5
			<	^	>		
			0	42	1		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):

2021			43	42		
			v	^		
	0	<	IN =	91	<	5
	0	>	OUT =	91	>	3
			v	^		
			46	43		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):

			0	0	0		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	0
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2.0 4+: 3.0			0	0	0		

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):

2021			0	41	2		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	5
			<	^	>		
			0	42	1		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):

2016			199	200		
			v	^		
	0	<	IN =	399	<	0
	0	>	OUT =	399	>	0
			v	^		
			199	200		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):

2016			3	3		
			v	^		
	0	<	IN =	6	<	0
	0	>	OUT =	6	>	0
			v	^		
			3	3		

EXISTING PEAK HOUR MODEL YEAR (PCEs):

PHF FOR CARS: 0.38			77	77		
PHF FOR TRUCKS: 0.333			v	^		
	0	<	IN =	154	<	0
	0	>	OUT =	154	>	0
			v	^		
			77	77		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):

2040			310	82		
			v	^		
	0	<	IN =	392	<	0
	0	>	OUT =	392	>	0
			v	^		
			310	82		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):

2040			0	1		
			v	^		
	0	<	IN =	1	<	0
	0	>	OUT =	1	>	0
			v	^		
			0	1		

FUTURE PEAK HOUR MODEL YEAR (PCEs):

PHF FOR CARS: 0.38			118	31		
PHF FOR TRUCKS: 0.333			v	^		
	0	<	IN =	149	<	0
	0	>	OUT =	149	>	0
			v	^		
			118	31		

RAW GROWTH (PCEs): 2016 TO 2040

CONVERSION OF TRUCKS TO: 2040			41	-46		
FACTOR = 1.00			v	^		
	0	<			<	0
	0	>			>	0
			v	^		
			41	-46		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):

2021			0	23	1		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	4
			<	^	>		
			0	25	2		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):

2021			24	25		
			v	^		
	0	<	IN =	55	<	4
	0	>	OUT =	55	>	3
			v	^		
			27	27		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):

			0	2	0		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	0
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2 4+: 3.0			0	3	0		

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):

2021			0	25	1		
			<	v	>		
	0	^				^	0
	0	>				<	0
	0	v				v	4
			<	^	>		
			0	28	2		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):

2016			245	292		
			v	^		
	0	<	IN =	537	<	0
	0	>	OUT =	537	>	0
			v	^		
			245	292		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):

2016			3	3		
			v	^		
	0	<	IN =	6	<	0
	0	>	OUT =	6	>	0
			v	^		
			3	3		

EXISTING PEAK HOUR MODEL YEAR (PCEs):

PHF FOR CARS: 0.28			69	83		
PHF FOR TRUCKS: 0.25			v	^		
	0	<	IN =	152	<	0
	0	>	OUT =	152	>	0
			v	^		
			69	83		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):

2040			326	476		
			v	^		
	0	<	IN =	802	<	0
	0	>	OUT =	802	>	0
			v	^		
			326	476		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):

2040			5	5		
			v	^		
	0	<	IN =	10	<	0
	0	>	OUT =	10	>	0
			v	^		
			5	5		

FUTURE PEAK HOUR MODEL YEAR (PCEs):

PHF FOR CARS: 0.28			93	135		
PHF FOR TRUCKS: 0.25			v	^		
	0	<	IN =	227	<	0
	0	>	OUT =	227	>	0
			v	^		
			93	135		

RAW GROWTH (PCEs): 2016 TO 2040

CONVERSION OF TRUCKS TO: 2040			23	52		
FACTOR = 1.00			v	^		
	0	<			<	0
	0	>			>	0
			v	^		
			23	52		

2nd Street (NS) / San Rosen Center (EW) - #5

MORNING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040						
10.00 MINIMUM GROWTH %						40	0		
						v	^		
				0	<	IN =	40	<	0
				0	>	OUT =	40	>	0
						v	^		
						40	0		
PRORATED GROWTH (PCEs):	2021	TO	2040						
19 YEARS						30	0		
						v	^		
				0	<			<	0
				0	>			>	0
						v	^		
						30	0		
NEW PROJECTED VOLUMES (PCEs):	2040								
						70	40		
						v	^		
				0	<			<	10
				0	>			>	0
						v	^		
						80	40		
YEAR 2023 GROWTH:	2021	TO	2023						
2 YEARS						0	0		
						v	^		
				0	<			<	0
				0	>			>	0
						v	^		
						0	0		
INITIAL YEAR 2023 VOLUMES:									
2023						40	40		
						v	^		
				0	<	IN =	90	<	10
				0	>	OUT =	90	>	0
						v	^		
						50	40		
BALANCED YEAR 2023 VOLUMES:									
2023						40	40		
						v	^		
				0	<	IN =	90	<	10
				0	>	OUT =	90	>	0
						v	^		
						50	40		
ADT BY LEG:									
2040						1,500			
						N			
				0	W	LEG	E		100
						S			
						1,500			
ADT BY LEG:									
2023						600			
						N			
				0	W	LEG	E		100
						S			
						700			

EVENING PEAK HOUR

ADJUSTED GROWTH (PCEs):	2016	TO	2040						
10 MINIMUM GROWTH %						20	50		
						v	^		
				0	<	IN =	70	<	0
				0	>	OUT =	70	>	0
						v	^		
						20	50		
PRORATED GROWTH (PCEs):	2021	TO	2040						
19 YEARS						20	40		
						v	^		
				0	<			<	0
				0	>			>	0
						v	^		
						20	40		
NEW PROJECTED VOLUMES (PCEs):	2040								
						50	70		
						v	^		
				0	<			<	0
				0	>			>	0
						v	^		
						50	70		
YEAR 2023 GROWTH:	2021	TO	2023						
2 YEARS						0	0		
						v	^		
				0	<			<	0
				0	>			>	0
						v	^		
						0	0		
INITIAL YEAR 2023 VOLUMES:									
2023						30	30		
						v	^		
				0	<	IN =	60	<	0
				0	>	OUT =	60	>	0
						v	^		
						30	30		
BALANCED YEAR 2023 VOLUMES:									
2023						30	30		
						v	^		
				0	<	IN =	60	<	0
				0	>	OUT =	60	>	0
						v	^		
						30	30		
ADT BY LEG:									
2040						1,500			
						N			
				0	W	LEG	E		100
						S			
						1,500			
ADT BY LEG:									
2023						600			
						N			
				0	W	LEG	E		100
						S			
						700			

2nd Street (NS) / San Rosen Center (EW) - #5

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR INPUT DATA					EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**0**	SOUTH LEG		NORTH	LEFT	**0**	SOUTH LEG	
BOUND	THRU	**42**	IN ...	**40**	BOUND	THRU	**28**	IN ...	**70**
	RIGHT	**1**	OUT ...	**80**		RIGHT	**2**	OUT ...	**50**
SOUTH	LEFT	**2**	NORTH LEG		SOUTH	LEFT	**1**	NORTH LEG	
BOUND	THRU	**41**	IN ...	**70**	BOUND	THRU	**25**	IN ...	**50**
	RIGHT	**0**	OUT ...	**40**		RIGHT	**0**	OUT ...	**70**
EAST	LEFT	**0**	WEST LEG		EAST	LEFT	**0**	WEST LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**
WEST	LEFT	**5**	EAST LEG		WEST	LEFT	**4**	EAST LEG	
BOUND	THRU	**0**	IN ...	**10**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**

YEAR 2040 TRAFFIC CONDITIONS									
MORNING PEAK HOUR RESULTS					EVENING PEAK HOUR RESULTS				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**0**	**0**	NORTH LEG	NORTH	LEFT	**0**	**0**	NORTH LEG
BOUND	THRU	**42**	**46**	RATIO **7.9%**	BOUND	THRU	**28**	**70**	RATIO **8.1%**
	RIGHT	**1**	**1**	ADT 1,500		RIGHT	**2**	**2**	ADT 1,500
SOUTH	LEFT	**2**	**2**	SOUTH LEG	SOUTH	LEFT	**1**	**1**	SOUTH LEG
BOUND	THRU	**41**	**70**	RATIO **8.5%**	BOUND	THRU	**25**	**50**	RATIO **8.4%**
	RIGHT	**0**	**0**	ADT 1,500		RIGHT	**0**	**0**	ADT 1,500
EAST	LEFT	**0**	**0**	EAST LEG	EAST	LEFT	**0**	**0**	EAST LEG
BOUND	THRU	**0**	**0**	RATIO **13.0%**	BOUND	THRU	**0**	**0**	RATIO **7.0%**
	RIGHT	**0**	**0**	ADT 100		RIGHT	**0**	**0**	ADT 100
WEST	LEFT	**5**	**10**	WEST LEG	WEST	LEFT	**4**	**4**	WEST LEG
BOUND	THRU	**0**	**0**	RATIO **-**	BOUND	THRU	**0**	**0**	RATIO **-**
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0

APPENDIX G

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING

Fallbrook Meadows Residential Project

Vistro File: G:\...\AM.vistro
Report File: G:\...\AME.pdf

Scenario 1 Existing
8/11/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	WB Thru	0.656	27.1	C
2	3rd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	WB Thru	0.937	29.7	D
3	2nd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	WB Thru	0.751	17.5	C
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.000	10.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	76	18	20	103	149	86	223	5	23	380	24
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	129	30	34	174	252	145	377	8	39	643	41
Peak Hour Factor	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	35	8	9	47	68	39	101	2	10	173	11
Total Analysis Volume [veh/h]	18	139	32	37	187	271	156	405	9	42	690	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	34	34	48	39	39	48	37	37
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.53	0.43	0.43	0.53	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.02	0.03	0.10	0.18	0.17	0.23	0.01	0.04	0.38	0.03
s, saturation flow rate [veh/h]	1215	1800	1530	1270	1800	1530	943	1800	1530	1095	1800	1530
c, Capacity [veh/h]	439	689	585	480	689	585	329	779	662	522	733	623
d1, Uniform Delay [s]	22.66	18.59	17.52	21.73	19.14	20.85	18.66	18.68	14.56	11.72	25.64	16.28
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.30	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.66	0.18	0.31	0.97	2.62	1.06	0.54	0.01	0.07	15.14	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.20	0.05	0.08	0.27	0.46	0.47	0.52	0.01	0.08	0.94	0.07
d, Delay for Lane Group [s/veh]	22.83	19.25	17.70	22.04	20.12	23.47	19.72	19.22	14.57	11.78	40.78	16.32
Lane Group LOS	C	B	B	C	C	C	B	B	B	B	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.29	2.05	0.45	0.58	2.76	4.49	1.59	5.90	0.10	0.38	16.18	0.54
50th-Percentile Queue Length [ft/ln]	7.36	51.28	11.16	14.39	68.95	112.14	39.65	147.42	2.54	9.58	404.39	13.46
95th-Percentile Queue Length [veh/ln]	0.53	3.69	0.80	1.04	4.96	7.96	2.85	9.88	0.18	0.69	22.77	0.97
95th-Percentile Queue Length [ft/ln]	13.25	92.30	20.09	25.90	124.11	198.98	71.37	246.98	4.57	17.24	569.29	24.22

Movement, Approach, & Intersection Results

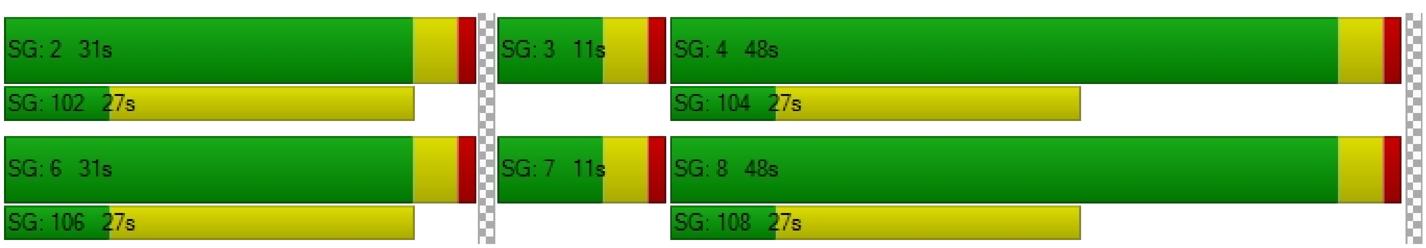
d_M, Delay for Movement [s/veh]	22.83	19.25	17.70	22.04	20.12	23.47	19.72	19.22	14.57	11.78	40.78	16.32
Movement LOS	C	B	B	C	C	C	B	B	B	B	D	B
d_A, Approach Delay [s/veh]	19.33			22.10			19.28			37.82		
Approach LOS	B			C			B			D		
d_I, Intersection Delay [s/veh]	27.06											
Intersection LOS	C											
Intersection V/C	0.656											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.245	2.463	2.597	2.539
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	1.871	2.376	2.500	2.840
Bicycle LOS	A	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	22	34	14	8	36	53	30	176	14	15	316	7
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	57	24	14	61	90	51	298	24	25	534	12
Peak Hour Factor	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	15	6	4	16	23	13	78	6	7	139	3
Total Analysis Volume [veh/h]	39	59	25	15	64	94	53	311	25	26	557	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	494	466	522	601	637
Degree of Utilization, x	0.25	0.17	0.18	0.65	0.94

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.97	0.60	0.65	4.68	12.64
95th-Percentile Queue Length [ft]	24.34	15.10	16.28	116.90	316.00
Approach Delay [s/veh]	12.68	11.51		19.30	45.27
Approach LOS	B	B		C	E
Intersection Delay [s/veh]	29.69				
Intersection LOS	D				

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	6	1	1	7	39	35	154	11	3	273	4
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	10	2	2	12	66	59	260	19	5	462	7
Peak Hour Factor	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	1	3	18	16	72	5	1	127	2
Total Analysis Volume [veh/h]	19	11	2	2	13	73	65	287	21	6	509	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	562	634	659	772	685	792
Degree of Utilization, x	0.06	0.14	0.53	0.03	0.75	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	0.48	3.18	0.08	6.85	0.03
95th-Percentile Queue Length [ft]	4.51	12.01	79.48	2.10	171.36	0.76
Approach Delay [s/veh]	9.79	9.59	13.88		21.81	
Approach LOS	A	A	B		C	
Intersection Delay [s/veh]	17.46					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	42	1	2	41	0	0	0	0	5	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	71	2	3	69	0	0	0	0	8	0	0
Peak Hour Factor	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	29	1	1	28	0	0	0	0	3	0	0
Total Analysis Volume [veh/h]	0	115	3	5	112	0	0	0	0	13	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	7.44	0.00	0.00	10.01	10.43	8.80	10.11	10.52	8.92
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.15	0.15	0.15	0.00	0.00	0.00	1.38	1.38	1.38
d_A, Approach Delay [s/veh]	0.00			0.32			9.75			10.11		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.68											
Intersection LOS	B											

Fallbrook Meadows Residential Project

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Report File: G:\...\PME.pdf

Scenario 1 Existing
8/11/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	EB Thru	0.435	23.3	C
2	3rd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	EB Thru	0.745	17.0	C
3	2nd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	EB Thru	0.591	12.6	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.000	9.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	13	165	45	34	170	158	160	353	27	29	246	30
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	205	56	42	211	196	198	438	33	36	305	37
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	54	15	11	55	52	52	115	9	9	80	10
Total Analysis Volume [veh/h]	17	216	59	44	222	206	208	461	35	38	321	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	48	48	48	48	34	26	26	34	23	23
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.53	0.53	0.38	0.29	0.29	0.38	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.04	0.04	0.12	0.13	0.17	0.26	0.02	0.03	0.18	0.03
s, saturation flow rate [veh/h]	1177	1800	1530	1184	1800	1530	1245	1800	1530	1090	1800	1530
c, Capacity [veh/h]	596	956	813	601	956	813	420	516	438	301	462	393
d1, Uniform Delay [s]	14.41	11.24	10.29	14.64	11.28	11.43	21.12	30.81	23.45	20.51	30.27	25.53
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.09	0.55	0.17	0.24	0.57	0.75	0.91	5.67	0.08	0.19	1.89	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.23	0.07	0.07	0.23	0.25	0.50	0.89	0.08	0.13	0.69	0.10
d, Delay for Lane Group [s/veh]	14.49	11.79	10.46	14.87	11.85	12.18	22.03	36.48	23.53	20.70	32.16	25.64
Lane Group LOS	B	B	B	B	B	B	C	D	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.21	2.37	0.59	0.54	2.33	2.21	3.04	9.94	0.54	0.50	6.29	0.63
50th-Percentile Queue Length [ft/ln]	5.27	59.14	14.85	13.40	58.17	55.37	76.12	248.59	13.43	12.45	157.28	15.79
95th-Percentile Queue Length [veh/ln]	0.38	4.26	1.07	0.96	4.19	3.99	5.48	15.12	0.97	0.90	10.40	1.14
95th-Percentile Queue Length [ft/ln]	9.48	106.46	26.74	24.11	104.70	99.66	137.01	377.88	24.17	22.41	260.12	28.42

Movement, Approach, & Intersection Results

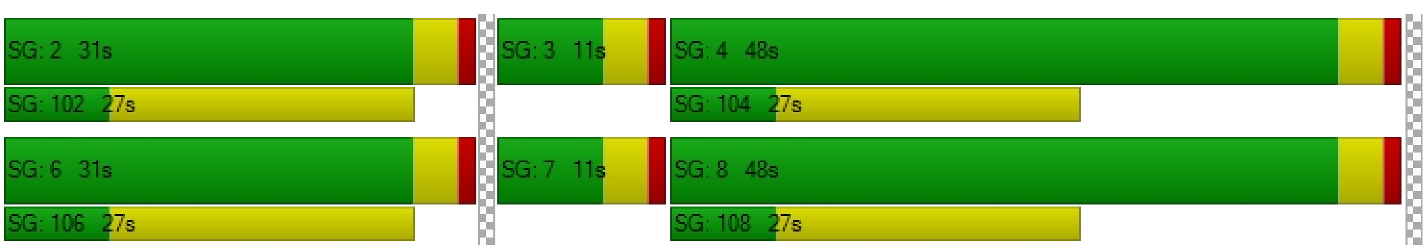
d_M, Delay for Movement [s/veh]	14.49	11.79	10.46	14.87	11.85	12.18	22.03	36.48	23.53	20.70	32.16	25.64
Movement LOS	B	B	B	B	B	B	C	D	C	C	C	C
d_A, Approach Delay [s/veh]	11.68			12.28			31.57			30.43		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.33											
Intersection LOS	C											
Intersection V/C	0.435											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.267	2.479	2.510	2.467
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	2.041	2.338	2.721	2.216
Bicycle LOS	B	B	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.745

