



4.2 Transportation

This section addresses the City of Murrieta's existing traffic conditions, the impacts of future traffic growth, planned physical improvements, and additional improvements to accommodate growth expected with the proposed Project. This section is based upon the (August 21, 2019) *Traffic Impact Analysis* (2019 TIA), prepared by Iteris and the (August 16, 2019) Vehicle Miles Traveled (VMT) Analysis Memorandum prepared by VRPA Technologies. The studies are included as Appendix E. For all other intersection and/or roadway segments, refer to the previous 2011 Certified EIR.

4.2.1 Regulatory Setting

Since the certification of the 2011 General Plan EIR, the state of California has amended its significance criteria for transportation. The significance criteria for transportation that is listed below in Section 4.2.3 (Significance Criteria Thresholds) is different than the criteria used in the 2011 Certified EIR (Section 5.4.3). The most significant difference in the criteria relates to Vehicle Miles Traveled (VMT) and California Senate Bill 743 which is described below.

CALIFORNIA STATE SENATE BILL 743 (SB 743)

SB 743 (Steinberg, 2013) creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, it requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts. OPR identified VMT as the new metric for transportation analysis. VMT refers to the amount and distance of automobile travel attributable to a project. Determining the significance of transportation projects as it relates to SB 743 is defined in CEQA Guidelines section 15064.3. The City of Murrieta has the discretion (per CEQA Guidelines section 15064.3) to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure; in addition, the City of Murrieta may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. For the purposes of this General Plan Update, a decrease in VMT compared to the 2011 General Plan should be presumed to have a less than significant transportation impact.

4.2.2 Environmental Setting

This section is based upon the 2019 TIA and describes the intersections and roadway segments studied and methodology utilized in the 2019 TIA. For all other intersections and/or roadway segments not discussed below, refer to the previous 2011 Certified EIR.

STUDY AREA

The study area for analysis of the 2019 TIA includes the following twenty-three (23) intersections within the City or sphere of influence. Exhibit 4.2-1 (Figure 1-2 in the TIA) shows



the locations of the study intersections. Note that three of the locations are future intersections. The intersections represent key locations in the vicinity of the land use change areas, where major arterials intersect, and where land use trip distribution is anticipated.

1. Jefferson Avenue/Murrieta Hot Springs Road
2. Madison Avenue/Murrieta Hot Springs Road
3. Menifee Road/Scott Road (sphere of influence)
4. Winchester Road (SR-79)/Scott Road (sphere of influence)
5. Antelope Road/Keller Road (renamed Warm Springs Parkway/Keller Road in future conditions)
6. Antelope Road/Baxter Road (renamed Warm Springs Parkway/Baxter Road in future conditions)
7. California Oaks Road/Clinton Keith Road
8. Jefferson Avenue/Kalmia Street
9. Winchester Road (SR-79)/Murrieta Hot Springs Road
10. Hancock Avenue/Los Alamos Road
11. I-215 Southbound Ramps/Los Alamos Road
12. Whitewood Road/Murrieta Hot Springs Road
13. Nutmeg Street/Clinton Keith Road
14. Leon Road/Scott Road (sphere of influence)
15. Mitchell Road/Clinton Keith Road
16. I-215 Northbound Ramps/Clinton Keith Road
17. Whitewood Road/Clinton Keith Road
18. Jefferson Avenue/Los Alamos Road
19. Whitewood Road/Linnel Lane
20. Whitewood Road/Baxter Road
21. Warm Springs Parkway/Linnel Lane (future intersection)
22. Briggs Road/Keller Road (future intersection, sphere of influence)
23. Winchester Road (SR-79)/Clinton Keith Road-Benton Road (future intersection)

In addition, the study area for analysis includes the following twenty-two (22) roadway segments within the City or sphere of influence:

1. Scott Road east of Menifee Road
2. Scott Road between Leon Road and Winchester Road (SR-79)
3. Keller Road between I-215 and Whitewood Road
4. Keller Road east of Whitewood Road (future conditions only)



5. Baxter Road between Antelope Road and Whitewood Road
6. Antelope Road between Baxter Road and Clinton Keith Road
7. Whitewood Road between Baxter Road and Clinton Keith Road
8. Clinton Keith Road west of Nutmeg Street
9. Clinton Keith Road east of California Oaks Road
10. Clinton Keith Road between I-215 and Whitewood Road
11. Clinton Keith Road east of Whitewood Road
12. California Oaks Road south of Clinton Keith Road
13. California Oaks Road south of I-15
14. Jefferson Avenue south of California Oaks Road
15. Los Alamos Road between I-215 and Whitewood Road
16. Los Alamos Road between Monroe Avenue and Hancock Avenue
17. Whitewood Road north of Murrieta Hot Springs Road
18. Jefferson Avenue south of Murrieta Hot Springs Road
19. Murrieta Hot Springs Road between I-15 and I-215
20. Murrieta Hot Springs Road between Alta Murrieta Drive and Whitewood Road
21. Murrieta Hot Springs Road between Whitewood Road and Margarita Road
22. Murrieta Hot Springs Road between Margarita Road and Winchester Road (SR-79)

ROADWAY CONFIGURATIONS

Below are descriptions of the existing characteristics of key roadways in the study area:

- Keller Road, oriented in an east-west direction, is a two- to three-lane undivided roadway within the City of Murrieta. As part of the Circulation Element, Keller Road is planned to provide access to I-215 via a future interchange. The posted speed limit is 40 mph.
- Clinton Keith Road, oriented in an east-west direction, is generally a four-lane roadway west of I-215, providing access to both I-15 and I-215 via interchanges. East of I-215, Clinton Keith Road is a six-lane divided roadway that currently terminates at Leon Road. The posted speed limit is 50 mph west of I-215 and 45 mph east of I-215.
- California Oaks Road, oriented in a northeast-southwest direction, is a four-lane divided roadway providing access to I-15. California Oaks Road terminates on the north at Clinton Keith Road. The posted speed limit is 40 mph west of Jackson Avenue and 45 mph east of Jackson Avenue.
- Los Alamos Road, oriented in a northeast-southwest direction, is a four lane divided roadway providing access to I-215. The posted speed limit is 45 mph. West of Jefferson Avenue, Los Alamos Road transitions to a two-lane roadway with the name changing to Ivy Street.



- Murrieta Hot Springs Road, oriented in an east-west direction, is generally a six-lane divided roadway providing access to both I-15 and I-215 via interchanges. West of I-15, Murrieta Hot Springs Road terminates at Jefferson Avenue. The posted speed limit is 45 mph.
- Jefferson Avenue, oriented in a northwest-southeast direction, is generally a four-lane divided roadway (two-lane sections exist) running parallel to I-15. Jefferson Avenue terminates on the north end at Grizzly Ridge Drive. The posted speed limit varies between 40, 45, and 50 mph.
- Whitewood Road, oriented in a north-south direction, is a four-lane divided roadway running parallel to I-215. Whitewood Road terminates on the south within a residential area south of Murrieta Hot Springs Road. The posted speed limit is 45 mph.

GENERAL METHODOLOGY

The quality of traffic operations is now characterized using the concept of VMT. The VMT method refers to the amount and distance of automobile travel attributable to a project. As opposed to the 2011 General Plan which used the concept of level of service (LOS).

LOS is defined by a range of grades from A (best) to F (worst). At intersections, LOS “A” represents relatively free flow operating conditions with little or no delay. LOS “F” is characterized by extremely unstable flow conditions, severe congestion and delays with traffic volumes at or near the intersection’s design capacity. The City of Murrieta uses LOS as a tool for defining areas where intersection improvements and roadway configurations could be upgraded.

VMT is typically calculated using travel demand models, which estimate the total number and length of vehicle trips for a given area. The proposed Project includes a VMT analysis memorandum included as Appendix G. The VMT analysis compares the existing and proposed land-use designations discussed in section 4-1 and determines an increase or decrease in VMT. The analysis is completed by the following two calculations:

1. Adjustment for employment-related land uses: Increase in Daily VMT = Excess Employees x Average Daily Trips per Employee x (Average Trip Length to External County Job Location – Average Trip Length to Murrieta Job Location)
2. Adjustment for residential units near the proposed Innovation center: Increase in Daily VMT = Residential Units Oriented Toward Innovation Center x Average Daily Employment Trips per Unit x (Average Trip Length to External County Job Location – Average Trip Length to Innovation Center)

The baseline VMT methodology and data were calculated for 2040 conditions, based on the VMT results produced by the regional transportation model. VMT results were calculated for the base year 2016 using the regional transportation model’s base year scenario which looks at; population plus employment, home-based VMT per capita, and home-based work. VMT’s per worker were calculated using outputs from the Southern California Association of Governments’ (SCAG) Regional Transportation Plan travel forecasting model and the Riverside County Transportation Analysis Model (RIVTAM). VMT results were calculated for years 2020, 2030, and 2035 using linear interpolation of the results for 2016 and 2040.



LEVEL OF SERVICE ANALYSIS

The LOS analysis provided below provides a detailed assessment of the traffic operations within the City of Murrieta. Analysis of traffic operations were conducted using the Highway Capacity Manual (HCM) 2010 Edition. LOS analysis was calculated at the study area intersections using Synchro 9 software. All traffic signal phasing splits were optimized for the purposes of this analysis. Table 4.2-1 presents a brief description of each level of service letter grade, as well as the range of HCM average intersection delay associated with each grade for both signalized and unsignalized intersections.

Table 4.2-1: Intersection Level of Service Definitions

| Level Of Service | Description | Signalized Intersection Delay (seconds per vehicle) | Unsignalized Intersection Delay (seconds per vehicle) |
|------------------|---|---|---|
| A | Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. | < 10 | < 10 |
| B | Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form. | >10 and < 20 | >10 and < 15 |
| C | Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted. | >20 and < 35 | >15 and < 25 |
| D | Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. | >35 and < 55 | >25 and < 35 |
| E | Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes. | >55 and < 80 | >35 and < 50 |
| F | Forced flow. Represents jammed conditions. Backups form locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow. | > 80 | > 50 |

The City's Level of Service standard, as published in the City's current General Plan, Chapter IV, is LOS D for peak hour intersection operations. Table 4.2-2 presents the daily roadway capacity values per the current Circulation Element, for use in the roadway segment LOS analysis.



Table 4.2-2: Daily Roadway Capacity

| Facility | Lane Configuration | Maximum Capacity (veh/day) |
|-----------------------------|--------------------|----------------------------|
| Collector | 2-lane Divided | 13,000 |
| Secondary | 4-lane Divided | 25,900 |
| Major | 4-lane Divided | 34,100 |
| Arterial | 4-lane Divided | 35,900 |
| Arterial and Urban Arterial | 6-lane Divided | 53,900 |
| Augmented Urban Arterial | 8-lane Divided | 71,800 |

Table 4.2-3 summarizes the LOS criteria, measured in terms of Volume-to-Capacity ratio, for use in the roadway segment analysis.