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	16	44	18	11	62	59	52	284	24	20	206	6
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	55	22	14	77	73	64	352	30	25	255	7
Peak Hour Factor	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	15	6	4	22	20	18	98	8	7	71	2
Total Analysis Volume [veh/h]	22	62	25	16	86	82	72	394	34	28	285	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	545	511	576	671	637
Degree of Utilization, x	0.20	0.20	0.14	0.74	0.50

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.74	0.74	0.49	6.68	2.84
95th-Percentile Queue Length [ft]	18.50	18.43	12.34	166.90	70.95
Approach Delay [s/veh]	11.25	10.82		22.32	14.23
Approach LOS	B	B		C	B
Intersection Delay [s/veh]	17.01				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	9	10	5	1	8	14	24	275	19	4	188	1
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	12	6	1	10	17	30	341	24	5	233	1
Peak Hour Factor	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	3	2	0	3	5	9	98	7	1	67	0
Total Analysis Volume [veh/h]	13	14	7	1	12	20	35	394	28	6	269	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	639	675	725	853	710	826
Degree of Utilization, x	0.05	0.05	0.59	0.03	0.39	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.17	0.15	3.93	0.10	1.84	0.00
95th-Percentile Queue Length [ft]	4.21	3.85	98.16	2.54	45.90	0.09
Approach Delay [s/veh]	8.95	8.60	14.13		10.93	
Approach LOS	A	A	B		B	
Intersection Delay [s/veh]	12.58					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	28	2	1	25	0	0	0	0	4	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	35	2	1	31	0	0	0	0	5	0	0
Peak Hour Factor	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	1	0	9	0	0	0	0	2	0	0
Total Analysis Volume [veh/h]	0	42	2	1	37	0	0	0	0	6	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	7.28	0.00	0.00	8.96	9.44	8.46	8.98	9.46	8.51
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.00			0.19			8.95			8.98		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	A											

EXISTING (2021) PLUS PROJECT

Fallbrook Meadows Residential Project

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Report File: G:\...\AMEp.pdf

Scenario 2 Existing Plus Project

8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	WB Thru	0.673	27.6	C
2	3rd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	WB Thru	0.988	35.7	E
3	2nd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	WB Thru	0.772	18.5	C
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.048	10.2	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.673

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	76	18	20	103	149	86	223	5	23	380	24
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	1	0	0	0	8	0	7	29	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	129	32	35	174	252	145	385	8	46	672	44
Peak Hour Factor	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	35	9	9	47	68	39	103	2	12	180	12
Total Analysis Volume [veh/h]	18	139	34	38	187	271	156	413	9	49	721	47
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	33	49	40	40	49	38	38
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.37	0.37	0.54	0.45	0.45	0.54	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.02	0.03	0.10	0.18	0.17	0.23	0.01	0.04	0.40	0.03
s, saturation flow rate [veh/h]	1215	1800	1530	1270	1800	1530	920	1800	1530	1092	1800	1530
c, Capacity [veh/h]	424	660	561	464	660	561	325	800	680	531	762	647
d1, Uniform Delay [s]	23.50	19.55	18.45	22.56	20.13	21.93	18.68	18.04	13.98	11.21	24.99	15.45
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.33	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.73	0.21	0.35	1.07	2.96	1.10	0.52	0.01	0.07	16.43	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.21	0.06	0.08	0.28	0.48	0.48	0.52	0.01	0.09	0.95	0.07
d, Delay for Lane Group [s/veh]	23.68	20.28	18.66	22.90	21.21	24.88	19.78	18.56	13.99	11.29	41.42	15.50
Lane Group LOS	C	C	B	C	C	C	B	B	B	B	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.30	2.12	0.49	0.61	2.85	4.65	1.52	5.88	0.10	0.43	17.06	0.56
50th-Percentile Queue Length [ft/ln]	7.54	52.97	12.27	15.15	71.34	116.34	37.98	147.12	2.47	10.71	426.55	13.90
95th-Percentile Queue Length [veh/ln]	0.54	3.81	0.88	1.09	5.14	8.19	2.73	9.86	0.18	0.77	23.84	1.00
95th-Percentile Queue Length [ft/ln]	13.56	95.35	22.08	27.27	128.41	204.79	68.36	246.58	4.45	19.27	595.91	25.03

Movement, Approach, & Intersection Results

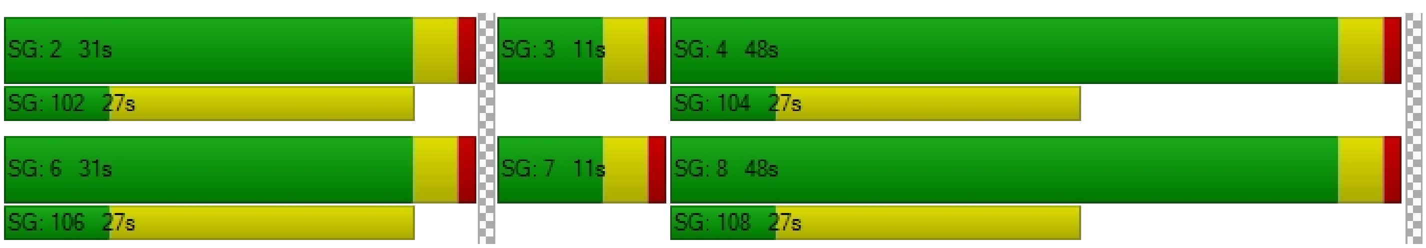
d_M, Delay for Movement [s/veh]	23.68	20.28	18.66	22.90	21.21	24.88	19.78	18.56	13.99	11.29	41.42	15.50
Movement LOS	C	C	B	C	C	C	B	B	B	B	D	B
d_A, Approach Delay [s/veh]	20.31			23.35			18.82			38.12		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	27.61											
Intersection LOS	C											
Intersection V/C	0.673											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.252	2.468	2.608	2.555
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	1.875	2.378	2.513	2.908
Bicycle LOS	A	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	35.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.988

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	22	34	14	8	36	53	30	176	14	15	316	7
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	0	3	29	8	3	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	58	24	14	64	119	59	301	24	25	544	12
Peak Hour Factor	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	15	6	4	17	31	15	78	6	7	142	3
Total Analysis Volume [veh/h]	39	60	25	15	67	124	62	314	25	26	567	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	475	456	509	579	614
Degree of Utilization, x	0.26	0.18	0.24	0.69	0.99

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.04	0.65	0.95	5.45	14.61
95th-Percentile Queue Length [ft]	25.93	16.20	23.69	136.29	365.29
Approach Delay [s/veh]	13.25	12.14		22.13	57.25
Approach LOS	B	B		C	F
Intersection Delay [s/veh]	35.69				
Intersection LOS	E				

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			⊣ ⌐			⊣ ⌐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	6	1	1	7	39	35	154	11	3	273	4
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	14	3	10	3	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	11	2	16	15	76	62	260	19	5	462	11
Peak Hour Factor	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	4	4	21	17	72	5	1	127	3
Total Analysis Volume [veh/h]	19	12	2	18	17	84	68	287	21	6	509	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	549	616	639	746	666	768
Degree of Utilization, x	0.06	0.19	0.56	0.03	0.77	0.02

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.71	3.42	0.09	7.34	0.05
95th-Percentile Queue Length [ft]	4.79	17.77	85.45	2.17	183.54	1.19
Approach Delay [s/veh]	9.98	10.24	14.72		23.59	
Approach LOS	A	B	B		C	
Intersection Delay [s/veh]	18.50					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	71	0	0	65	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	1	0	32	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	9	1	110	32	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	2	0	30	9	1
Total Analysis Volume [veh/h]	130	10	1	120	35	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.47	0.00	10.15	9.17
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.05	0.05	4.01	4.01
d_A, Approach Delay [s/veh]	0.00		0.06		10.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.31					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	42	1	2	41	0	0	0	0	5	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	2	7	0	27	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	71	2	3	69	2	7	0	27	8	0	0
Peak Hour Factor	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	29	1	1	28	1	3	0	11	3	0	0
Total Analysis Volume [veh/h]	13	115	3	5	112	3	11	0	44	13	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.44	0.00	0.00	7.44	0.00	0.00	10.54	10.96	9.08	10.83	10.80	8.95
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.01	0.01	0.01	0.20	0.20	0.20	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.41	0.41	0.41	0.15	0.15	0.15	5.00	5.00	5.00	1.58	1.58	1.58
d_A, Approach Delay [s/veh]	0.74			0.31			9.38			10.83		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	2.48											
Intersection LOS	B											

Fallbrook Meadows Residential Project

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Scenario 2 Existing Plus Project

8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	EB Thru	0.454	23.4	C
2	3rd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	EB Thru	0.833	21.0	C
3	2nd St (NS) at County Line Rd (EW)	All-way stop	HCM 6th Edition	EB Thru	0.619	13.1	B
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.026	10.3	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	10.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	13	165	45	34	170	158	160	353	27	29	246	30
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	3	0	0	0	28	0	4	15	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	205	63	45	211	196	198	466	33	40	320	39
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	54	17	12	55	52	52	123	9	11	84	10
Total Analysis Volume [veh/h]	17	216	66	47	222	206	208	490	35	42	336	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	46	46	46	46	46	46	36	27	27	36	25	25
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.51	0.51	0.40	0.30	0.30	0.40	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.04	0.04	0.12	0.13	0.17	0.27	0.02	0.04	0.19	0.03
s, saturation flow rate [veh/h]	1177	1800	1530	1184	1800	1530	1226	1800	1530	1068	1800	1530
c, Capacity [veh/h]	571	922	784	577	922	784	432	545	463	304	496	422
d1, Uniform Delay [s]	15.51	12.16	11.19	15.80	12.21	12.37	20.04	30.09	22.41	19.88	29.05	24.28
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.60	0.21	0.28	0.62	0.82	0.83	5.99	0.07	0.20	1.63	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.23	0.08	0.08	0.24	0.26	0.48	0.90	0.08	0.14	0.68	0.10
d, Delay for Lane Group [s/veh]	15.61	12.76	11.40	16.08	12.83	13.18	20.88	36.09	22.48	20.08	30.68	24.38
Lane Group LOS	B	B	B	B	B	B	C	D	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.22	2.49	0.70	0.60	2.45	2.34	2.93	10.56	0.52	0.53	6.43	0.64
50th-Percentile Queue Length [ft/ln]	5.51	62.22	17.56	15.04	61.34	58.39	73.17	263.92	13.06	13.29	160.64	16.10
95th-Percentile Queue Length [veh/ln]	0.40	4.48	1.26	1.08	4.42	4.20	5.27	15.89	0.94	0.96	10.58	1.16
95th-Percentile Queue Length [ft/ln]	9.92	111.99	31.61	27.08	110.41	105.10	131.71	397.14	23.50	23.92	264.57	28.98

Movement, Approach, & Intersection Results

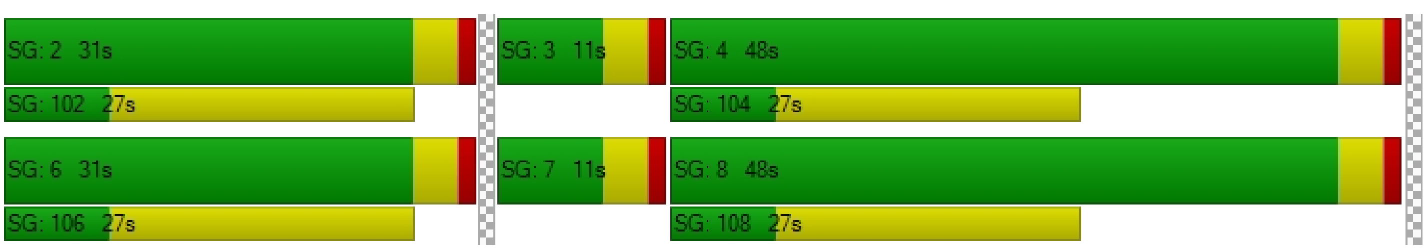
d_M, Delay for Movement [s/veh]	15.61	12.76	11.40	16.08	12.83	13.18	20.88	36.09	22.48	20.08	30.68	24.38
Movement LOS	B	B	B	B	B	B	C	D	C	C	C	C
d_A, Approach Delay [s/veh]	12.62			13.30			31.12			29.00		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.39											
Intersection LOS	C											
Intersection V/C	0.454											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.271	2.486	2.522	2.488
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	2.053	2.343	2.769	2.251
Bicycle LOS	B	B	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	16	44	18	11	62	59	52	284	24	20	206	6
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	2	15	28	10	0	0	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	58	22	14	79	88	92	362	30	25	261	7
Peak Hour Factor	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	16	6	4	22	25	26	101	8	7	73	2
Total Analysis Volume [veh/h]	22	65	25	16	88	98	103	405	34	28	292	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	521	494	555	650	613
Degree of Utilization, x	0.22	0.21	0.18	0.83	0.54

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.81	0.79	0.64	8.99	3.18
95th-Percentile Queue Length [ft]	20.25	19.68	15.92	224.86	79.38
Approach Delay [s/veh]	11.81	11.27		29.97	15.45
Approach LOS	B	B		D	C
Intersection Delay [s/veh]	21.04				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	9	10	5	1	8	14	24	275	19	4	188	1
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	8	2	6	10	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	15	6	9	12	23	40	341	24	5	233	15
Peak Hour Factor	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	2	3	3	7	12	98	7	1	67	4
Total Analysis Volume [veh/h]	13	17	7	10	14	27	46	394	28	6	269	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	629	660	711	835	697	808
Degree of Utilization, x	0.06	0.08	0.62	0.03	0.39	0.02

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.19	0.25	4.32	0.10	1.89	0.06
95th-Percentile Queue Length [ft]	4.68	6.27	108.07	2.60	47.24	1.61
Approach Delay [s/veh]	9.08	8.92	15.13		10.97	
Approach LOS	A	A	C		B	
Intersection Delay [s/veh]	13.06					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	102	0	0	106	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	3	0	17	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	31	3	131	17	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	8	1	36	5	1
Total Analysis Volume [veh/h]	137	34	3	142	18	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.54	0.00	10.35	9.16
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.16	0.16	2.18	2.18
d_A, Approach Delay [s/veh]	0.00		0.16		10.23	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.68					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	28	2	1	25	0	0	0	0	4	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	0	0	0	7	4	0	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	35	2	1	31	7	4	0	16	5	0	0
Peak Hour Factor	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	11	1	0	9	2	1	0	5	2	0	0
Total Analysis Volume [veh/h]	32	42	2	1	37	8	5	0	19	6	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.28	0.00	0.00	9.54	10.04	8.57	9.63	10.00	8.52
Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.08	0.08	0.08	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.31	1.31	1.31	0.05	0.05	0.05	1.88	1.88	1.88	0.58	0.58	0.58
d_A, Approach Delay [s/veh]	3.09			0.16			8.77			9.63		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.36											
Intersection LOS	B											

OPENING YEAR (2023) WITHOUT PROJECT

Fallbrook Meadows Residential Project

Vistro File: G:\...\AM.vistro
Scenario 3 Opening Year Without Project
Report File: G:\...\AMOY.pdf
8/11/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	WB Thru	0.757	30.1	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		8.8	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		6.9	A
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.000	10.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	76	18	20	103	149	86	223	5	23	380	24
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	1	6	4	2	14	13	79	12	13	116	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	134	37	39	181	274	162	467	20	53	778	48
Peak Hour Factor	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	36	10	10	49	74	43	125	5	14	209	13
Total Analysis Volume [veh/h]	33	144	40	42	194	294	174	501	21	57	835	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	54	45	45	54	43	43
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.31	0.31	0.60	0.50	0.50	0.60	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.03	0.03	0.11	0.19	0.21	0.28	0.01	0.06	0.46	0.03
s, saturation flow rate [veh/h]	1208	1800	1530	1264	1800	1530	841	1800	1530	1020	1800	1530
c, Capacity [veh/h]	342	561	477	383	561	477	315	893	759	538	861	732
d1, Uniform Delay [s]	28.37	23.18	21.90	26.91	23.90	26.40	19.01	15.85	11.60	9.59	22.86	12.69
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.17	0.13	0.11	0.11	0.43	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	1.10	0.35	0.58	1.69	5.87	2.39	0.66	0.01	0.09	21.98	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.26	0.08	0.11	0.35	0.62	0.55	0.56	0.03	0.11	0.97	0.07
d, Delay for Lane Group [s/veh]	28.93	24.28	22.24	27.49	25.59	32.27	21.40	16.51	11.61	9.67	44.84	12.73
Lane Group LOS	C	C	C	C	C	C	C	B	B	A	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.63	2.45	0.64	0.75	3.33	5.92	1.54	6.74	0.20	0.42	20.70	0.54
50th-Percentile Queue Length [ft/ln]	15.70	61.31	16.10	18.82	83.31	147.88	38.57	168.50	5.12	10.47	517.48	13.55
95th-Percentile Queue Length [veh/ln]	1.13	4.41	1.16	1.36	6.00	9.90	2.78	11.00	0.37	0.75	28.16	0.98
95th-Percentile Queue Length [ft/ln]	28.26	110.36	28.99	33.88	149.95	247.59	69.42	274.94	9.22	18.84	704.02	24.39

Movement, Approach, & Intersection Results

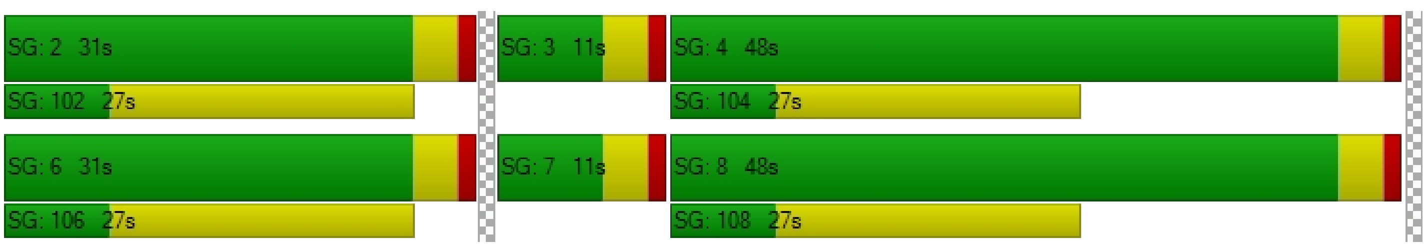
d_M, Delay for Movement [s/veh]	28.93	24.28	22.24	27.49	25.59	32.27	21.40	16.51	11.61	9.67	44.84	12.73
Movement LOS	C	C	C	C	C	C	C	B	B	A	D	B
d_A, Approach Delay [s/veh]	24.61			29.44			17.58			40.94		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	30.09											
Intersection LOS	C											
Intersection V/C	0.757											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.272	2.511	2.706	2.625
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	1.918	2.434	2.708	3.117
Bicycle LOS	A	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	22	34	14	8	36	53	30	176	14	15	316	7
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	1	1	4	2	19	13	51	12	1	61	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	60	26	18	65	112	66	358	37	27	611	14
Peak Hour Factor	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	16	7	5	17	29	17	93	10	7	159	4
Total Analysis Volume [veh/h]	53	63	27	19	68	117	69	373	39	28	637	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	461			718			115			185		
Exiting Flow Rate [veh/h]	135			147			807			419		
Demand Flow Rate [veh/h]	51	60	26	18	65	112	66	358	37	27	611	14
Adjusted Demand Flow Rate [veh/h]	53	63	27	19	68	117	69	373	39	28	637	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	143	204	481	680
Capacity of Entry and Bypass Lanes [veh/h]	863	664	1228	1143
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	863	664	1228	1143
X, volume / capacity	0.17	0.31	0.39	0.60