Table 4.2-3: Roadway Segment Level of Service Criteria

| Level of Service (LOS) | Volume-to-Capacity Ratio |
|------------------------|--------------------------|
| A | 0.00 – 0.60 |
| B | > 0.60 – 0.70 |
| C | > 0.70 – 0.80 |
| D | > 0.80 – 0.90 |
| E | > 0.90 – 1.00 |
| F | > 1.00 |

The City’s Level of Service standard is LOS C for roadway segment operations, unless segments are within General Plan Focus Areas where LOS D is allowed.

Roadway Segments:

Traffic volume increases from public or private projects that result in the following criteria will have a significant traffic volume or level of service traffic operations impact on a roadway segment:

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a roadway segment currently operating at LOS E or F, or will cause a roadway segment to operate at LOS E or LOS F as a result of the proposed Project as identified in Table 4.2-4.



Table 4.2-4: Measures of Significant Project Impacts to Congestion on Roadway Segments

| Level of Service | Volume-to-Capacity Ratio | | |
|------------------|--------------------------|---------------|---------------|
| | Two-lane Road | Two-lane Road | Six-lane Road |
| LOS E | 200 ADT | 400 ADT | 600 ADT |
| LOS F | 100 ADT | 200 ADT | 300 ADT |

Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The City may also determine impacts have occurred on roads even where a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining roadway capacity.

Intersections:

Table 4.2-5 summarizes the proposed Project impacts for signalized and unsignalized intersections.

Signalized

The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a signalized intersection operating at LOS E or LOS F, or will cause a signalized intersection to operate at LOS E or LOS F as identified in Table 4.2-5.

Unsignalized

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact to an unsignalized intersection as listed in Table 4.2-5 and described in text below:

- The additional or redistributed traffic generated by the proposed Project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed traffic generated by the proposed Project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed traffic generated by the proposed Project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed traffic generated by the proposed Project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal prioritization list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.



Table 4.2-5: Measures of Significant Project Impacts to Congestion on Intersections

| Level of Service | Allowable Increases on Congested Intersections | |
|------------------|---|---|
| | Signalized | Unsignalized |
| LOS E | Delay of 2 seconds or less | 20 or less peak hour trips on a critical movement |
| LOS F | Either a delay of 1 second, or 5 peak hour trips or less on a critical movement | 5 or less peak hour trips on a critical movement |

Notes:

1. A critical movement is an intersection movement (left-turn, through movement, right-turn) that experiences excessive queues, which typically operate at LOS F. Also, if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The City may also determine impacts have occurred at intersections even when a project's direct or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining intersection capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement. Exceedance of either criteria results in a significant impact.

TRAFFIC FORECASTING

The traffic forecasting approach, as discussed in the 2019 TIA, involved the development of a focused multi-modal, multi-class travel demand model for the City of Murrieta. This focused model is consistent with the 2016 SCAG RTP/SCS travel demand model assumptions and inputs as well as compatible with the current City of Murrieta Transportation Analysis Zone (TAZ) structure and land use as part of the adopted General Plan. The base year of 2016 and the forecast year of 2040 were obtained from the 2016 SCAG RTP/SCS travel demand model. The Model was developed using the TransCAD software package, the software platform currently used by SCAG for regional modeling. The City's highway network was updated and refined to include all key general plan roadways in the City of Murrieta. The transit network was also reviewed and found to be a satisfactory representation of transit services. The Model is consistent with the traditional four step modeling process, which includes trip generation, trip distribution, mode split, and traffic assignment.

The zone structure of the 2040 forecast year is identical to the zone structure of the base year, with only data inputs being modified. The land use data, described in Table 4.2-6 below, for each TAZ is converted to three (3) major socioeconomic variables (population, households and employment) and further disaggregated into secondary variables (e.g. household size, age, income level, employment type, etc.). Table 4.2-7 summarizes the socioeconomic data (SED) under the currently adopted General Plan, the proposed Project, and the net change, applied as part of the traffic forecasting process.



Table 4.2-6: Proposed Project Net Land Use Changes

| Land Use Description | Net Change |
|---------------------------|-----------------------|
| Large Lot Residential | -32 dwelling units |
| Single-Family Residential | -192 dwelling units |
| Multi-family Residential | +1,796 dwelling units |
| Commercial | +176,749 sq ft |
| Office & Research Park | -9,841,655 sq ft |
| Civic & Institutional | -91 sq ft |
| Innovation (new) | +7,259,396 sq ft |
| Mixed-Use | 0 sq ft |
| Business Park | 0 sq ft |
| Industrial | 0 sq ft |

Table 4.2-7: Citywide Socioeconomic Data Summary

| Year | Currently Adopted General Plan | | | Focused General Plan Update | | | Net Change | | |
|------|--------------------------------|---------|--------|-----------------------------|---------|--------|------------|-------|--------|
| | HH | Pop | Emp | HH | Pop | Emp | HH | Pop | Emp |
| 2040 | 44,805 | 135,419 | 95,029 | 46,377 | 139,825 | 92,087 | 1,572 | 4,406 | -2,942 |

Note: HH = Households, Pop = Population, Emp = Employment

The buildout year in the currently adopted General Plan is 2035. Thus, the year 2040 volumes were interpolated to the year 2035 and were used for the purposes of analyzing the traffic impacts of the focused proposed Project, as opposed to 2040 which were taken directly from the 2016 SCAG RTP/SCS travel-demand model. The future year 2035 circulation network is anticipated to be modified significantly from the current network. For example, major planned enhancements such as a new I-215 interchange at Keller Road, extension of Keller Road to Leon Road, extension of Clinton Keith Road east of Whitewood Road, and a new Warm Springs Parkway running parallel to I-215 are anticipated in the City’s buildout condition. As such, more so than simply a change in traffic volume magnitude, traffic patterns in the study area will be largely different than existing conditions. Existing turning movement count data is typically used as a “pivot point” for projecting future year turning movement volumes, where intersection and roadway capacities remain mostly static between baseline and future (i.e., a currently built out environment). However, considering Murrieta’s long-range planned buildout condition, this method is not applicable. Rather, turning movement volumes at the study intersections are acquired directly from the model, consistently applied to the “without project” and “with project” conditions. Future year peak hour turning movements acquired from the traffic model were adjusted to year 2035, from the model buildout year 2040. As part of typical post-processing, turning movements were scaled and balanced where appropriate in order to ensure consistent traffic flow.



4.2.3 Significance Threshold Criteria:

Since the certification of the 2011 General Plan EIR, the state of California has amended its significance criteria as discussed above in Section 4.2.1. SB 743 changes the requirements local agencies use to determine transportation impacts under CEQA. Historically, delay and congestion were the metrics used when evaluating transportation issues. To implement the legislation, lead agencies will need to determine appropriate VMT methodologies, thresholds, and feasible mitigation measures. According to Section 15064.7 of the CEQA Guidelines, lead agencies have discretion when setting significance thresholds.

Traffic and circulation impacts resulting from the implementation of the proposed Project may be considered significant if they would result in the following:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities.
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)

Based on these standards, the effects of the proposed Project have been categorized as either a “less than significant impact” or a “potentially significant impact.” Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant unavoidable impact.

4.2.4 Project Impacts and Mitigation Measures

PROPOSED PROJECT TRAFFIC OPERATIONS

- **IMPLEMENTATION OF THE PROPOSED PROJECT COULD CONFLICT WITH A PROGRAM PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT ROADWAY, BICYCLE AND PEDESTRIAN FACILITIES.**

Level of Significance Before Mitigation: Potentially Significant Impact

Impact Analysis:

FUTURE YEAR 2035 WITHOUT PROJECT

As mentioned, the buildout year in the currently adopted General Plan is 2035. Thus, the year 2040 volumes were interpolated to the year 2035 and were used for the purposes of analyzing the traffic impacts of the focused General Plan Update, as opposed to 2040 which were taken directly from the 2016 SCAG RTP/SCS travel-demand model. This section presents the analysis of traffic operations with the buildout of the currently adopted General Plan (i.e.,



“without project” conditions) in 2035. Future year 2035 without project traffic volumes were developed based on traffic modeling and post-processing procedures described in Section 5 of the 2019 TIA.

INTERSECTIONS

Table 4.2-8 summarizes the future year 2035 without project peak hour LOS at the study intersections. Exhibit 4.2-2 (Figure 6-1 in the TIA) shows the Future Year 2035 without Project Intersection Volumes and Exhibit 4.2-3 (Figure 6-2 in the TIA) shows the Future Year 2035 without Project Intersection Land Configurations. As shown in Table 4.2-8, the following 12 intersections are forecast to operate at LOS E or F:

- Jefferson Avenue/Murrieta Hot Springs Road
- Madison Avenue/Murrieta Hot Springs Road
- Winchester Road (SR-79)/Scott Road
- Warm Springs Parkway/Baxter Road
- California Oaks Road/Clinton Keith Road
- Jefferson Avenue/Kalmia Street
- Winchester Road (SR-79)/Murrieta Hot Springs Road
- Hancock Avenue/Los Alamos Road
- Whitewood Road/Murrieta Hot Springs Road
- Whitewood Road/Clinton Keith Road
- Whitewood Road/Baxter Road
- Winchester Road (SR-79)/Clinton Keith Road



Table 4.2-8: Future Year 2035 Without Project Intersection Peak Hour Level of Service

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|--------------|----------|--------------|----------|
| | | Delay (sec) | LOS | Delay (sec) | LOS |
| 1 Jefferson Ave/Murrieta Hot Springs Rd | signalized | 97.6 | F | 126.5 | F |
| 2 Madison Ave/Murrieta Hot Springs Rd | signalized | 46.9 | D | 99.2 | F |
| 3 Menifee Rd/Scott Rd | signalized | 28.8 | C | 31.9 | C |
| 4 Winchester Rd (SR-79)/Scott Rd | signalized | 50.3 | D | 156.1 | F |
| 5 Warm Springs Pkwy/Keller Rd | signalized | 37.0 | D | 42.5 | D |
| 6 Warm Springs Pkwy/Baxter Rd | signalized | 67.1 | E | 52.7 | D |
| 7 California Oaks Rd/Clinton Keith Rd | signalized | 44.5 | D | 63.7 | E |
| 8 Jefferson Ave/Kalmia St | signalized | 58.7 | E | 50.3 | D |
| 9 Winchester Rd (SR-79)/Murrieta Hot Springs Rd | signalized | 125.2 | F | 254.2 | F |
| 10 Hancock Ave/Los Alamos Rd | signalized | 139.1 | F | 144.9 | F |
| 11 I-215 SB Ramps/Los Alamos Rd | signalized | 26.8 | C | 32.9 | C |
| 12 Whitewood Rd/Murrieta Hot Springs Rd | signalized | 96.1 | F | 143.9 | F |
| 13 Nutmeg St/Clinton Keith Rd | signalized | 30.7 | C | 32.2 | C |
| 14 Leon Rd/Scott Rd | signalized | 14.4 | B | 12.7 | B |
| 15 Mitchell Rd/Clinton Keith Rd | signalized | 34.9 | C | 34.7 | C |
| 16 I-215 NB Ramps/Clinton Keith Rd | signalized | 29.1 | C | 35.9 | D |
| 17 Whitewood Rd/Clinton Keith Rd | signalized | 57.3 | E | 76.5 | E |
| 18 Jefferson Avenue/Los Alamos Rd | signalized | 28.3 | C | 37.7 | D |
| 19 Whitewood Rd/Linnel Ln | signalized | 14.5 | B | 15.4 | B |
| 20 Whitewood Rd/Baxter Rd | signalized | 25.6 | C | 58.8 | E |
| 21 Warm Springs Pkwy/Linnel Ln | signalized | 16.9 | B | 29.0 | C |
| 22 Briggs Rd/Keller Rd | signalized | 17.3 | B | 19.9 | B |
| 23 Winchester Rd (SR-79)/Clinton Keith Rd | signalized | 93.5 | F | 101.9 | F |

Notes:
LOS = Level of Service.