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	B
95th-Percentile Queue Length [veh]	0.59	1.30	1.90	4.12
95th-Percentile Queue Length [ft]	14.81	32.56	47.38	102.90
Approach Delay [s/veh]	5.83	9.35	6.77	10.64
Approach LOS	A	A	A	B
Intersection Delay [s/veh]	8.78			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	6.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┼			┼			┼			┼		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	6	1	1	7	39	35	154	11	3	273	4
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	56	0	0	64	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	10	2	2	12	68	61	324	20	5	540	7
Peak Hour Factor	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	1	3	19	17	89	6	1	149	2
Total Analysis Volume [veh/h]	20	11	2	2	13	75	67	357	22	6	595	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	426			621			21			98		
Exiting Flow Rate [veh/h]	41			86			690			361		
Demand Flow Rate [veh/h]	18	10	2	2	12	68	61	324	20	5	540	7
Adjusted Demand Flow Rate [veh/h]	20	11	2	2	13	75	67	357	22	6	595	8

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	33	90	446	609
Capacity of Entry and Bypass Lanes [veh/h]	894	733	1351	1249
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	894	733	1351	1249
X, volume / capacity	0.04	0.12	0.33	0.49

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.42	1.46	2.76
95th-Percentile Queue Length [ft]	2.87	10.45	36.50	69.02
Approach Delay [s/veh]	4.37	6.22	5.62	8.03
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.88			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✢			✢			✢			✢		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	42	1	2	41	0	0	0	0	5	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	73	2	3	71	0	0	0	0	8	0	0
Peak Hour Factor	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	1	1	29	0	0	0	0	3	0	0
Total Analysis Volume [veh/h]	0	119	3	5	115	0	0	0	0	13	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	7.44	0.00	0.00	10.07	10.48	8.82	10.16	10.57	8.94
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.15	0.15	0.15	0.00	0.00	0.00	1.40	1.40	1.40
d_A, Approach Delay [s/veh]	0.00			0.31			9.79			10.16		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.66											
Intersection LOS	B											

Fallbrook Meadows Residential Project

Vistro File: G:\...\PM.vistro
Scenario 3 Opening Year Without Project

Report File: G:\...\PMOY.pdf
8/11/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	EB Thru	0.520	24.5	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		7.4	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		5.7	A
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.000	9.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	13	165	45	34	170	158	160	353	27	29	246	30
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	2	12	4	2	11	11	101	10	7	80	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	213	70	47	219	213	215	552	44	44	394	41
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	56	18	12	58	56	57	145	12	12	104	11
Total Analysis Volume [veh/h]	27	224	74	49	230	224	226	580	46	46	414	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	41	41	41	41	41	41	41	32	32	41	30	30
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.46	0.46	0.45	0.35	0.35	0.45	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.05	0.04	0.13	0.15	0.20	0.32	0.03	0.05	0.23	0.03
s, saturation flow rate [veh/h]	1169	1800	1530	1175	1800	1530	1150	1800	1530	994	1800	1530
c, Capacity [veh/h]	497	828	704	502	828	704	437	635	539	305	591	502
d1, Uniform Delay [s]	19.07	15.00	13.80	19.30	15.06	15.39	18.00	27.85	19.46	18.49	26.40	20.91
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.19	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.80	0.30	0.39	0.83	1.19	1.31	9.25	0.07	0.23	1.53	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.27	0.11	0.10	0.28	0.32	0.52	0.91	0.09	0.15	0.70	0.09
d, Delay for Lane Group [s/veh]	19.28	15.80	14.10	19.69	15.89	16.58	19.31	37.10	19.53	18.71	27.92	20.99
Lane Group LOS	B	B	B	B	B	B	B	D	B	B	C	C
Critical Lane Group	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.40	2.96	0.90	0.71	2.93	2.96	2.93	12.83	0.63	0.52	7.61	0.62
50th-Percentile Queue Length [ft/ln]	9.99	73.91	22.53	17.84	73.22	73.91	73.14	320.65	15.76	13.04	190.36	15.40
95th-Percentile Queue Length [veh/ln]	0.72	5.32	1.62	1.28	5.27	5.32	5.27	18.70	1.13	0.94	12.14	1.11
95th-Percentile Queue Length [ft/ln]	17.97	133.03	40.55	32.12	131.80	133.04	131.65	467.48	28.37	23.47	303.49	27.72

Movement, Approach, & Intersection Results

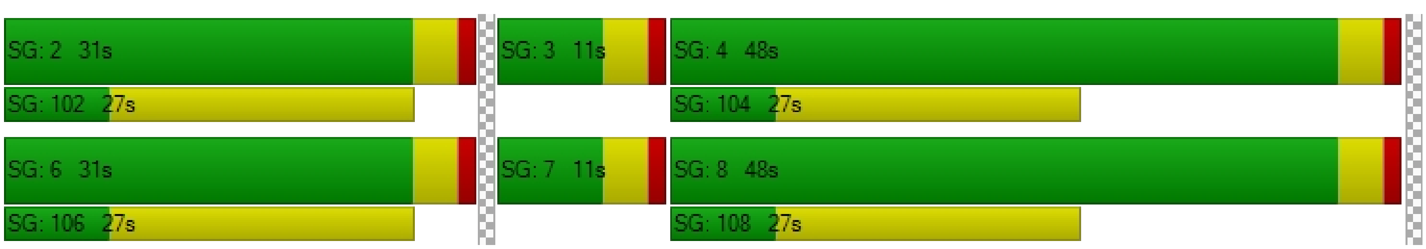
d_M, Delay for Movement [s/veh]	19.28	15.80	14.10	19.69	15.89	16.58	19.31	37.10	19.53	18.71	27.92	20.99
Movement LOS	B	B	B	B	B	B	B	D	B	B	C	C
d_A, Approach Delay [s/veh]	15.71			16.57			31.43			26.49		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	24.53											
Intersection LOS	C											
Intersection V/C	0.520											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.287	2.526	2.600	2.543
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	2.096	2.390	2.965	2.390
Bicycle LOS	B	B	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	16	44	18	11	62	59	52	284	24	20	206	6
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	2	1	3	1	14	16	50	10	1	43	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	59	24	17	80	89	82	413	41	27	306	11
Peak Hour Factor	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	17	7	5	22	25	23	116	11	8	86	3
Total Analysis Volume [veh/h]	35	66	27	19	90	100	92	462	46	30	342	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	573			407			139			193		
Exiting Flow Rate [veh/h]	166			170			477			508		
Demand Flow Rate [veh/h]	31	59	24	17	80	89	82	413	41	27	306	11
Adjusted Demand Flow Rate [veh/h]	35	66	27	19	90	100	92	462	46	30	342	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	128	209	600	384
Capacity of Entry and Bypass Lanes [veh/h]	770	912	1198	1134
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	770	912	1198	1134
X, volume / capacity	0.17	0.23	0.50	0.34

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.59	0.88	2.90	1.51
95th-Percentile Queue Length [ft]	14.86	22.10	72.49	37.82
Approach Delay [s/veh]	6.44	6.27	8.49	6.49
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.36			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	5.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	9	10	5	1	8	14	24	275	19	4	188	1
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	54	0	0	48	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	12	6	1	10	18	31	405	25	5	288	1
Peak Hour Factor	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	3	2	0	3	5	9	117	7	1	83	0
Total Analysis Volume [veh/h]	13	14	7	1	12	21	36	468	29	6	333	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	505			352			19			63		
Exiting Flow Rate [veh/h]	47			51			367			476		
Demand Flow Rate [veh/h]	11	12	6	1	10	18	31	405	25	5	288	1
Adjusted Demand Flow Rate [veh/h]	13	14	7	1	12	21	36	468	29	6	333	1

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	34	34	533	340
Capacity of Entry and Bypass Lanes [veh/h]	825	964	1354	1295
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	825	964	1354	1295
X, volume / capacity	0.04	0.04	0.39	0.26

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.11	1.91	1.06
95th-Percentile Queue Length [ft]	3.22	2.74	47.83	26.49
Approach Delay [s/veh]	4.76	4.05	6.35	5.08
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.75			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	28	2	1	25	0	0	0	0	4	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	36	2	1	32	0	0	0	0	5	0	0
Peak Hour Factor	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	1	0	10	0	0	0	0	2	0	0
Total Analysis Volume [veh/h]	0	43	2	1	38	0	0	0	0	6	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	7.29	0.00	0.00	8.97	9.45	8.46	8.99	9.47	8.52
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.00			0.19			8.96			8.99		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.68											
Intersection LOS	A											

OPENING YEAR (2023) WITH PROJECT

Fallbrook Meadows Residential Project

Vistro File: G:\...\AM.vistro

Scenario 4 Opening Year With Project

Report File: G:\...\AMOYp.pdf

8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	WB Thru	0.775	31.7	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		9.2	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		7.0	A
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.051	10.5	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	76	18	20	103	149	86	223	5	23	380	24
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	1	8	5	2	14	13	87	12	20	145	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	134	39	40	181	274	162	475	20	60	807	51
Peak Hour Factor	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314	0.9314
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	36	10	11	49	74	43	127	5	16	217	14
Total Analysis Volume [veh/h]	33	144	42	43	194	294	174	510	21	64	866	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27	27	27	27	55	45	45	55	44	44
g / C, Green / Cycle	0.30	0.30	0.30	0.30	0.30	0.30	0.61	0.50	0.50	0.61	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.03	0.03	0.11	0.19	0.21	0.28	0.01	0.06	0.48	0.04
s, saturation flow rate [veh/h]	1208	1800	1530	1264	1800	1530	822	1800	1530	1016	1800	1530
c, Capacity [veh/h]	322	543	462	363	543	462	309	905	769	553	879	747
d1, Uniform Delay [s]	29.59	23.85	22.56	28.08	24.60	27.16	19.18	15.52	11.27	9.15	22.72	12.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.18	0.14	0.11	0.11	0.45	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	1.19	0.39	0.67	1.83	6.58	2.70	0.70	0.01	0.09	25.59	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.27	0.09	0.12	0.36	0.64	0.56	0.56	0.03	0.12	0.99	0.07
d, Delay for Lane Group [s/veh]	30.23	25.04	22.95	28.75	26.43	33.74	21.89	16.22	11.29	9.24	48.31	12.27
Lane Group LOS	C	C	C	C	C	C	C	B	B	A	D	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.65	2.50	0.69	0.79	3.40	6.07	1.52	6.79	0.20	0.46	22.38	0.56
50th-Percentile Queue Length [ft/ln]	16.15	62.49	17.25	19.84	85.01	151.81	37.92	169.81	5.02	11.38	559.38	14.00
95th-Percentile Queue Length [veh/ln]	1.16	4.50	1.24	1.43	6.12	10.11	2.73	11.07	0.36	0.82	30.13	1.01
95th-Percentile Queue Length [ft/ln]	29.07	112.48	31.05	35.72	153.01	252.84	68.25	276.66	9.04	20.48	753.33	25.20

Movement, Approach, & Intersection Results

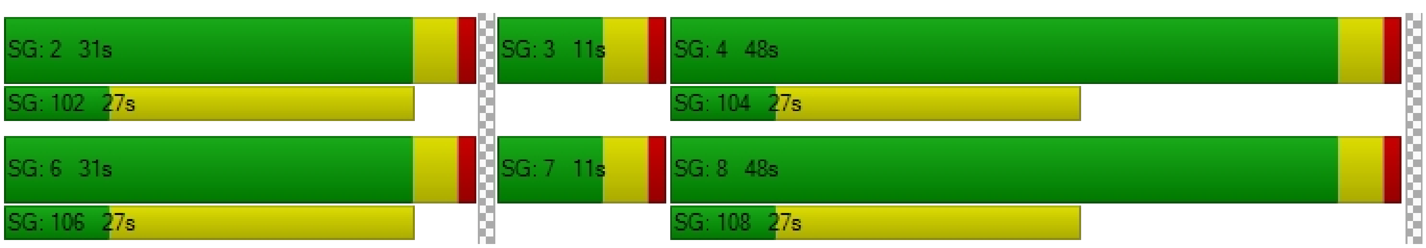
d_M, Delay for Movement [s/veh]	30.23	25.04	22.95	28.75	26.43	33.74	21.89	16.22	11.29	9.24	48.31	12.27
Movement LOS	C	C	C	C	C	C	C	B	B	A	D	B
d_A, Approach Delay [s/veh]	25.43			30.67			17.47			43.76		
Approach LOS	C			C			B			D		
d_I, Intersection Delay [s/veh]	31.67											
Intersection LOS	C											
Intersection V/C	0.775											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.280	2.514	2.717	2.641
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	1.921	2.436	2.723	3.185
Bicycle LOS	A	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┼			┼			┼			┼		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	22	34	14	8	36	53	30	176	14	15	316	7
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	2	1	4	5	48	21	54	12	1	71	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	61	26	18	68	141	74	361	37	27	621	14
Peak Hour Factor	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589	0.9589
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	16	7	5	18	37	19	94	10	7	162	4
Total Analysis Volume [veh/h]	53	64	27	19	71	147	77	376	39	28	648	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	472			729			118			194		
Exiting Flow Rate [veh/h]	138			156			848			422		
Demand Flow Rate [veh/h]	51	61	26	18	68	141	74	361	37	27	621	14
Adjusted Demand Flow Rate [veh/h]	53	64	27	19	71	147	77	376	39	28	648	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	144	237	492	691
Capacity of Entry and Bypass Lanes [veh/h]	853	657	1224	1133
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	853	657	1224	1133
X, volume / capacity	0.17	0.36	0.40	0.61

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	0.61	1.64	1.98	4.35
95th-Percentile Queue Length [ft]	15.14	41.12	49.38	108.86
Approach Delay [s/veh]	5.92	10.36	6.92	11.08
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	9.19			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	10	6	1	1	7	39	35	154	11	3	273	4
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	14	3	10	3	56	0	0	64	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	11	2	16	15	78	64	324	20	5	540	11
Peak Hour Factor	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072	0.9072
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	4	4	21	18	89	6	1	149	3
Total Analysis Volume [veh/h]	20	12	2	18	17	86	71	357	22	6	595	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	446			621			41			103		
Exiting Flow Rate [veh/h]	45			95			701			377		
Demand Flow Rate [veh/h]	18	11	2	16	15	78	64	324	20	5	540	11
Adjusted Demand Flow Rate [veh/h]	20	12	2	18	17	86	71	357	22	6	595	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	34	121	450	613
Capacity of Entry and Bypass Lanes [veh/h]	876	733	1324	1243
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	876	733	1324	1243
X, volume / capacity	0.04	0.17	0.34	0.49

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.12	0.59	1.52	2.82
95th-Percentile Queue Length [ft]	3.03	14.73	38.11	70.52
Approach Delay [s/veh]	4.47	6.71	5.81	8.15
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.04			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	71	0	0	65	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	9	1	24	32	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	9	1	137	32	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	2	0	37	9	1
Total Analysis Volume [veh/h]	152	10	1	149	35	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.52	0.00	10.53	9.32
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.05	0.05	4.29	4.29
d_A, Approach Delay [s/veh]	0.00		0.05		10.43	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	42	1	2	41	0	0	0	0	5	0	0
Base Volume Adjustment Factor	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910	1.6910
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	2	7	0	27	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	73	2	3	71	2	7	0	27	8	0	0
Peak Hour Factor	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149	0.6149
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	30	1	1	29	1	3	0	11	3	0	0
Total Analysis Volume [veh/h]	13	119	3	5	115	3	11	0	44	13	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.45	0.00	0.00	7.44	0.00	0.00	10.60	11.01	9.10	10.89	10.86	8.97
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.01	0.01	0.01	0.20	0.20	0.20	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.41	0.41	0.41	0.15	0.15	0.15	5.03	5.03	5.03	1.59	1.59	1.59
d_A, Approach Delay [s/veh]	0.72			0.30			9.40			10.89		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	2.43											
Intersection LOS	B											

Fallbrook Meadows Residential Project

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Scenario 4 Opening Year With Project
8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	EB Thru	0.539	24.8	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		7.9	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		5.9	A
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.028	10.7	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	10.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	13	165	45	34	170	158	160	353	27	29	246	30
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	2	19	7	2	11	11	129	10	11	95	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	213	77	50	219	213	215	580	44	48	409	43
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	56	20	13	58	56	57	152	12	13	108	11
Total Analysis Volume [veh/h]	27	224	81	53	230	224	226	610	46	50	430	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	31	0	0	31	0	11	48	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	42	33	33	42	31	31
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.44	0.47	0.37	0.37	0.47	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.05	0.05	0.13	0.15	0.20	0.34	0.03	0.05	0.24	0.03
s, saturation flow rate [veh/h]	1169	1800	1530	1175	1800	1530	1132	1800	1530	973	1800	1530
c, Capacity [veh/h]	474	794	675	479	794	675	447	664	564	306	624	530
d1, Uniform Delay [s]	20.24	16.05	14.84	20.56	16.11	16.46	17.14	27.14	18.50	18.15	25.25	19.80
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.16	0.22	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.89	0.36	0.47	0.92	1.32	1.28	10.39	0.06	0.25	1.37	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.28	0.12	0.11	0.29	0.33	0.51	0.92	0.08	0.16	0.69	0.08
d, Delay for Lane Group [s/veh]	20.47	16.93	15.20	21.02	17.03	17.78	18.42	37.53	18.56	18.40	26.62	19.87
Lane Group LOS	C	B	B	C	B	B	B	D	B	B	C	B
Critical Lane Group	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.41	3.09	1.03	0.81	3.06	3.09	2.80	13.61	0.61	0.54	7.71	0.62
50th-Percentile Queue Length [ft/ln]	10.36	77.15	25.86	20.13	76.57	77.32	70.12	340.29	15.27	13.61	192.81	15.59
95th-Percentile Queue Length [veh/ln]	0.75	5.55	1.86	1.45	5.51	5.57	5.05	19.66	1.10	0.98	12.27	1.12
95th-Percentile Queue Length [ft/ln]	18.65	138.87	46.54	36.23	137.82	139.18	126.21	491.55	27.49	24.50	306.67	28.06