ROADWAY SEGMENTS

Table 4.2-9 summarizes the future year 2035 without project V/C ratios and LOS at the roadway segments, assuming lane configurations consistent with the current Circulation Element as well as the maximum daily roadway capacity values per the current Circulation Element. As shown in Table 4.2-9, the following 6 roadways are forecast to operate at LOS D, E, or F in future year 2035 without project conditions:

- Clinton Keith Road east of California Oaks Road
- Jefferson Avenue south of California Oaks Road (acceptable, as part of GP focus area)
- Los Alamos Road between Monroe Avenue and Hancock Avenue
- Murrieta Hot Springs Road between I-15 and I-215
- Murrieta Hot Springs Road between Alta Murrieta Drive and Whitewood Road



- Murrieta Hot Springs Road between Whitewood Road and Margarita Road

Table 4.2-9: Future Year 2035 Without Project Daily Roadway Segment Level of Service

| | Segment | Lane Configuration | Capacity (vehicles/day) | 2035 Without Project ADT | Volume to Capacity Ratio (V/C) | LOS |
|----|--|--------------------|-------------------------|--------------------------|--------------------------------|----------|
| 1 | Scott Rd east of Menifee Rd | 6D | 53,900 | 9,550 | 0.18 | A |
| 2 | Scott Rd between Leon Rd and Winchester Rd (SR-79) | 6D | 53,900 | 8,120 | 0.15 | A |
| 3 | Keller Rd between I-215 and Whitewood Rd | 6D | 53,900 | 12,610 | 0.23 | A |
| 4 | Keller Rd east of Whitewood Rd | 4D | 25,900 | 10,970 | 0.42 | A |
| 5 | Baxter Rd between Antelope Rd and Whitewood Rd | 4D | 25,900 | 15,270 | 0.59 | A |
| 6 | Warm Springs Pkwy between Baxter Rd and Clinton Keith Rd | 4D | 34,100 | 12,150 | 0.36 | A |
| 7 | Whitewood Rd between Baxter Rd and Clinton Keith Rd | 4D | 34,100 | 12,250 | 0.36 | A |
| 8 | Clinton Keith Rd west of Nutmeg St | 6D | 53,900 | 23,190 | 0.43 | A |
| 9 | Clinton Keith Rd east of California Oaks Rd | 6D | 53,900 | 43,780 | 0.81 | D |
| 10 | Clinton Keith Rd between I-215 and Whitewood Rd | 6D | 53,900 | 22,500 | 0.42 | A |
| 11 | Clinton Keith Rd east of Whitewood Rd | 6D | 53,900 | 24,990 | 0.46 | A |
| 12 | California Oaks Rd south of Clinton Keith Rd | 4D | 34,100 | 22,960 | 0.67 | B |
| 13 | California Oaks Rd south of I-15 | 6D | 53,900 | 25,130 | 0.47 | A |
| 14 | Jefferson Ave south of California Oaks Rd | 6D | 53,900 | 44,190 | 0.82 | D |
| 15 | Los Alamos Rd between I-215 and Whitewood Rd | 6D | 53,900 | 23,850 | 0.44 | A |
| 16 | Los Alamos Rd between Monroe Ave and Hancock Ave | 4D | 34,100 | 36,560 | 1.07 | F |
| 17 | Whitewood Rd north of Murrieta Hot Springs Rd | 4D | 34,100 | 6,040 | 0.18 | A |
| 18 | Jefferson Ave south of Murrieta Hot Springs Rd | 6D | 53,900 | 37,150 | 0.69 | B |
| 19 | Murrieta Hot Springs Rd between I-15 and I-215 | 8D | 71,800 | 74,560 | 1.04 | F |
| 20 | Murrieta Hot Springs Rd between Alta Murrieta Dr and Whitewood Rd | 6D | 53,900 | 49,280 | 0.91 | E |
| 21 | Murrieta Hot Springs Rd between Whitewood Rd and Margarita Rd | 6D | 53,900 | 47,680 | 0.88 | D |
| 22 | Murrieta Hot Springs Rd between Margarita Rd and Winchester Rd (SR-79) | 6D | 53,900 | 38,600 | 0.72 | C |

Notes:

ADT volume in 2035 is rounded to the nearest 10 vehicles.

LOS = Level of Service.



FUTURE YEAR 2035 WITH PROJECT

This section presents the analysis of traffic operations with the buildout of the proposed Project (i.e., “with project” conditions) in 2035. In addition, based on an initial model run and discussions with City Public Works Department staff, the following roadway classification or configuration modifications to the currently adopted circulation network were identified as shown on Exhibit 4.2-4 (Figure 7-1 in the TIA):

- Hawthorn Street is downgraded from an Arterial road (6-lane) (in the current Circulation Element) to a Secondary road (4-lane), between Washington Avenue and Jefferson Avenue;
- Monroe Avenue is downgraded from a Major road (4-lane) (in the current Circulation Element) to an Industrial Collector road (2-lane), between Guava Avenue and Larchmont Lane;
- Ivy Street is downgraded from a Major road (in the current Circulation Element) to a Secondary road, between Washington Avenue and Jefferson Avenue; and
- Madison Avenue is downgraded from a Major road (in the current Circulation Element) to a Secondary road, between Guava Street and Date Street.

INTERSECTIONS

Table 4.2-10 summarizes the future year 2035 with project peak hour LOS at the study intersections. With the exception of the downgraded roadway classifications described, the LOS analysis utilizes the same intersection lane configurations used in the “without project” scenario. Exhibit 4.2-5 (Figure 7-2 in the TIA) shows the future year 2035 with project peak hour intersection volumes.

As shown in Table 4.2-10, traffic related to proposed Project’s land use modifications are forecast to result in significant traffic impacts, based on the significance criteria, during one or both peak hours, at the following fifteen (15) intersections in future year 2035:

- Jefferson Avenue/Murrieta Hot Springs Road
- Madison Avenue/Murrieta Hot Springs Road
- Warm Springs Parkway/Baxter Road
- California Oaks Road/Clinton Keith Road
- Jefferson Avenue/Kalmia Street
- Winchester Road (SR-79)/Murrieta Hot Springs Road
- Hancock Avenue/Los Alamos Road
- Whitewood Road/Murrieta Hot Springs Road
- Nutmeg Street/Clinton Keith Road
- Mitchell Road/Clinton Keith Road
- I-215 Northbound Ramps/Clinton Keith Road
- Whitewood Road/Clinton Keith Road
- Whitewood Road/Baxter Road
- Warm Springs Parkway/Linnel Lane
- Winchester Road (SR-79)/Clinton Keith Road



Table 4.2-10: Future Year 2035 With Project Intersection Peak Hour Level of Service

| Intersection | Future Year 2035 Without Project | | | | Future Year 2035 With Project | | | | Change in AM Delay (sec) | Change in PM Delay (sec) | Significant Impact? |
|---|----------------------------------|-----|--------------|-----|-------------------------------|-----|--------------|-----|--------------------------|--------------------------|---------------------|
| | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | | | |
| | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | | | |
| 1 Jefferson Ave/Murrieta Hot Springs Rd | 97.6 | F | 126.5 | F | 186.3 | F | 163.2 | F | 88.7 | 36.7 | Yes |
| 2 Madison Ave/Murrieta Hot Springs Rd | 46.9 | D | 99.2 | F | 55.5 | E | 108.9 | F | 8.6 | 9.7 | Yes |
| 3 Menifee Rd/Scott Rd | 28.8 | C | 31.9 | C | 28.7 | C | 30.8 | C | -0.1 | -1.1 | No |
| 4 Winchester Rd (SR-79)/Scott Rd | 50.3 | D | 156.1 | F | 50.3 | D | 135.9 | F | 0.0 | -20.2 | No |
| 5 Warm Springs Pkwy/Keller Rd | 37.0 | D | 42.5 | D | 37.4 | D | 40.3 | D | 0.4 | -2.2 | No |
| 6 Warm Springs Pkwy/Baxter Rd | 67.1 | E | 52.7 | D | 68.7 | E | 72.5 | E | 1.6 | 19.8 | Yes |
| 7 California Oaks Rd/Clinton Keith Rd | 44.5 | D | 63.7 | E | 79.7 | E | 91.4 | F | 35.2 | 27.7 | Yes |
| 8 Jefferson Ave/Kalmia St | 58.7 | E | 50.3 | D | 153.5 | F | 75.0 | E | 94.8 | 24.7 | Yes |
| 9 Winchester Rd (SR-79)/Murrieta Hot Springs Rd | 125.2 | F | 254.2 | F | 197.2 | F | 299.8 | F | 72.0 | 45.6 | Yes |
| 10 Hancock Ave/Los Alamos Rd | 139.1 | F | 144.9 | F | 160.2 | F | 188.1 | F | 21.1 | 43.2 | Yes |
| 11 I-215 SB Ramps/Los Alamos Rd | 26.8 | C | 32.9 | C | 32.4 | C | 52.6 | D | 5.6 | 19.7 | No |
| 12 Whitewood Rd/Murrieta Hot Springs Rd | 96.1 | F | 143.9 | F | 130.1 | F | 160.4 | F | 34.0 | 16.5 | Yes |
| 13 Nutmeg St/Clinton Keith Rd | 30.7 | C | 32.2 | C | 161.2 | F | 126.3 | F | 130.5 | 94.1 | Yes |
| 14 Leon Rd/Scott Rd | 14.4 | B | 12.7 | B | 14.4 | B | 12.6 | B | 0.0 | -0.1 | No |
| 15 Mitchell Rd/Clinton Keith Rd | 34.9 | C | 34.7 | C | 63.0 | E | 62.5 | E | 28.1 | 27.8 | Yes |
| 16 I-215 NB Ramps/Clinton Keith Rd | 29.1 | C | 35.9 | D | 65.3 | E | 42.6 | D | 36.2 | 6.7 | Yes |
| 17 Whitewood Rd/Clinton Keith Rd | 57.3 | E | 76.5 | E | 52.2 | D | 85.3 | F | -5.1 | 8.8 | Yes |
| 18 Jefferson Avenue/Los Alamos Rd | 28.3 | C | 37.7 | D | 29.6 | C | 53.0 | D | 1.3 | 15.3 | No |
| 19 Whitewood Rd/Linnel Ln | 14.5 | B | 15.4 | B | 15.3 | B | 19.6 | B | 0.8 | 4.2 | No |
| 20 Whitewood Rd/Baxter Rd | 25.6 | C | 58.8 | E | 28.4 | C | 65.8 | E | 2.8 | 7.0 | Yes |
| 21 Warm Springs Pkwy/Linnel Ln | 16.9 | B | 29.0 | C | 23.6 | C | 75.5 | E | 6.7 | 46.5 | Yes |
| 22 Briggs Rd/Keller Rd | 17.3 | B | 19.9 | B | 23.1 | C | 25.3 | C | 5.8 | 5.4 | No |
| 23 Winchester Rd (SR-79)/Clinton Keith Rd | 93.5 | F | 101.9 | F | 104.6 | F | 155.3 | F | 11.1 | 53.4 | Yes |