Movement, Approach, & Intersection Results

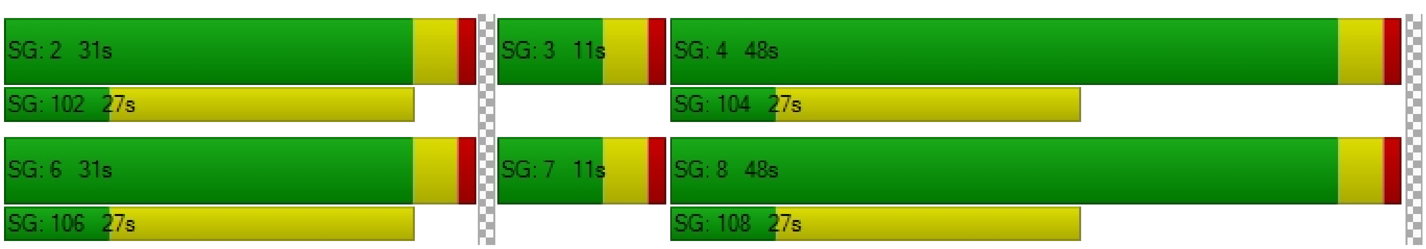
d_M, Delay for Movement [s/veh]	20.47	16.93	15.20	21.02	17.03	17.78	18.42	37.53	18.56	18.40	26.62	19.87
Movement LOS	C	B	B	C	B	B	B	D	B	B	C	B
d_A, Approach Delay [s/veh]	16.80			17.78			31.64			25.26		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	24.83											
Intersection LOS	C											
Intersection V/C	0.539											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.292	2.534	2.613	2.567
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	978	978
d_b, Bicycle Delay [s]	22.05	22.05	11.76	11.76
I_b,int, Bicycle LOS Score for Intersection	2.107	2.396	3.015	2.426
Bicycle LOS	B	B	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	16	44	18	11	62	59	52	284	24	20	206	6
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	5	1	3	3	29	44	60	10	1	49	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	62	24	17	82	104	110	423	41	27	312	11
Peak Hour Factor	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937	0.8937
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	17	7	5	23	29	31	118	11	8	87	3
Total Analysis Volume [veh/h]	35	69	27	19	92	116	123	473	46	30	349	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	615			414			141			227		
Exiting Flow Rate [veh/h]	168			204			500			519		
Demand Flow Rate [veh/h]	31	62	24	17	82	104	110	423	41	27	312	11
Adjusted Demand Flow Rate [veh/h]	35	69	27	19	92	116	123	473	46	30	349	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	131	227	642	391
Capacity of Entry and Bypass Lanes [veh/h]	737	905	1196	1095
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	737	905	1196	1095
X, volume / capacity	0.18	0.25	0.54	0.36

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.64	0.99	3.32	1.64
95th-Percentile Queue Length [ft]	16.08	24.83	83.06	40.91
Approach Delay [s/veh]	6.83	6.56	9.14	6.89
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.87			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	5.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	9	10	5	1	8	14	24	275	19	4	188	1
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	8	2	6	10	54	0	0	48	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	15	6	9	12	24	41	405	25	5	288	15
Peak Hour Factor	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660	0.8660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	2	3	3	7	12	117	7	1	83	4
Total Analysis Volume [veh/h]	13	17	7	10	14	28	47	468	29	6	333	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	525			352			30			77		
Exiting Flow Rate [veh/h]	49			81			374			485		
Demand Flow Rate [veh/h]	11	15	6	9	12	24	41	405	25	5	288	15
Adjusted Demand Flow Rate [veh/h]	13	17	7	10	14	28	47	468	29	6	333	17

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	37	52	544	356
Capacity of Entry and Bypass Lanes [veh/h]	808	964	1339	1276
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	808	964	1339	1276
X, volume / capacity	0.05	0.05	0.41	0.28

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.17	2.01	1.15
95th-Percentile Queue Length [ft]	3.59	4.27	50.34	28.74
Approach Delay [s/veh]	4.90	4.22	6.55	5.31
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.92			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	102	0	0	106	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	31	3	17	17	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	31	3	152	17	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	8	1	41	5	1
Total Analysis Volume [veh/h]	164	34	3	165	18	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.60	0.00	10.72	9.32
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.16	0.16	2.32	2.32
d_A, Approach Delay [s/veh]	0.00		0.14		10.58	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	0	28	2	1	25	0	0	0	0	4	0	0
Base Volume Adjustment Factor	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400	1.2400
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	0	0	0	7	4	0	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	36	2	1	32	7	4	0	16	5	0	0
Peak Hour Factor	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333	0.8333
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	11	1	0	10	2	1	0	5	2	0	0
Total Analysis Volume [veh/h]	32	43	2	1	38	8	5	0	19	6	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.29	0.00	0.00	9.56	10.05	8.57	9.65	10.01	8.52
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.08	0.08	0.08	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.31	1.31	1.31	0.05	0.05	0.05	1.89	1.89	1.89	0.58	0.58	0.58
d_A, Approach Delay [s/veh]	3.05			0.16			8.78			9.65		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.32											
Intersection LOS	B											

YEAR 2040 WITHOUT PROJECT

Fallbrook Meadows Residential Project

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Report File: G:\...\AMLR.pdf

Scenario 1 Year 2040 Without Project
8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.743	31.7	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		10.0	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		7.0	A
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┐|┌			┐|┌			┐|┌			┐|┌		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	31	332	48	53	183	277	164	480	20	61	815	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	332	48	53	183	277	164	480	20	61	815	61
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	87	13	14	48	73	43	126	5	16	214	16
Total Analysis Volume [veh/h]	33	349	51	56	193	292	173	505	21	64	858	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	3	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	36	0	0	36	11	11	83	0	11	83	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	90	80	80	90	79	79
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.69	0.61	0.61	0.69	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.03	0.05	0.11	0.19	0.23	0.28	0.01	0.07	0.48	0.04
s, saturation flow rate [veh/h]	1209	1800	1530	1048	1800	1530	761	1800	1530	983	1800	1530
c, Capacity [veh/h]	226	443	377	108	443	377	369	1102	937	620	1092	928
d1, Uniform Delay [s]	49.29	45.77	38.17	61.84	41.32	45.59	18.67	13.58	9.91	8.12	19.18	10.48
k, delay calibration	0.11	0.30	0.11	0.11	0.11	0.29	0.44	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	8.21	0.16	3.76	0.67	8.71	3.72	1.37	0.04	0.33	5.70	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.79	0.14	0.52	0.44	0.77	0.47	0.46	0.02	0.10	0.79	0.07
d, Delay for Lane Group [s/veh]	49.59	53.98	38.33	65.60	42.00	54.30	22.39	14.96	9.95	8.46	24.88	10.62
Lane Group LOS	D	D	D	E	D	D	C	B	A	A	C	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.98	11.64	1.31	1.96	5.29	9.61	1.92	8.05	0.24	0.59	19.87	0.78
50th-Percentile Queue Length [ft/ln]	24.51	290.99	32.80	48.92	132.31	240.19	48.02	201.33	6.07	14.73	496.68	19.40
95th-Percentile Queue Length [veh/ln]	1.77	17.23	2.36	3.52	9.07	14.69	3.46	12.71	0.44	1.06	27.18	1.40
95th-Percentile Queue Length [ft/ln]	44.13	430.87	59.05	88.06	226.63	367.28	86.43	317.68	10.93	26.52	679.43	34.92

Movement, Approach, & Intersection Results

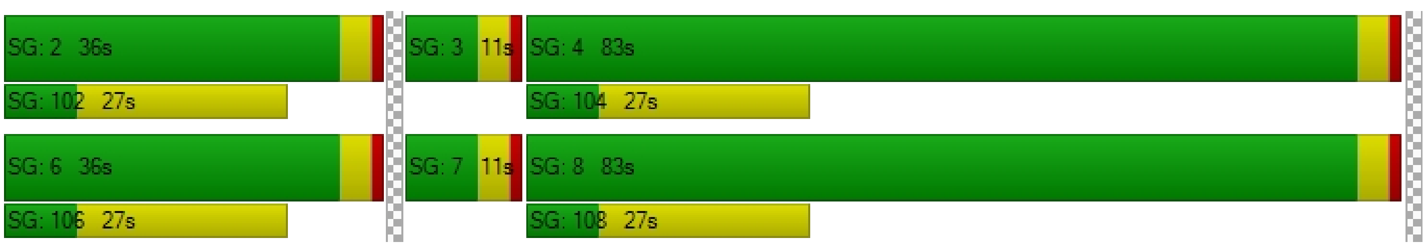
d_M, Delay for Movement [s/veh]	49.59	53.98	38.33	65.60	42.00	54.30	22.39	14.96	9.95	8.46	24.88	10.62
Movement LOS	D	D	D	E	D	D	C	B	A	A	C	B
d_A, Approach Delay [s/veh]	51.80			51.08			16.64			22.89		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	31.69											
Intersection LOS	C											
Intersection V/C	0.743											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.47	54.47	54.47	54.47
I_p,int, Pedestrian LOS Score for Intersection	2.350	2.622	2.731	2.683
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	492	492	1215	1215
d_b, Bicycle Delay [s]	36.94	36.94	10.00	10.00
I_b,int, Bicycle LOS Score for Intersection	2.274	2.452	2.713	3.187
Bicycle LOS	B	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	52	62	26	18	69	142	75	365	37	27	627	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	62	26	18	69	142	75	365	37	27	627	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	17	7	5	19	39	20	99	10	7	170	4
Total Analysis Volume [veh/h]	57	67	28	20	75	154	82	397	40	29	682	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	499			768			124			206		
Exiting Flow Rate [veh/h]	144			164			893			445		
Demand Flow Rate [veh/h]	52	62	26	18	69	142	75	365	37	27	627	14
Adjusted Demand Flow Rate [veh/h]	57	67	28	20	75	154	82	397	40	29	682	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	152	249	519	726
Capacity of Entry and Bypass Lanes [veh/h]	830	631	1217	1119
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	830	631	1217	1119
X, volume / capacity	0.18	0.39	0.43	0.65

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	0.67	1.88	2.18	5.03
95th-Percentile Queue Length [ft]	16.69	47.09	54.48	125.83
Approach Delay [s/veh]	6.23	11.36	7.28	12.21
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	9.97			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			✛			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	18	11	2	16	15	79	65	327	20	5	545	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	11	2	16	15	79	65	327	20	5	545	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	4	4	21	18	89	5	1	148	3
Total Analysis Volume [veh/h]	20	12	2	17	16	86	71	355	22	5	592	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	443			617			38			103		
Exiting Flow Rate [veh/h]	43			95			698			374		
Demand Flow Rate [veh/h]	18	11	2	16	15	79	65	327	20	5	545	11
Adjusted Demand Flow Rate [veh/h]	20	12	2	17	16	86	71	355	22	5	592	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	34	119	448	609
Capacity of Entry and Bypass Lanes [veh/h]	879	736	1328	1243
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	879	736	1328	1243
X, volume / capacity	0.04	0.16	0.34	0.49

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.12	0.57	1.51	2.79
95th-Percentile Queue Length [ft]	3.02	14.37	37.69	69.66
Approach Delay [s/veh]	4.46	6.65	5.77	8.10
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.99			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	8	74	2	3	72	2	7	0	27	10	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	74	2	3	72	2	7	0	27	10	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	20	1	1	20	1	2	0	7	3	0	0
Total Analysis Volume [veh/h]	9	80	2	3	78	2	8	0	29	11	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	7.36	0.00	0.00	9.80	10.25	8.81	9.96	10.17	8.73
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.01	0.01	0.01	0.12	0.12	0.12	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.39	0.15	0.15	0.15	3.10	3.10	3.10	1.13	1.13	1.13
d_A, Approach Delay [s/veh]	0.73			0.27			9.02			9.96		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.39											
Intersection LOS	B											

Fallbrook Meadows Residential Project

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Scenario 1 Year 2040 Without Project
8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.575	24.5	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		7.7	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		5.9	A
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.575

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	26	266	78	51	312	215	232	586	79	80	413	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	266	78	51	312	215	232	586	79	80	413	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	21	13	82	57	61	154	21	21	109	11
Total Analysis Volume [veh/h]	27	280	82	54	328	226	244	617	83	84	435	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	3	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	35	0	0	35	20	20	40	0	20	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	26	26	26	26	76	65	65	76	64	64
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.24	0.69	0.59	0.59	0.69	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.05	0.05	0.18	0.15	0.23	0.34	0.05	0.09	0.24	0.03
s, saturation flow rate [veh/h]	1069	1800	1530	1117	1800	1530	1068	1800	1530	919	1800	1530
c, Capacity [veh/h]	117	431	366	152	431	366	703	1066	907	556	1040	884
d1, Uniform Delay [s]	51.13	37.69	33.63	49.17	38.92	37.34	7.54	13.90	9.66	8.37	12.91	10.09
k, delay calibration	0.11	0.12	0.11	0.11	0.19	0.11	0.33	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	1.88	0.31	1.40	4.91	1.70	0.90	2.29	0.20	0.58	1.24	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.65	0.22	0.36	0.76	0.62	0.35	0.58	0.09	0.15	0.42	0.05
d, Delay for Lane Group [s/veh]	52.13	39.57	33.94	50.57	43.83	39.04	8.44	16.18	9.86	8.95	14.15	10.20
Lane Group LOS	D	D	C	D	D	D	A	B	A	A	B	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.76	7.05	1.82	1.48	8.67	5.51	2.00	9.43	0.87	0.66	5.97	0.48
50th-Percentile Queue Length [ft/ln]	19.12	176.35	45.39	37.06	216.66	137.85	49.99	235.77	21.71	16.38	149.14	12.00
95th-Percentile Queue Length [veh/ln]	1.38	11.41	3.27	2.67	13.49	9.36	3.60	14.47	1.56	1.18	9.97	0.86
95th-Percentile Queue Length [ft/ln]	34.41	285.25	81.70	66.71	337.36	234.12	89.99	361.68	39.09	29.48	249.28	21.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.13	39.57	33.94	50.57	43.83	39.04	8.44	16.18	9.86	8.95	14.15	10.20
Movement LOS	D	D	C	D	D	D	A	B	A	A	B	B
d_A, Approach Delay [s/veh]		39.25			42.65			13.63			13.06	
Approach LOS		D			D			B			B	
d_I, Intersection Delay [s/veh]	24.52											
Intersection LOS	C											
Intersection V/C	0.575											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
I_p,int, Pedestrian LOS Score for Intersection	2.393	2.682	2.643	2.592
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	564	564	655	655
d_b, Bicycle Delay [s]	28.37	28.37	24.89	24.89
I_b,int, Bicycle LOS Score for Intersection	2.201	2.563	3.117	2.490
Bicycle LOS	B	B	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╬			╬			╬			╬		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	31	63	24	17	83	105	111	427	41	27	315	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	63	24	17	83	105	111	427	41	27	315	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	17	7	5	23	29	30	116	11	7	86	3
Total Analysis Volume [veh/h]	34	68	26	18	90	114	121	464	45	29	342	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	603			405			137			223		
Exiting Flow Rate [veh/h]	164			201			490			508		
Demand Flow Rate [veh/h]	31	63	24	17	83	105	111	427	41	27	315	11
Adjusted Demand Flow Rate [veh/h]	34	68	26	18	90	114	121	464	45	29	342	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	128	222	630	383
Capacity of Entry and Bypass Lanes [veh/h]	747	914	1201	1100
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	747	914	1201	1100
X, volume / capacity	0.17	0.24	0.52	0.35

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.62	0.95	3.17	1.58
95th-Percentile Queue Length [ft]	15.41	23.83	79.36	39.41
Approach Delay [s/veh]	6.68	6.42	8.89	6.76
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.68			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	5.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	11	15	6	9	13	24	60	409	25	6	291	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	15	6	9	13	24	60	409	25	6	291	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	2	2	4	7	16	111	7	2	79	4
Total Analysis Volume [veh/h]	12	16	7	10	14	26	65	445	27	7	316	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	520			335			31			93		
Exiting Flow Rate [veh/h]	48			97			354			462		
Demand Flow Rate [veh/h]	11	15	6	9	13	24	60	409	25	6	291	15
Adjusted Demand Flow Rate [veh/h]	12	16	7	10	14	26	65	445	27	7	316	16

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	35	50	537	339
Capacity of Entry and Bypass Lanes [veh/h]	812	981	1338	1256
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	812	981	1338	1256
X, volume / capacity	0.04	0.05	0.40	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.16	1.97	1.10
95th-Percentile Queue Length [ft]	3.37	4.02	49.37	27.49
Approach Delay [s/veh]	4.85	4.12	6.50	5.28
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.88			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	27	70	2	1	50	7	4	0	16	5	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	70	2	1	50	7	4	0	16	5	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	19	1	0	14	2	1	0	4	1	0	0
Total Analysis Volume [veh/h]	29	76	2	1	54	8	4	0	17	5	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	7.35	0.00	0.00	9.84	10.31	8.64	9.93	10.28	8.67
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.07	0.07	0.07	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.33	1.33	1.33	0.05	0.05	0.05	1.69	1.69	1.69	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	1.99			0.12			8.87			9.93		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.33											
Intersection LOS	B											

YEAR 2040 WITH PROJECT

Fallbrook Meadows Residential Project

Vistro File: G:\...\AMLR.vistro
Report File: G:\...\AMLRp.pdf

Scenario 2 Year 2040 With Project
8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	SB Left	0.760	32.2	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	SB Right		10.5	B
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	WB Thru		7.2	A
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.103	10.9	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	10.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	31	332	48	53	183	277	164	480	20	61	815	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	1	0	0	0	8	0	7	29	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	332	50	54	183	277	164	488	20	68	844	64
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	87	13	14	48	73	43	128	5	18	222	17
Total Analysis Volume [veh/h]	33	349	53	57	193	292	173	514	21	72	888	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	3	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	36	0	0	36	11	11	83	0	11	83	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	90	79	79	90	79	79
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.69	0.61	0.61	0.69	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.03	0.05	0.11	0.19	0.23	0.29	0.01	0.07	0.49	0.04
s, saturation flow rate [veh/h]	1209	1800	1530	1048	1800	1530	745	1800	1530	978	1800	1530
c, Capacity [veh/h]	226	443	377	108	443	377	349	1099	934	613	1092	928
d1, Uniform Delay [s]	49.29	45.77	38.22	61.89	41.32	45.59	20.46	13.77	9.98	8.27	19.81	10.50
k, delay calibration	0.11	0.30	0.11	0.11	0.11	0.29	0.46	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	8.21	0.17	3.90	0.67	8.71	4.53	1.43	0.04	0.39	6.64	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.79	0.14	0.53	0.44	0.77	0.50	0.47	0.02	0.12	0.81	0.07
d, Delay for Lane Group [s/veh]	49.59	53.98	38.39	65.79	42.00	54.30	24.99	15.20	10.02	8.66	26.45	10.65
Lane Group LOS	D	D	D	E	D	D	C	B	B	A	C	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.98	11.64	1.37	2.00	5.29	9.61	1.98	8.29	0.24	0.67	21.40	0.81
50th-Percentile Queue Length [ft/ln]	24.51	290.99	34.14	49.89	132.31	240.19	49.46	207.35	6.10	16.69	535.11	20.35
95th-Percentile Queue Length [veh/ln]	1.77	17.23	2.46	3.59	9.07	14.69	3.56	13.02	0.44	1.20	28.99	1.47
95th-Percentile Queue Length [ft/ln]	44.13	430.87	61.45	89.81	226.63	367.28	89.02	325.43	10.98	30.04	724.80	36.63

Movement, Approach, & Intersection Results

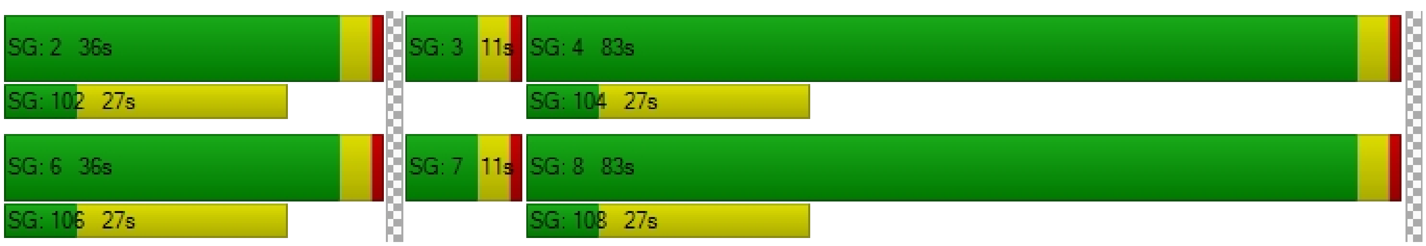
d_M, Delay for Movement [s/veh]	49.59	53.98	38.39	65.79	42.00	54.30	24.99	15.20	10.02	8.66	26.45	10.65
Movement LOS	D	D	D	E	D	D	C	B	B	A	C	B
d_A, Approach Delay [s/veh]	51.74			51.13			17.44			24.17		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	32.22											
Intersection LOS	C											
Intersection V/C	0.760											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.47	54.47	54.47	54.47
I_p,int, Pedestrian LOS Score for Intersection	2.359	2.624	2.742	2.699
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	492	492	1215	1215
d_b, Bicycle Delay [s]	36.94	36.94	10.00	10.00
I_b,int, Bicycle LOS Score for Intersection	2.277	2.454	2.728	3.254
Bicycle LOS	B	B	B	C

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	52	62	26	18	69	142	75	365	37	27	627	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	0	3	29	8	3	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	63	26	18	72	171	83	368	37	27	637	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	17	7	5	20	46	23	100	10	7	173	4
Total Analysis Volume [veh/h]	57	68	28	20	78	186	90	400	40	29	692	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	510			778			127			215		
Exiting Flow Rate [veh/h]	147			173			935			448		
Demand Flow Rate [veh/h]	52	63	26	18	72	171	83	368	37	27	637	14
Adjusted Demand Flow Rate [veh/h]	57	68	28	20	78	186	90	400	40	29	692	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	153	284	530	736
Capacity of Entry and Bypass Lanes [veh/h]	821	625	1213	1109
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	821	625	1213	1109
X, volume / capacity	0.19	0.46	0.44	0.66

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	0.68	2.37	2.27	5.32
95th-Percentile Queue Length [ft]	17.06	59.32	56.75	133.07
Approach Delay [s/veh]	6.32	12.77	7.44	12.74
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.52			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	18	11	2	16	15	79	65	327	20	5	545	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	14	3	10	3	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	12	2	30	18	89	68	327	20	5	545	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	1	8	5	24	18	89	5	1	148	4
Total Analysis Volume [veh/h]	20	13	2	33	20	97	74	355	22	5	592	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	462			617			58			107		
Exiting Flow Rate [veh/h]	47			103			709			390		
Demand Flow Rate [veh/h]	18	12	2	30	18	89	68	327	20	5	545	15
Adjusted Demand Flow Rate [veh/h]	20	13	2	33	20	97	74	355	22	5	592	16

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	35	150	451	613
Capacity of Entry and Bypass Lanes [veh/h]	862	736	1301	1238
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	862	736	1301	1238
X, volume / capacity	0.04	0.20	0.35	0.50

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.76	1.57	2.84
95th-Percentile Queue Length [ft]	3.17	19.02	39.23	71.05
Approach Delay [s/veh]	4.56	7.16	5.96	8.21
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.17			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.103

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	141	9	1	138	32	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	1	0	32	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	18	2	138	64	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	5	1	38	17	2
Total Analysis Volume [veh/h]	153	20	2	150	70	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.55	0.00	10.95	9.71
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.37	0.37
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.11	0.11	9.31	9.31
d_A, Approach Delay [s/veh]	0.00		0.10		10.83	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	8	74	2	3	72	2	7	0	27	10	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	2	7	0	27	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	74	2	3	72	4	14	0	54	10	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	1	1	20	1	4	0	15	3	0	0
Total Analysis Volume [veh/h]	17	80	2	3	78	4	15	0	59	11	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.06	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.38	0.00	0.00	7.36	0.00	0.00	10.11	10.57	8.99	10.40	10.33	8.74
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.01	0.01	0.01	0.26	0.26	0.26	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.79	0.79	0.79	0.15	0.15	0.15	6.48	6.48	6.48	1.24	1.24	1.24
d_A, Approach Delay [s/veh]	1.27			0.26			9.22			10.40		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	3.51											
Intersection LOS	B											

Fallbrook Meadows Residential Project

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Scenario 2 Year 2040 With Project
8/16/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	5th St (NS) at County Line Rd (EW)	Signalized	HCM 6th Edition	NB Left	0.593	24.6	C
2	3rd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		8.2	A
3	2nd St (NS) at County Line Rd (EW)	Roundabout	HCM 6th Edition	EB Thru		6.1	A
4	3rd St (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	WB Left	0.060	11.3	B
5	2nd St (NS) at San Rosen Ct/Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Thru	0.000	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: 5th St (NS) at County Line Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.593

Intersection Setup

Name	5th St			5th St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	90.00	100.00	100.00	60.00	100.00	100.00	105.00	100.00	50.00	110.00	100.00	50.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	26	266	78	51	312	215	232	586	79	80	413	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	3	0	0	0	28	0	4	15	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	266	85	54	312	215	232	614	79	84	428	45
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	70	22	14	82	57	61	162	21	22	113	12
Total Analysis Volume [veh/h]	27	280	89	57	328	226	244	646	83	88	451	47
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	3	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	35	0	0	35	20	20	40	0	20	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	26	26	26	26	76	65	65	76	64	64
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.24	0.69	0.59	0.59	0.69	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.06	0.05	0.18	0.15	0.23	0.36	0.05	0.10	0.25	0.03
s, saturation flow rate [veh/h]	1069	1800	1530	1117	1800	1530	1056	1800	1530	901	1800	1530
c, Capacity [veh/h]	117	431	366	152	431	366	690	1066	906	535	1041	884
d1, Uniform Delay [s]	51.13	37.70	33.80	49.31	38.93	37.35	7.68	14.28	9.68	8.84	13.06	10.10
k, delay calibration	0.11	0.12	0.11	0.11	0.19	0.11	0.34	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	1.88	0.34	1.52	4.92	1.70	0.96	2.56	0.20	0.66	1.32	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.65	0.24	0.37	0.76	0.62	0.35	0.61	0.09	0.16	0.43	0.05
d, Delay for Lane Group [s/veh]	52.12	39.58	34.14	50.83	43.84	39.05	8.65	16.84	9.88	9.50	14.38	10.21
Lane Group LOS	D	D	C	D	D	D	A	B	A	A	B	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.76	7.05	1.98	1.57	8.67	5.51	2.01	10.17	0.87	0.69	6.26	0.50
50th-Percentile Queue Length [ft/ln]	19.12	176.37	49.53	39.27	216.69	137.86	50.21	254.24	21.75	17.32	156.58	12.55
95th-Percentile Queue Length [veh/ln]	1.38	11.41	3.57	2.83	13.50	9.37	3.62	15.40	1.57	1.25	10.37	0.90
95th-Percentile Queue Length [ft/ln]	34.41	285.26	89.15	70.69	337.39	234.14	90.38	384.99	39.15	31.18	259.19	22.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.12	39.58	34.14	50.83	43.84	39.05	8.65	16.84	9.88	9.50	14.38	10.21
Movement LOS	D	D	C	D	D	D	A	B	A	A	B	B
d_A, Approach Delay [s/veh]	39.21			42.72			14.19			13.31		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	24.65											
Intersection LOS	C											
Intersection V/C	0.593											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
I_p,int, Pedestrian LOS Score for Intersection	2.399	2.684	2.656	2.614
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	564	564	655	655
d_b, Bicycle Delay [s]	28.37	28.37	24.89	24.89
I_b,int, Bicycle LOS Score for Intersection	2.213	2.568	3.165	2.527
Bicycle LOS	B	B	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 3rd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	3rd St			3rd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	31	63	24	17	83	105	111	427	41	27	315	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	2	15	28	10	0	0	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	66	24	17	85	120	139	437	41	27	321	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	18	7	5	23	33	38	119	11	7	87	3
Total Analysis Volume [veh/h]	34	72	26	18	92	130	151	475	45	29	349	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	644			412			139			257		
Exiting Flow Rate [veh/h]	166			235			513			519		
Demand Flow Rate [veh/h]	31	66	24	17	85	120	139	437	41	27	321	11
Adjusted Demand Flow Rate [veh/h]	34	72	26	18	92	130	151	475	45	29	349	12

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	132	240	671	390
Capacity of Entry and Bypass Lanes [veh/h]	716	907	1198	1062
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	716	907	1198	1062
X, volume / capacity	0.18	0.26	0.56	0.37

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.67	1.07	3.62	1.71
95th-Percentile Queue Length [ft]	16.81	26.67	90.58	42.67
Approach Delay [s/veh]	7.09	6.72	9.57	7.18
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.21			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: 2nd St (NS) at County Line Rd (EW)

Control Type:	Roundabout	Delay (sec / veh):	6.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			County Line Rd			County Line Rd		
Base Volume Input [veh/h]	11	15	6	9	13	24	60	409	25	6	291	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	8	2	6	10	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	18	6	17	15	30	70	409	25	6	291	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	5	2	5	4	8	19	111	7	2	79	8
Total Analysis Volume [veh/h]	12	20	7	18	16	33	76	445	27	7	316	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	539			335			41			108		
Exiting Flow Rate [veh/h]	50			128			361			470		
Demand Flow Rate [veh/h]	11	18	6	17	15	30	70	409	25	6	291	29
Adjusted Demand Flow Rate [veh/h]	12	20	7	18	16	33	76	445	27	7	316	32

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	39	67	548	355
Capacity of Entry and Bypass Lanes [veh/h]	797	981	1324	1237
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	797	981	1324	1237
X, volume / capacity	0.05	0.07	0.41	0.29

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.15	0.22	2.08	1.20
95th-Percentile Queue Length [ft]	3.86	5.49	51.89	29.89
Approach Delay [s/veh]	5.00	4.28	6.70	5.52
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.06			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: 3rd St (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.060

Intersection Setup

Name	3rd St		3rd St		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	3rd St		3rd St		Project Dwy	
Base Volume Input [veh/h]	162	31	3	154	17	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	3	0	17	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	62	6	154	34	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	17	2	42	9	1
Total Analysis Volume [veh/h]	176	67	7	167	37	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.71	0.00	11.26	9.70
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.21	0.21
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.34	0.34	5.20	5.20
d_A, Approach Delay [s/veh]	0.00		0.31		11.11	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: 2nd St (NS) at San Rosen Ct/Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	2nd St			2nd St			Project Dwy			San Rosen Ct		
Base Volume Input [veh/h]	27	70	2	1	50	7	4	0	16	5	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	0	0	0	7	4	0	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	70	2	1	50	14	8	0	32	5	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	19	1	0	14	4	2	0	9	1	0	0
Total Analysis Volume [veh/h]	59	76	2	1	54	15	9	0	35	5	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

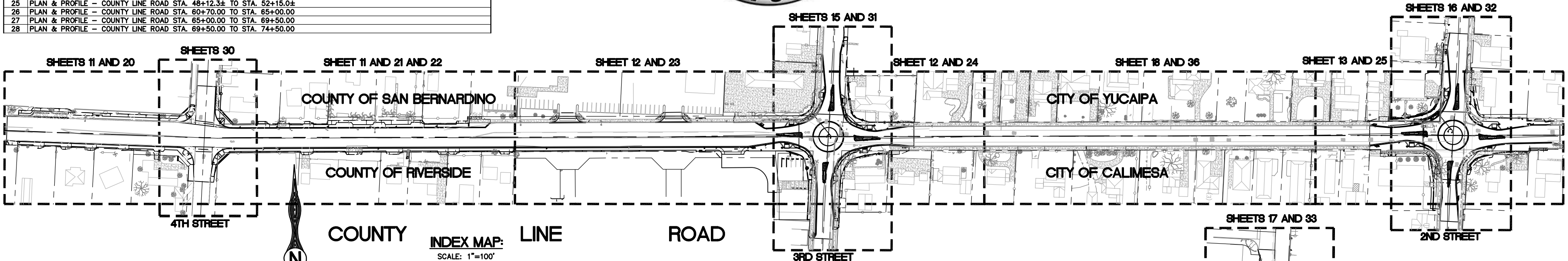
Movement, Approach, & Intersection Results

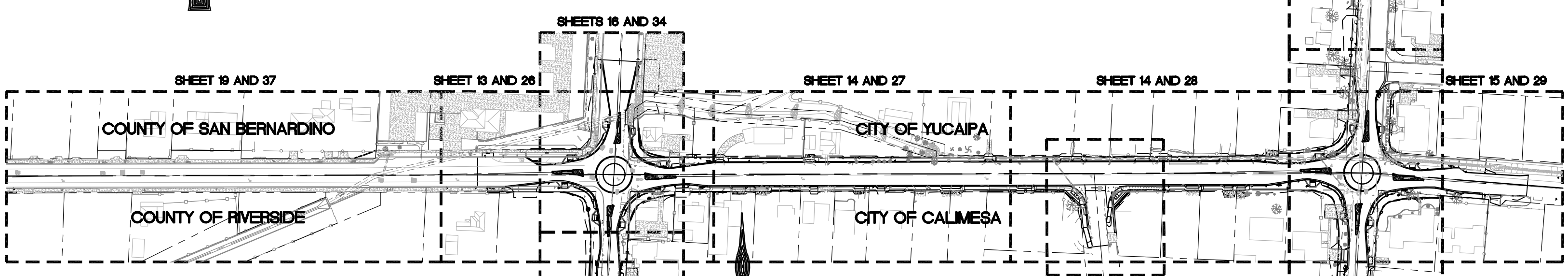
V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	7.35	0.00	0.00	10.52	10.98	8.76	10.70	10.88	8.68
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.11	0.00	0.00	0.00	0.15	0.15	0.15	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	2.72	2.72	2.72	0.05	0.05	0.05	3.77	3.77	3.77	0.59	0.59	0.59
d_A, Approach Delay [s/veh]	3.20			0.10			9.12			10.70		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	3.52											
Intersection LOS	B											

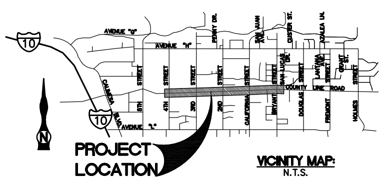
APPENDIX H

COUNTY LINE ROAD CAPITAL IMPROVEMENT PLANS

CITY OF CALIMESA
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
STREET IMPROVEMENT PLANS







BASIS OF BEARINGS:
THE BEARING OF "NORTH" ALONG THE CENTERLINE OF 4TH. STREET, PER TRACT MAP NO. 26115 M.B. 241/50–52, RIVERSIDE COUNTY RECORDS IS THE BASIS OF ALL BEARINGS SHOWN ON THIS PLANS.