Notes: LOS = Level of Service.



ROADWAY SEGMENTS

Table 4.2-11 summarizes the future year 2035 with project V/C ratios and LOS at the roadway segments, assuming lane configurations consistent with the adopted Circulation Element as well as the maximum daily roadway capacity values per the adopted Circulation Element. With the exception of the downgraded roadway classifications described above, the LOS analysis utilizes the same roadway lane configurations used in the “without project” scenario. Exhibit 4.2-6 (Figure 7-3 in the TIA) shows the LOS, based on V/C ratio, at the roadway segments. As shown in Table 4.2-11, traffic related to the proposed Project’s land use modifications are forecast to result in significant traffic impacts, based on the significant criteria, at the following seven (7) roadways in future year 2035 with project conditions:

- Clinton Keith Road east of California Oaks Road
- California Oaks Road south of Clinton Keith Road
- Jefferson Avenue south of California Oaks Road
- Los Alamos Road between Monroe Avenue and Hancock Avenue
- Murrieta Hot Springs Road between I-15 and I-215
- Murrieta Hot Springs Road between Alta Murrieta Drive and Whitewood Road
- Murrieta Hot Springs Road between Whitewood Road and Margarita Road



Table 4.2-11: Future Year 2035 With Project Daily Roadway Segment Level of Service

| | Segment | Lane Configuration | Capacity (vehicles/day) | 2035 With Project ADT | Volume to Capacity Ratio (V/C) | LOS |
|----|--|--------------------|-------------------------|-----------------------|--------------------------------|-----|
| 1 | Scott Rd east of Menifee Rd | 6D | 53,900 | 9,040 | 0.17 | A |
| 2 | Scott Rd between Leon Rd and Winchester Rd (SR-79) | 6D | 53,900 | 8,120 | 0.15 | A |
| 3 | Keller Rd between I-215 and Whitewood Rd | 6D | 53,900 | 15,460 | 0.29 | A |
| 4 | Keller Rd east of Whitewood Rd | 4D | 25,900 | 11,660 | 0.45 | A |
| 5 | Baxter Rd between Antelope Rd and Whitewood Rd | 4D | 25,900 | 16,040 | 0.62 | B |
| 6 | Warm Springs Pkwy between Baxter Rd and Clinton Keith Rd | 4D | 34,100 | 11,020 | 0.32 | A |
| 7 | Whitewood Rd between Baxter Rd and Clinton Keith Rd | 4D | 34,100 | 12,980 | 0.38 | A |
| 8 | Clinton Keith Rd west of Nutmeg St | 6D | 53,900 | 27,410 | 0.51 | A |
| 9 | Clinton Keith Rd east of California Oaks Rd | 6D | 53,900 | 57,630 | 1.07 | F |
| 10 | Clinton Keith Rd between I-215 and Whitewood Rd | 6D | 53,900 | 27,400 | 0.51 | A |
| 11 | Clinton Keith Rd east of Whitewood Rd | 6D | 53,900 | 30,930 | 0.57 | A |
| 12 | California Oaks Rd south of Clinton Keith Rd | 4D | 34,100 | 31,470 | 0.92 | E |
| 13 | California Oaks Rd south of I-15 | 6D | 53,900 | 31,640 | 0.59 | A |
| 14 | Jefferson Ave south of California Oaks Rd | 6D | 53,900 | 55,800 | 1.04 | F |
| 15 | Los Alamos Rd between I-215 and Whitewood Rd | 6D | 53,900 | 31,690 | 0.59 | A |
| 16 | Los Alamos Rd between Monroe Ave and Hancock Ave | 4D | 34,100 | 40,320 | 1.18 | F |
| 17 | Whitewood Rd north of Murrieta Hot Springs Rd | 4D | 34,100 | 11,330 | 0.33 | A |
| 18 | Jefferson Ave south of Murrieta Hot Springs Rd | 6D | 53,900 | 44,210 | 0.82 | D |
| 19 | Murrieta Hot Springs Rd between I-15 and I-215 | 8D | 71,800 | 79,600 | 1.11 | F |
| 20 | Murrieta Hot Springs Rd between Alta Murrieta Dr and Whitewood Rd | 6D | 53,900 | 58,620 | 1.09 | F |
| 21 | Murrieta Hot Springs Rd between Whitewood Rd and Margarita Rd | 6D | 53,900 | 58,330 | 1.08 | F |
| 22 | Murrieta Hot Springs Rd between Margarita Rd and Winchester Rd (SR-79) | 6D | 53,900 | 42,440 | 0.79 | C |

Notes:

ADT volume in 2035 is rounded to the nearest 10 vehicles.

LOS = Level of Service.