811
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MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL–CITY

REGISTERED PROFESSIONAL ENGINEER
MICHAEL THORNTON
No. C44226
Exp. 6/30/23
CIVIL
STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — 07–26–21 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — 07–26–21 DATE

SEAL–DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER
TERRY M. RENNER
No. 69984
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:
07–26–21
DATE

BENCH MARK: B.M. NO. C–33–65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

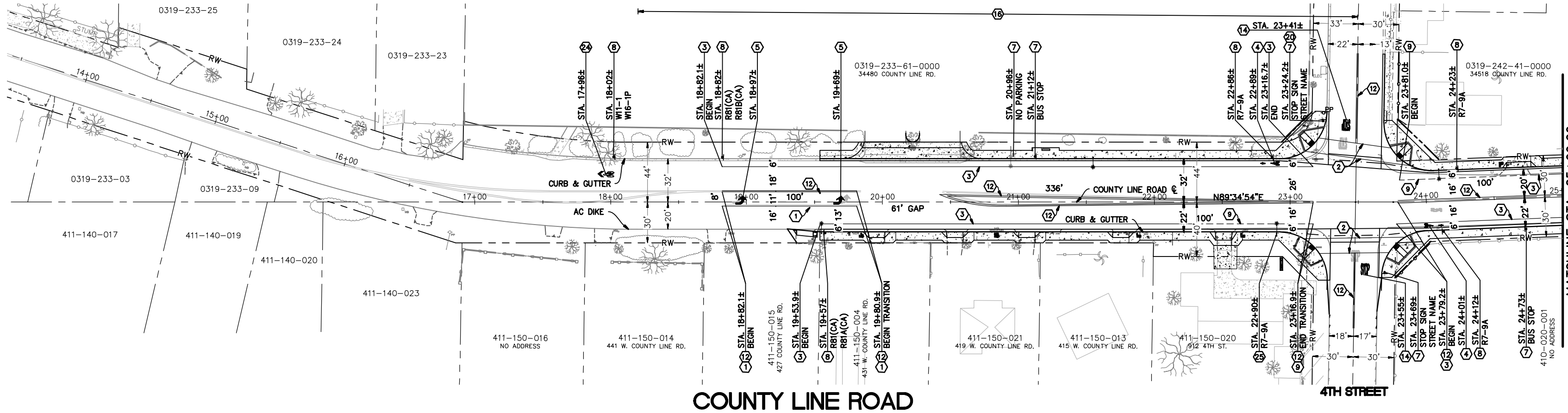
SCALE: AS SHOWN

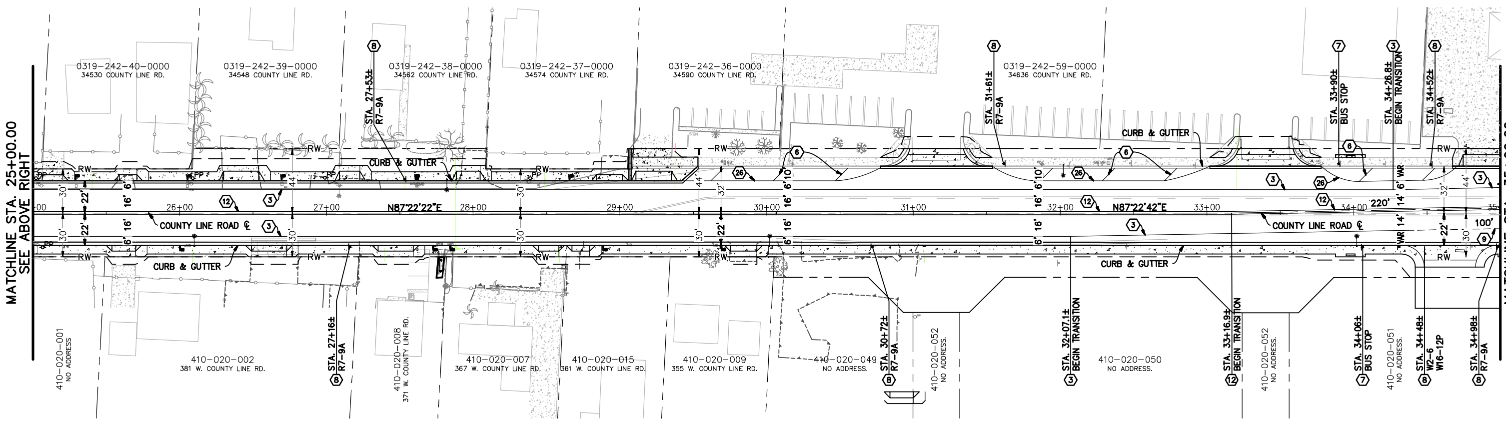
CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
TITLE SHEET

1 OF 52 SHEETS

FOR:
CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. ____________





SIGNING AND STRIPING CONSTRUCTION NOTES:

1. APPLY THERMOPLASTIC, 8" SOLID WHITE CHANNELIZING STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 38.
2. APPLY THERMOPLASTIC, 12" SOLID WHITE CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.
3. APPLY THERMOPLASTIC, 6" SOLID WHITE BIKE LANE STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39.
4. APPLY THERMOPLASTIC, BICYCLE LANE SYMBOL AND ARROW PER CA. MUTCD 2014, FIG. 9C-3B (CA).
5. APPLY THERMOPLASTIC, TYPE IV ARROW PER CA. MUTCD 2014, FIG. 3B-24 (CA).
6. APPLY THERMOPLASTIC, 12" SOLID WHITE LINE AS SHOWN.
7. INSTALL EXISTING RELOCATED SIGN AS NOTED
8. FURNISH AND INSTALL SIGN AS NOTED.
9. APPLY THERMOPLASTIC, 6" WHITE BIKE LANE INTERSECTION STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39A.
12. APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

SIGNING AND STRIPING CONSTRUCTION NOTES: (CONT.)

14. APPLY THERMOPLASTIC STOP LEGEND PER CA. MUTCD 2014, FIG. 3B-23 (CA)
16. SANDBLAST ALL EXISTING CONFLICTING STRIPING AS REQUIRED.
20. FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF YUCAIPA STD. DWG. 421-0.
24. APPLY THERMOPLASTIC, SHARE LANE SYMBOL AND STRIPED ARROWS PER CA. MUTCD 2014, FIG. 9C-9 (CA) AND 9C-108 (CA).
25. FURNISH AND INSTALL SIGN ON STREET LIGHT POLE OR POWER POLE.
26. SOUTHERN CALIFORNIA EDISON TO INSTALL RELOCATED POWERPOLE, CONTRACTOR SHALL COORDINATE WITH SOUTHERN CALIFORNIA EDISON FOR RELOCATION. (SEE NOTE BELOW)

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 INCH = 40 FEET

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MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER — MICHAEL THORNTON — No. C44226 — Exp. 6/30/23 — CIVIL — STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — DATE 07-26-21

MARGARET MONSON, PUBLIC WORKS DIRECTOR — DATE 07-26-21

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER — TERRY M. RENNER — No. 69984 — Exp. 9/30/22 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF: — DATE 07-26-21

BENCH MARK: B.M. NO. C-33-65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

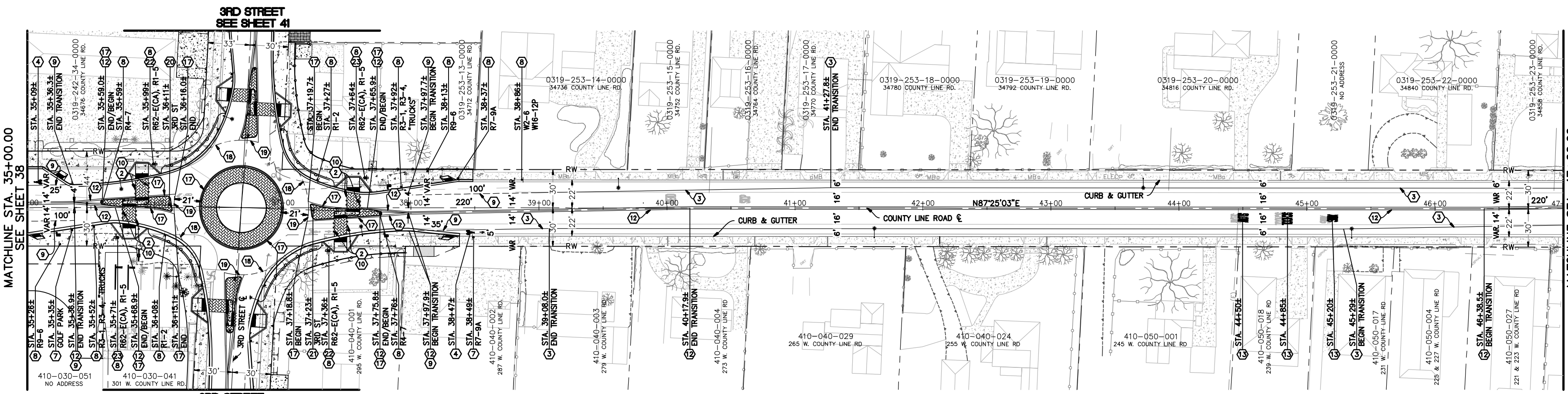
SCALE: AS SHOWN

CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
SIGNING & STRIPING – COUNTY LINE ROAD
STA. 19+29.9± TO STA. 35+00.00

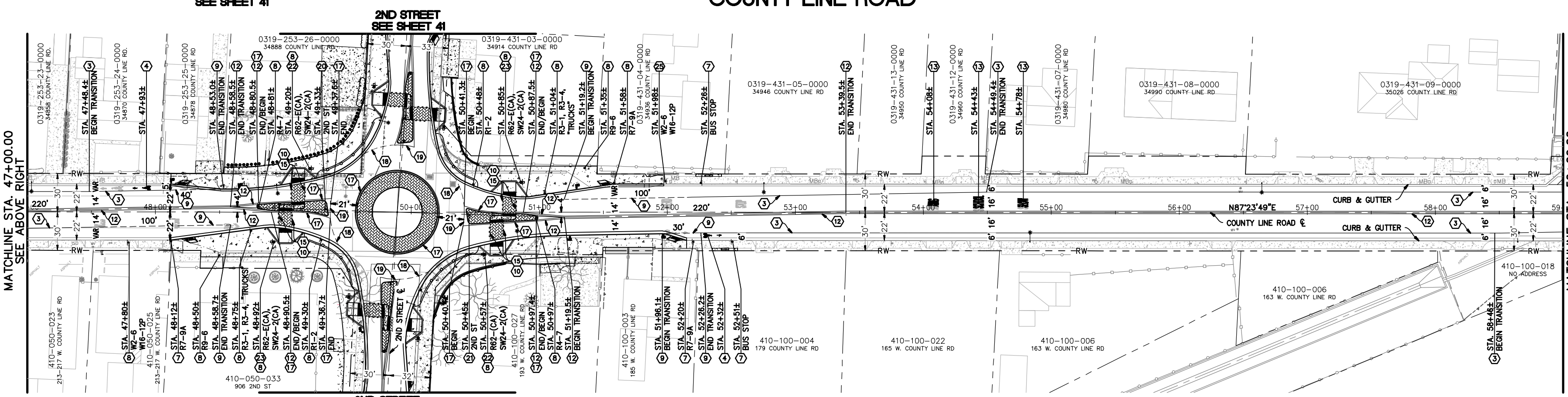
FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

38 OF 52 SHEETS



COUNTY LINE ROAD



COUNTY LINE ROAD

SIGNING AND STRIPING CONSTRUCTION NOTES:

(2) APPLY THERMOPLASTIC, 12" SOLID WHITE CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

(3) APPLY THERMOPLASTIC, 6" SOLID WHITE BIKE LANE STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39.

(4) APPLY THERMOPLASTIC, BICYCLE LANE SYMBOL AND ARROW PER CA. MUTCD 2014, FIG. 9C-3B (CA).

(7) INSTALL EXISTING RELOCATED SIGN AS NOTED

(8) FURNISH AND INSTALL SIGN AS NOTED.

(9) APPLY THERMOPLASTIC, 6" WHITE BIKE LANE INTERSECTION STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39A.

(10) FURNISH AND INSTALL UNI-DIRECTIONAL IN-ROADWAY WARNING LIGHTS, PER CONSTRUCTION CONTRACT SPECIFICATIONS, 1' MEASURED FROM THE OUTSIDE EDGE OF CROSSWALK LINE, AND AS SHOWN.

(12) APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

(13) APPLY THERMOPLASTIC, PAVEMENT LEGEND AS SHOWN PER CA MUTCD 2014, FIG. 3B-23 (CA).

(15) APPLY THERMOPLASTIC, 12" SOLID YELLOW CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

SIGNING AND STRIPING CONSTRUCTION NOTES: (CONT.)

(17) APPLY THERMOPLASTIC, 4" SOLID YELLOW LEFT EDGE LINE PER CA. MUTCD 2014, FIG. 3A-105 (CA), DETAIL 24.

(18) APPLY THERMOPLASTIC, 12" BROKEN WHITE 3-FT. STRIPE WITH 3-FT. GAP.

(19) APPLY THERMOPLASTIC, WHITE RIGHT EDGE LINE STRIPE PER CA. MUTCD 2014, FIG. 3A-106 (CA), DETAIL 27B.

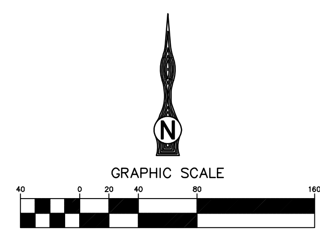
(20) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF YUCAIPA STD. DWG. 421-0.

(21) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF CALIMESA STANDARDS.

(22) FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "A" AND AS SHOWN.

(23) FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "B" AND AS SHOWN.

(25) FURNISH AND INSTALL SIGN ON STREET LIGHT POLE OR POWER POLE.



GRAPHIC SCALE

(IN FEET)

1 INCH = 40 FEET

S:\CADD\133-38 County Line Road LPP\133-38_39SI.dwg Jul 27, 2021 - 10:37am

Know what's below. Call before you dig.

MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER MICHAEL THORNTON No. C44226 Exp. 6/30/23 CIVIL STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — 07-26-21 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — 07-26-21 DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER TERRY M. RENNER No. 69984 Exp. 9/30/22 CIVIL STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF: — 07-26-21 DATE

BENCH MARK: B.M. NO. C-33-65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

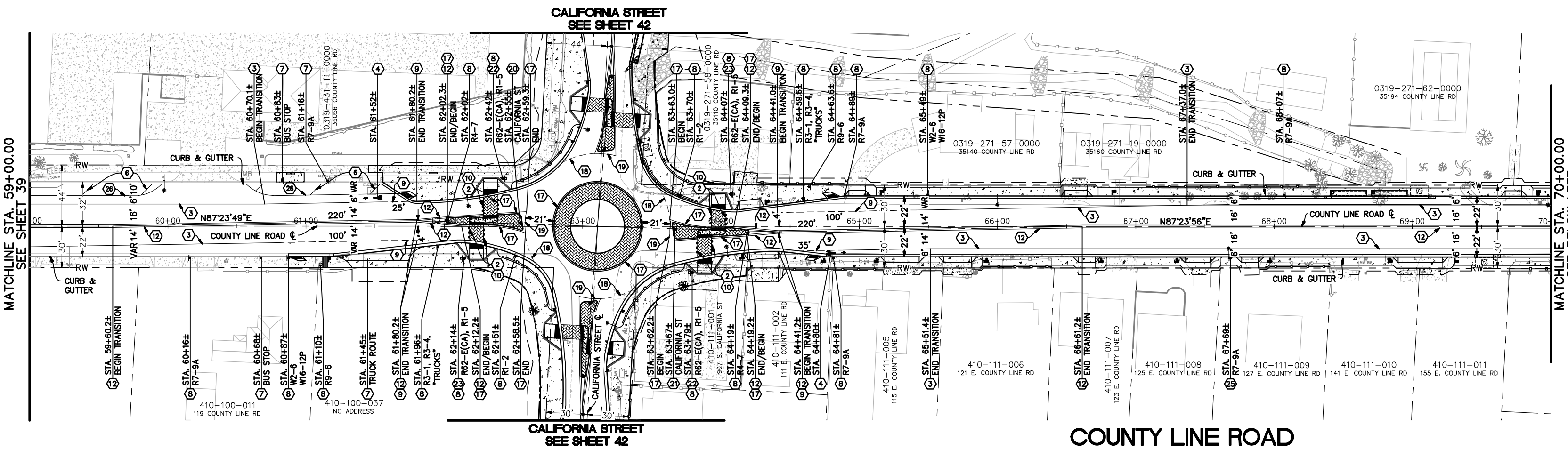
SCALE: AS SHOWN

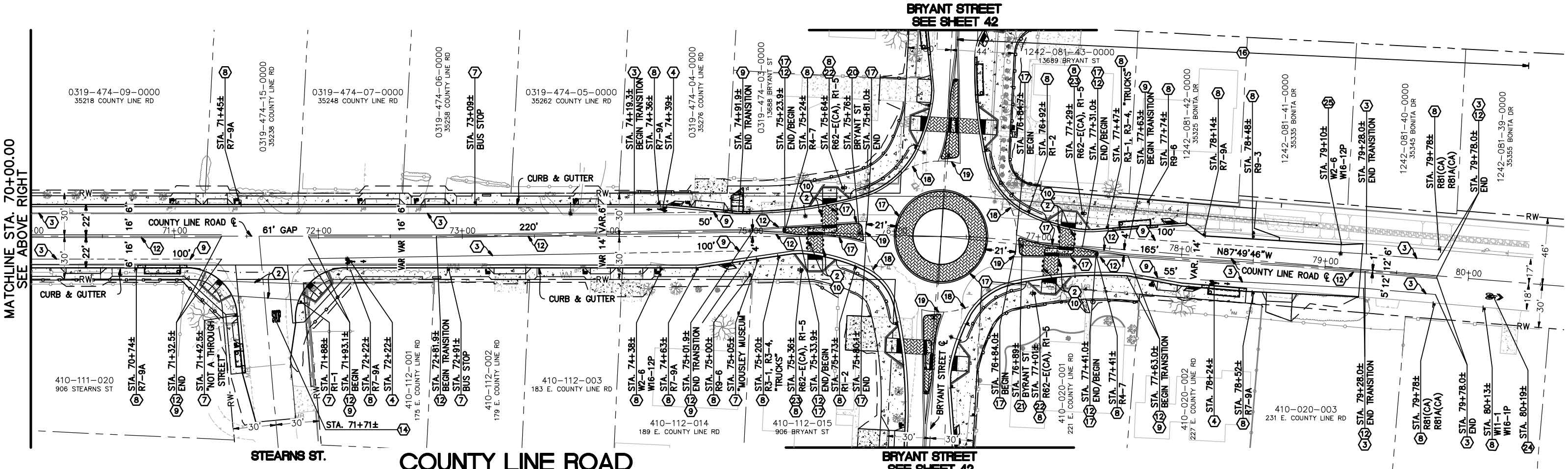
CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
SIGNING & STRIPING – COUNTY LINE ROAD
STA. 35+00.00 TO STA. 59+00.00

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No. ______

39 OF 52 SHEETS





SIGNING AND STRIPING CONSTRUCTION NOTES:

2 APPLY THERMOPLASTIC, 12" SOLID WHITE CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

3 APPLY THERMOPLASTIC, 6" SOLID WHITE BIKE LANE STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39.

4 APPLY THERMOPLASTIC, BICYCLE LANE SYMBOL AND ARROW PER CA. MUTCD 2014, FIG. 9C-3B (CA).

6 APPLY THERMOPLASTIC, 12" SOLID WHITE LINE AS SHOWN.

7 INSTALL EXISTING RELOCATED SIGN AS NOTED

8 FURNISH AND INSTALL SIGN AS NOTED.

9 APPLY THERMOPLASTIC, 6" WHITE BIKE LANE INTERSECTION STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39A.

10 FURNISH AND INSTALL UNI-DIRECTIONAL IN-ROADWAY WARNING LIGHTS, PER CONSTRUCTION CONTRACT SPECIFICATIONS, 1' MEASURED FROM THE OUTSIDE EDGE OF CROSSWALK LINE, AND AS SHOWN.

12 APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

14 APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

SIGNING AND STRIPING CONSTRUCTION NOTES: (CONT.)

16 SANDBLAST ALL EXISTING CONFLICTING STRIPING AS REQUIRED.

17 APPLY THERMOPLASTIC, 4" SOLID YELLOW LEFT EDGE LINE PER CA. MUTCD 2014, FIG. 3A-105 (CA), DETAIL 24.

18 APPLY THERMOPLASTIC, 12" BROKEN WHITE 3-FT. STRIPE WITH 3-FT. GAP.

19 APPLY THERMOPLASTIC, WHITE RIGHT EDGE LINE STRIPE PER CA. MUTCD 2014, FIG. 3A-106 (CA), DETAIL 27B.

20 FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF YUCAIPA STD. DWG. 421-0.

21 FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF CALIMESA STANDARDS.

22 FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "A" AND AS SHOWN.

23 FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "B" AND AS SHOWN.

24 APPLY THERMOPLASTIC, SHARE LANE SYMBOL AND STRIPED ARROWS PER CA. MUTCD 2014, FIG. 9C-9 (CA) AND 9C-108 (CA).

25 FURNISH AND INSTALL SIGN ON STREET LIGHT POLE OR POWER POLE.

SIGNING AND STRIPING CONSTRUCTION NOTES: (CONT.)

26 APPLY THERMOPLASTIC 4" SOLID WHITE LANE STRIPE WITH TYPE G RPM 24' C-C.

27 CONSTRUCT 2" GALVANIZED PIPE PEDESTRAIN BARRIER, 6-FT WIDE. TYPE "A", PER APWA STANDARD PLAN 606-4, FURNISH AND INSTALL SIGN TOP-CENTER AS NOTED.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 INCH = 40 FEET

S:\CADD\133-38 County Line Road LPP\133-38_40SI.dwg Jul 27, 2021 - 10:45am

811 Know what's below. Call before you dig.

MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER, MICHAEL THORNTON, No. C44226, Exp. 6/30/23, CIVIL, STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — 07-26-21 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — 07-26-21 DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER, TERRY M. RENNER, No. 69984, Exp. 9/30/22, CIVIL, STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF: — 07-26-21 DATE

BENCH MARK: B.M. NO. C-33-65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

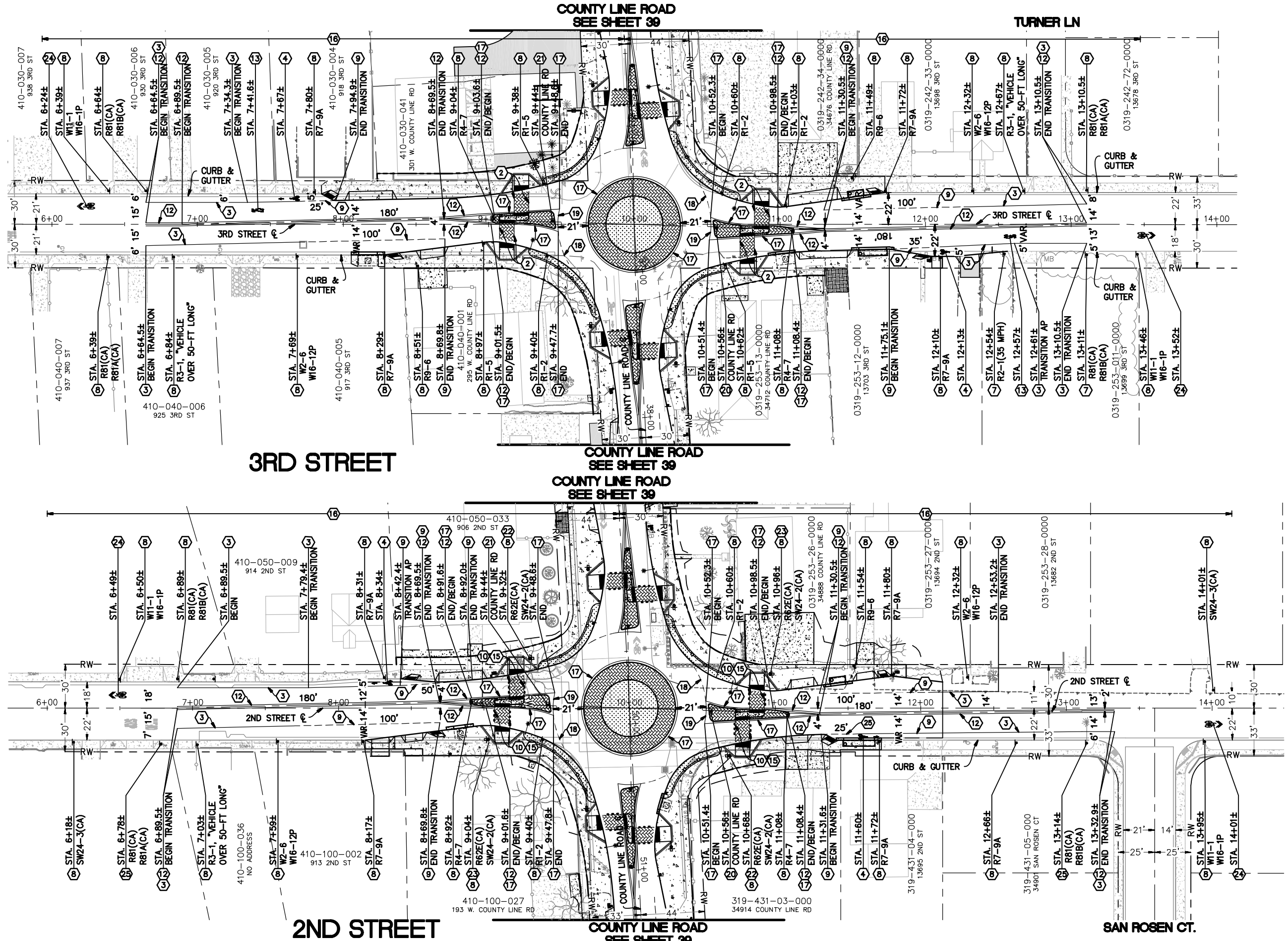
SCALE: AS SHOWN

CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
SIGNING & STRIPING – COUNTY LINE ROAD
STA. 59+00.00 TO STA. 80+19.00

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

40 OF 52 SHEETS

PLAN No. ________



SIGNING AND STRIPING CONSTRUCTION NOTES:

(2) APPLY THERMOPLASTIC, 12" SOLID WHITE CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

(3) APPLY THERMOPLASTIC, 6" SOLID WHITE BIKE LANE STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39.

(4) APPLY THERMOPLASTIC, BICYCLE LANE SYMBOL AND ARROW PER CA. MUTCD 2014, FIG. 9C-3B (CA).

(7) INSTALL EXISTING RELOCATED SIGN AS NOTED

(8) FURNISH AND INSTALL SIGN AS NOTED.

(9) APPLY THERMOPLASTIC, 6" WHITE BIKE LANE INTERSECTION STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39A.

(10) FURNISH AND INSTALL UNI-DIRECTIONAL IN-ROADWAY WARNING LIGHTS, PER CONSTRUCTION CONTRACT SPECIFICATIONS, 1' MEASURED FROM THE OUTSIDE EDGE OF CROSSWALK LINE, AND AS SHOWN.

(12) APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

(13) APPLY THERMOPLASTIC, PAVEMENT LEGEND AS SHOWN PER CA MUTCD 2014, FIG. 3B-23 (CA).

(15) APPLY THERMOPLASTIC, 12" SOLID YELLOW CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

SIGNING AND STRIPING CONSTRUCTION NOTES: (CONT.)

(16) SANDBLAST ALL EXISTING CONFLICTING STRIPING AS REQUIRED.

(17) APPLY THERMOPLASTIC, 4" SOLID YELLOW LEFT EDGE LINE PER CA. MUTCD 2014, FIG. 3A-105 (CA), DETAIL 24.

(18) APPLY THERMOPLASTIC, 12" BROKEN WHITE 3-FT. STRIPE WITH 3-FT. GAP.

(19) APPLY THERMOPLASTIC, WHITE RIGHT EDGE LINE STRIPE PER CA. MUTCD 2014, FIG. 3A-106 (CA), DETAIL 27B.

(20) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF YUCAIPA STD. DWG. 421-0.

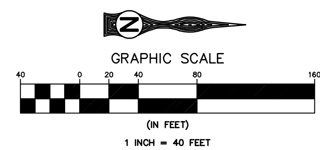
(21) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF CALIMESA STANDARDS.

(22) FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "A" AND AS SHOWN.

(23) FURNISH AND INSTALL PUSH BUTTON WITH INTEGRATED SIGN PLATE AND FLASHING BEACON PER CONSTRUCTION CONTRACT SPECIFICATIONS FOR ENHANCED CROSSWALK WITH IN-ROADWAY WARNING LIGHT, DETAIL "B" AND AS SHOWN.

(24) APPLY THERMOPLASTIC, SHARE LANE SYMBOL AND STRIPED ARROWS PER CA. MUTCD 2014, FIG. 9C-9 (CA) AND 9C-108 (CA).

(25) FURNISH AND INSTALL SIGN ON STREET LIGHT POLE OR POWER POLE.



S:\CADD\133-38 County Line Road LPP\133-38_41SI.dwg Jul 27, 2021 - 10:42am

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MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL-CITY: REGISTERED PROFESSIONAL ENGINEER, MICHAEL THORNTON, No. C44226, Exp. 6/30/23, CIVIL, STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — 07-26-21 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — 07-26-21 DATE

SEAL-DESIGN ENGINEER: REGISTERED PROFESSIONAL ENGINEER, TERRY M. RENNER, No. 69984, Exp. 9/30/22, CIVIL, STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF: — 07-26-21 DATE

BENCH MARK: B.M. NO. C-33-65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

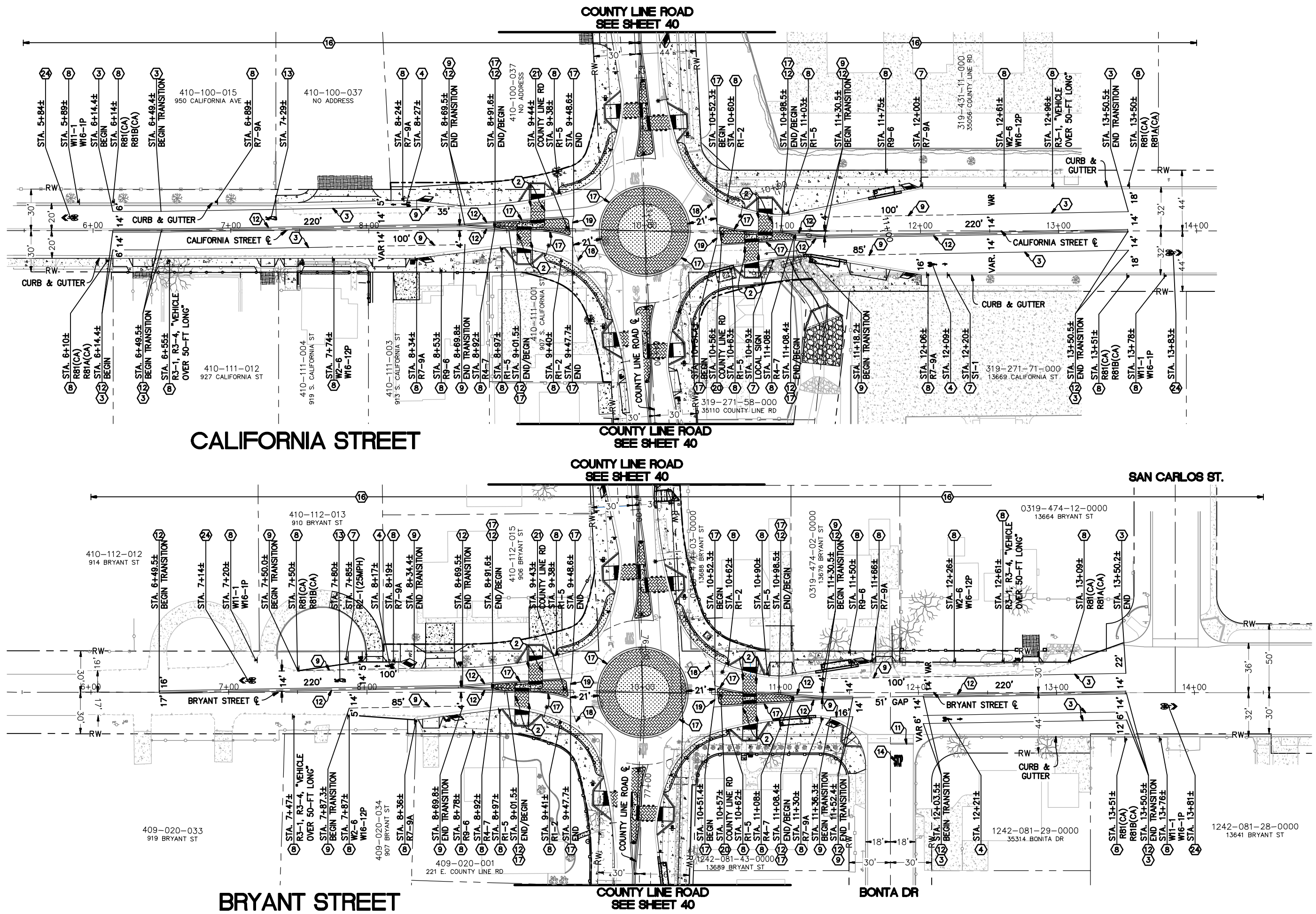
SCALE: AS SHOWN

CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
SIGNING & STRIPING – 3RD STREET & 2ND STREET
STA. 6+64.5± TO STA. 13+10.5± & STA. 6+64.5± TO STA. 13+33.0±

FOR: CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

41 OF 52 SHEETS



SIGNING AND STRIPING CONSTRUCTION NOTES:

(2) APPLY THERMOPLASTIC, 12" SOLID WHITE CROSSWALK LINE, 12' WIDE MEASURED FROM OUTSIDE OF STRIPING.

(3) APPLY THERMOPLASTIC, 6" SOLID WHITE BIKE LANE STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39.

(4) APPLY THERMOPLASTIC, BICYCLE LANE SYMBOL AND ARROW PER CA. MUTCD 2014, FIG. 9C-3B (CA).

(7) INSTALL EXISTING RELOCATED SIGN AS NOTED

(8) FURNISH AND INSTALL SIGN AS NOTED.

(9) APPLY THERMOPLASTIC, 6" WHITE BIKE LANE INTERSECTION STRIPE PER CA. MUTCD 2014, FIG. 3A-112 (CA), DETAIL 39A.

(11) APPLY THERMOPLASTIC, 12" SOLID WHITE LIMIT LINE.

(12) APPLY THERMOPLASTIC, DOUBLE YELLOW STRIPE PER CA. MUTCD 2014, FIG. 3A-104 (CA), DETAIL 22.

SIGNING AND STRIPING CONSTRUCTION NOTES (CONT.):

(13) APPLY THERMOPLASTIC, PAVEMENT LEGEND AS SHOWN PER CA MUTCD 2014, FIG. 3B-23 (CA).

(14) APPLY THERMOPLASTIC STOP LEGEND PER CA. MUTCD 2014, FIG. 3B-23 (CA)

(16) SANDBLAST ALL EXISTING CONFLICTING STRIPING AS REQUIRED.

(17) APPLY THERMOPLASTIC, 4" SOLID YELLOW LEFT EDGE LINE PER CA. MUTCD 2014, FIG. 3A-105 (CA), DETAIL 24.

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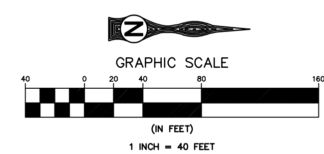
(19) APPLY THERMOPLASTIC, WHITE RIGHT EDGE LINE STRIPE PER CA. MUTCD 2014, FIG. 3A-106 (CA), DETAIL 27B.

(20) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF YUCAIPA STD. DWG. 421-0.

(21) FURNISH AND INSTALL STREET NAME SIGN AS NOTED AND PER CITY OF CALIMESA STANDARDS.

(24) APPLY THERMOPLASTIC, SHARE LANE SYMBOL AND STRIPED ARROWS PER CA. MUTCD 2014, FIG. 9C-9 (CA) AND 9C-10B (CA).



811
Know what's below.
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MARK	BY	DATE	REVISIONS	APPR.	DATE

SEAL-CITY
REGISTERED PROFESSIONAL ENGINEER — MICHAEL THORNTON — No. C44226 — Exp. 6/30/23 — CIVIL — STATE OF CALIFORNIA

CITY OF CALIMESA
PUBLIC WORKS DEPARTMENT

MICHAEL THORNTON P.E., CITY ENGINEER, RCE C44226 — 07-26-21 DATE

MARGARET MONSON, PUBLIC WORKS DIRECTOR — 07-26-21 DATE

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER — TERRY M. RENNER — No. 69984 — Exp. 9/30/22 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:
07-26-21 DATE

BENCH MARK: B.M. NO. C-33-65 ELEVATION= 2299.591'
BRASS DISK IN CONCRETE POST 60' WEST CALIMESA BLVD AND 15' SOUTH OF AVE "K" 3' NORTH OF DRINKING FOUNTAIN.

SCALE: AS SHOWN

CITY OF CALIMESA
STREET IMPROVEMENT PLANS
COUNTY LINE ROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
SIGNING & STRIPING – CALIFORNIA STREET & BRYANT STREET
STA. 6+24.2± TO STA. 13+50.6± & STA. 6+49.5± TO STA. 13+50.5±

FOR:
CITY OF CALIMESA PUBLIC WORKS DEPARTMENT

PLAN No.

42 of 52 SHEETS

S:\CADD\133-38 County Line Road LPP\133-38_42SI.dwg Jul 27, 2021 - 11:05am

GANDDINI GROUP INC.

714.795.3100 | ganddini.com

November 12, 2021

Mr. Ivano Stamegna, President
NOVA HOMES, INC.
1232 Village Way, Suite A
Santa Ana, California 92705

RE: Fallbrook Meadows Residential Project Vehicle Miles Traveled Screening Analysis
Project No. 19403

Dear Mr. Stamegna:

Ganddini Group, Inc. is pleased to provide this Vehicle Miles Traveled Screening Analysis for the proposed Fallbrook Meadows Residential Project in the City of Yucaipa. The purpose of this analysis is to assess potential vehicle miles traveled (VMT) impacts associated with the proposed project for compliance with California Environmental Quality Act (CEQA) requirements. This analysis supplements the *Fallbrook Meadows Residential Project Traffic Impact Analysis* (Ganddini Group, Inc., September 9, 2021) ["Project TIA"].

PROJECT DESCRIPTION

The 8.4-acre project site is located approximately 300 feet north of County Line Road between 3rd Street and 2nd Street in the City of Yucaipa, California. The project site is currently developed with single-family residential structures proposed to be demolished. The proposed project involves construction of a new apartment community, including up to 200 dwelling units, a clubhouse and community pool, a playground/park area, and parking and landscaping improvements. Gated vehicular access is proposed at 3rd Street and 2nd Street. The proposed site plan is shown in Attachment A.

PROJECT TRIPS

Table 1 shows the proposed project trips generation based on trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017). Trip generation rates for ITE Land Use Code 220 (multi-family residential) were used for the proposed project, and rates from ITE Land Use Code 210 (single-family residential) were used for the existing development to be displaced by the project.

As also shown in Table 1, the proposed project is forecast to generate a total of approximately 1,426 daily trips, including 89 during the AM peak hour and 108 trips during the PM peak hour.

BACKGROUND

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Traveled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending use of VMT for evaluating transportation impacts as of July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (State of California, December 2018) ["OPR Technical Advisory"] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

PROJECT SCREENING

The VMT screening assessment for CEQA compliance has been prepared in accordance with the methodology specified in the *City of Yucaipa Traffic Impact Analysis Guidelines (August 2020)* ["the City TIA guidelines"], which were developed based on guidance from the California Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (State of California, December 2018) ["OPR Technical Advisory"]. The City TIA Guidelines identify three types of screening that can be applied to effectively screen projects that typically reduce VMT and may be presumed to result in a less than significant VMT impact. The project need only satisfy one of the following three steps: 1) transit priority area (TPA) screening; 2) low VMT area screening; and 3) project type screening.

STEP 1: TPA SCREENING

Projects located within a TPA, defined as within one-half mile of major transit stop[1] or high-quality transit corridor[2], may be presumed to result in a less than significant VMT impact absent substantial evidence to the contrary. This presumption may not apply, however, if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the City with input from the Metropolitan Planning Organization): or
4. Replaces affordable residential units with a smaller number of moderate or high-income residential units.

Based on review the of the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool, the proposed project is not located within a TPA; therefore, the project does not satisfy the TPA screening criteria.

STEP 2: LOW VMT AREA SCREENING

Residential and office projects located within a low VMT generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and

[1] A major transit stop is defined as an existing rail transit station, ferry terminal with bus or rail service, or the intersection of two or more major bus routes with less than 15 minutes headways during the peak commute hours (Pub. Resources Code, § 21064.3.).

[2] Fixed route bus service with less than 15 minute headways during the peak commute hours (Pub. Resources Code, § 21155).

mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area. Based on the City-established thresholds, a project would satisfy the low VMT screening criteria if it is located in a traffic analysis zone (TAZ) that does not exceed the City average total origin/destination VMT per service population.

To identify if the project is in a low VMT area, the SBCTA VMT Screening Tool was used. The SBCTA VMT Screening Tool was developed from the San Bernardino Transportation Analysis Model (SBTAM) travel forecasting model to measure VMT performance for individual jurisdictions and for individual traffic analysis zones (TAZs). TAZs are geographic polygons similar to census block groups used to represent areas of homogenous travel behavior. Projects located in areas that incorporate similar features of the TAZ will tend to exhibit similar VMT. This presumption may not be appropriate if the project land uses would alter the existing built environment in such a way as to increase the rate or length of vehicle trips. Exhibit A shows the SBCTA VMT Screening Tool results for the project site.

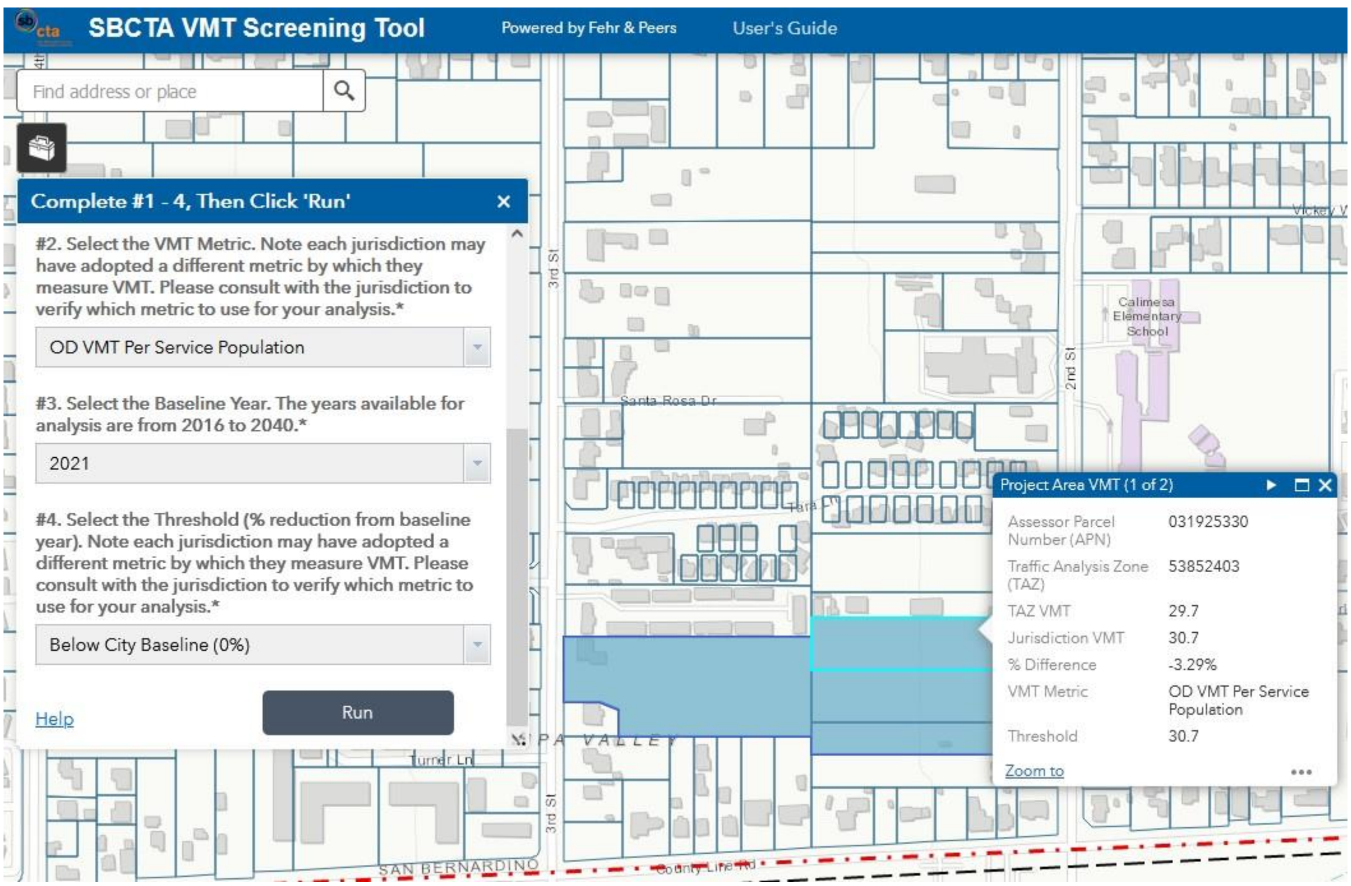


Exhibit A – SBCTA VMT Screening Tool Results

The proposed project is consistent with existing residential land uses in the project TAZ and there does not appear to be anything unique about the project that would otherwise be mis-represented utilizing the data from the SBCTA VMT Screening Tool. Based on the SBCTA VMT Screening Tool assessment, the proposed project is located within TAZ 53852403. As shown on Exhibit A, the baseline year (2021) VMT per service population for the project TAZ is equal to 29.7 and the City baseline is equal to 30.7. Therefore, the proposed project satisfies the City-established screening criteria for projects located in low VMT areas.

STEP 3: PROJECT TYPE SCREENING

The City TIA Guidelines identify the following types of projects that may be presumed to have a less than significant VMT impact as they are local serving and thus can be expected to reduce VMT or they are small enough to have a negligible impact:

- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
  - Gas stations
  - Banks
  - Restaurants
  - Shopping Center
- Local-serving medical office less than 100,000 square feet
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Hotels (non-destination or resort; no banquet or special event space)
- Affordable or supportive housing[3]
- Assisted living facilities
- Senior housing (as defined by HUD)
- Projects generating less than 400 daily vehicle trips. This generally corresponds to the following "typical" development potentials:
  - 42 single family housing units
  - 54 multi-family, condominiums, or townhouse housing units
  - 41,000 sq. ft. of office
  - 80,000 sq. ft. of light industrial
  - 229,000 sq. ft. of warehousing
  - 285,000 sq. ft. of high cube transload and short-term storage warehouse

The proposed project does not consist of the identified project types and therefore does not satisfy the City-established project type screening criteria.

PROJECT VMT IMPACT ASSESSMENT

As previously noted, the baseline year (2021) VMT per population for the project TAZ is equal to 29.7 and the City-established threshold is equal to 30.7. Therefore, the proposed project is below the City baseline by approximately 3.29 percent without implementation of any project design features or mitigation measures that would reduce the project's baseline VMT. Therefore, the project satisfies the low VMT screening criteria.

[3] The project must provide 100% of residential units as affordable or supportive housing.

Mr. Ivano Stamegna, President
NOVA HOMES, INC.
November 12, 2021

CONCLUSIONS

The proposed project satisfies the City-established screening criteria for projects located in low VMT areas and may be presumed less than significant VMT impact.

It has been a pleasure to assist you with this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 795-3100.

Sincerely,
GANDDINI GROUP, INC.

Perrie Ilercil, P.E. (AZ)
Senior Engineer

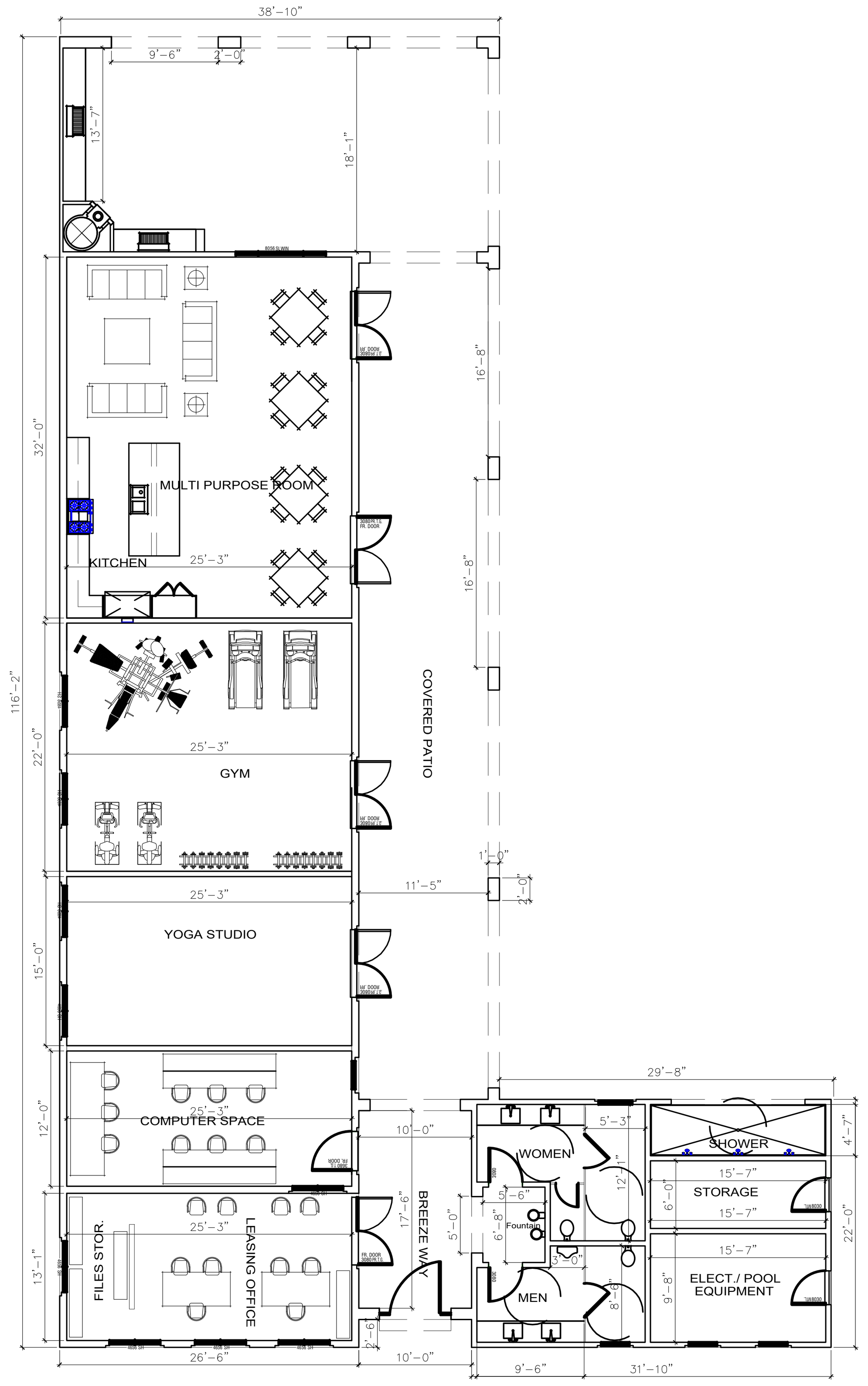
Giancarlo Ganddini, PE, PTP
Principal

Attachment A

Site Plan

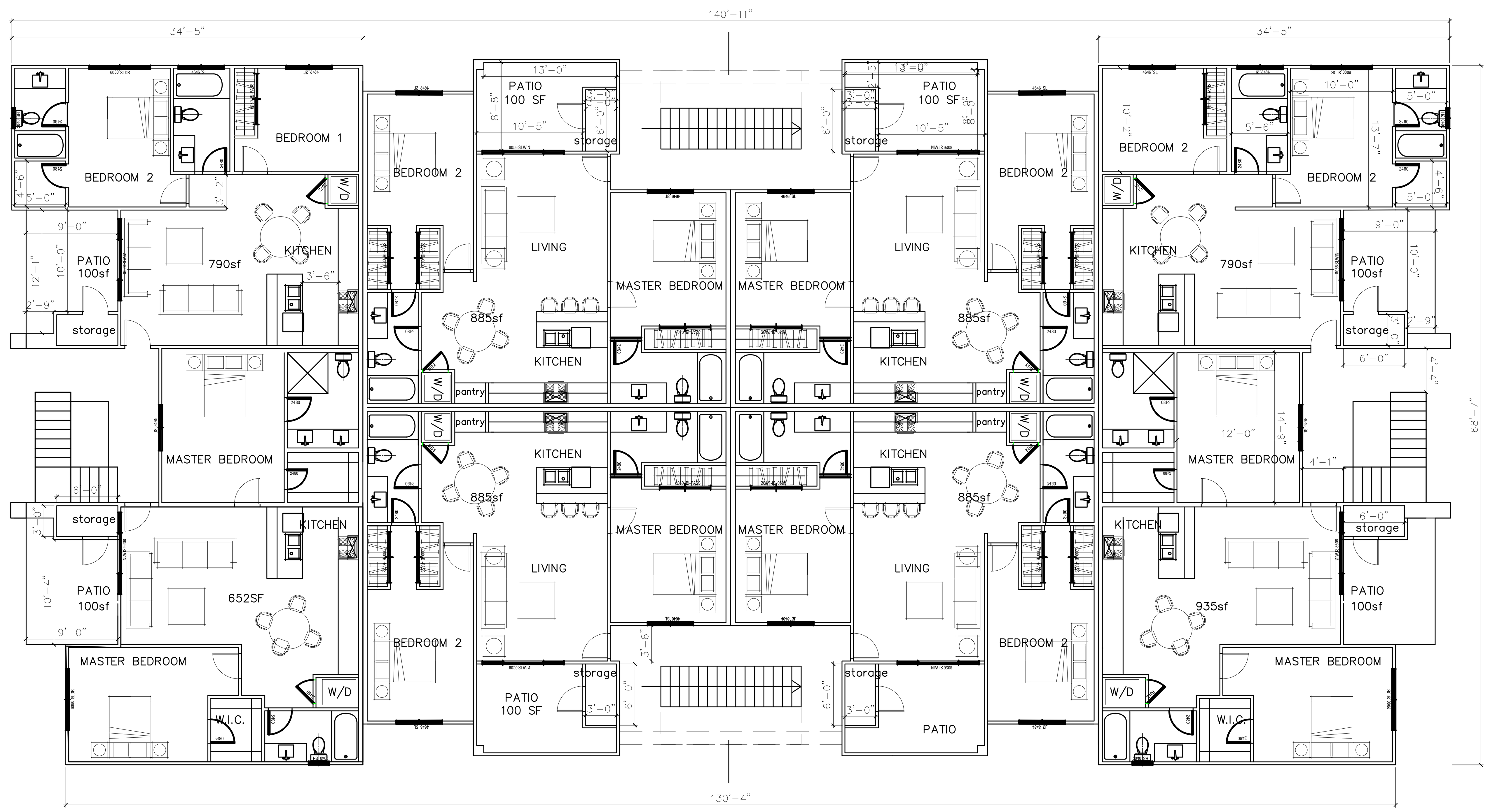
CLUBHOUSE FLOOR PLAN

N.T.S.



BUILDING FLOOR PLAN

N.T.S.



TABULATION

APARTMENT BUILDINGS - 3 STORY

BUILDING NAME	# OF BUILDINGS	COVERAGE	# UNITS
16 PLEX	2	9,319 S.F.	32
24 PLEX	7	9,319 S.F.	168
		TOTAL UNITS =	200

UNITS PER STORY:	TOTAL
1- 1 BEDROOM, 1 BATH, 652 S.F.	25
1- 2 BEDROOM, 2 BATH, 777 S.F.	25
4- 2 BEDROOM, 2 BATH, 878 S.F.	100
1- 2 BEDROOM, 2 BATH, 935 S.F.	25
1- 3 BEDROOM, 2 BATH, 1,075 S.F.	25
	200

CLUBHOUSE- 4,159 SF.	
COVERED PARKING STALLS REQUIRED:	200
COVERED PARKING STALLS PROVIDED:	254
TOTAL NUMBER OF STALLS REQUIRED:	405
TOTAL NUMBER OF STALLS PROVIDED:	414
GROSS ACREAGE: 8.4 AC.	DENSITY: 200/ 8.4 = 24 DU

N.T.S.

DATE: 06/29/2021

AMERIMAX COMMUNITIES INC.

Building Exceptional Intergenerational Communities

PROPOSED PRELIMINARY SITE PLAN FOR

FALLBROOK MEADOWS

200 RESIDENTIAL APARTMENT UNITS

N

SCALE = 1" = 40'