Recommended Improvements:

Intersections:

Based on the results of the traffic impact analysis, several intersections are forecast to be impacted by the land use modifications from the Focused GPU proposed Project. In order to potentially alleviate the significant impacts, the following improvements are recommended in the City:

- **1. Jefferson Avenue/Murrieta Hot Springs Road** – At the westbound Murrieta Hot Springs Road approach, add a second left-turn lane. Modify the traffic signal phasing to include a northbound right-turn overlap phase.
- **2. Madison Avenue/Murrieta Hot Springs Road** – Widen the eastbound Murrieta Hot Springs Road approach to include a dedicated right-turn lane. Modify the traffic signal phasing to include a westbound right-turn overlap phase.
- **4. Winchester Road (SR-79)/Scott Road** – Modify the traffic signal phasing to include a westbound right-turn overlap phase.
- **6. Warm Springs Parkway/Baxter Road** – Widen the eastbound Baxter Road approach to include a dedicated right-turn lane and modify the traffic signal phasing to include an eastbound right-turn overlap phase.
- **7. California Oaks Road/Clinton Keith Road** - At the westbound Clinton Keith Road approach, add a second left-turn lane.
- **8. Jefferson Avenue/Kalmia Street** - At the southbound Jefferson Avenue approach, add a second left-turn lane. Widen the eastbound Kalmia Street approach to include a dedicated right-turn lane. Modify the traffic signal phasing to include protected plus permitted phasing at the Kalmia Street eastbound and westbound approaches.
- **9. Winchester Road (SR-79)/Murrieta Hot Springs Road** – No feasible improvements identified, significant unavoidable impact.
- **10. Hancock Avenue/Los Alamos Road** – No feasible improvements identified, significant unavoidable impact.
- **12. Whitewood Road/Murrieta Hot Springs Road** – Widen the westbound Murrieta Hot Springs Road approach to include a dedicated right-turn lane and modify the traffic signal phasing to include a westbound right-turn overlap phase.
- **13. Nutmeg Street/Clinton Keith Road** - At the westbound Clinton Keith Road approach, add a second left-turn lane. Convert the second northbound Nutmeg Street through lane to a dedicated right-turn lane (same configuration as existing conditions) and modify the traffic signal phasing to include a northbound right-turn overlap phase.



- **15. Mitchell Road/Clinton Keith Road** – Modify the traffic signal phasing to include protected plus permitted phasing at the Clinton Keith Road eastbound and westbound approaches.
- **16. I-215 Northbound Ramps/Clinton Keith Road** – At the northbound I-215 Off-ramp approach, add a dedicated left-turn lane, resulting in the approach lane configuration of one left-turn lane, one shared left-turn/right-turn lane, and one right-turn lane.
- **17. Whitewood Road/Clinton Keith Road** – No feasible improvements identified, significant unavoidable impact.
- **20. Whitewood Road/Baxter Road** - Modify the traffic signal phasing to include a southbound right-turn overlap phase.
- **21. Warm Springs Parkway/Linnel Lane** - Modify the traffic signal phasing to include a southbound right-turn overlap phase.
- **23. Winchester Road (SR-79)/Clinton Keith Road** - Modify the traffic signal phasing to include an eastbound right-turn overlap phase.

Exhibit 4.2-7 (Figure 8-1 in the TIA) shows the potential lane configuration or signal phasing improvements as described.

Table 4.2-12 summarizes the future year 2035 with project peak hour LOS at the study intersections with implementation of the potential improvements. As shown in Table 4.2-12, with the potential improvements, traffic operations at most of the intersections are forecast to improve to either acceptable conditions (LOS D or better) or to a level considered less than significant (below “without project” levels). However, at the following intersections, feasible improvements were not identified, or feasible improvement measures did not result in improved delays to below “without project” levels:

- Jefferson Avenue/Kalmia Street;
- Winchester Road (SR-79)/Murrieta Hot Springs Road;
- Hancock Avenue/Los Alamos Road;
- Whitewood Road/Murrieta Hot Springs Road; and
- Whitewood Road/Clinton Keith Road.



Table 4.2-12: Future Year 2035 With Project With Potential Improvements Intersection Peak Hour Level of Service

| Intersection | | Future Year 2035 Without Project | | | | Future Year 2035 With Project With Potential Improvements | | | | Change in AM Delay (sec) | Change in PM Delay (sec) | Significant Impact? |
|--------------|---|----------------------------------|-----|--------------|-----|---|-----|--------------|-----|--------------------------|--------------------------|---------------------|
| | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | | | |
| | | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | | | |
| 1 | Jefferson Ave/Murrieta Hot Springs Rd | 97.6 | F | 126.5 | F | 66.7 | E | 111.4 | F | -30.9 | -15.1 | No |
| 2 | Madison Ave/Murrieta Hot Springs Rd | 46.9 | D | 99.2 | F | 53.6 | D | 91.7 | F | 6.7 | -7.5 | No |
| 4 | Winchester Rd (SR-79)/Scott Rd | 50.3 | D | 156.1 | F | 46.4 | D | 103.5 | F | -3.9 | -52.6 | No |
| 6 | Warm Springs Pkwy/Baxter Rd | 67.1 | E | 52.7 | D | 60.3 | E | 53.0 | D | -6.8 | 0.3 | No |
| 7 | California Oaks Rd/Clinton Keith Rd | 44.5 | D | 63.7 | E | 38.0 | D | 37.1 | D | -6.5 | -26.6 | No |
| 8 | Jefferson Ave/Kalmia St | 58.7 | E | 50.3 | D | 87.0 | F | 56.4 | E | 28.3 | 6.1 | Yes |
| 9 | Winchester Rd (SR-79)/Murrieta Hot Springs Rd | No feasible Improvements | | | | | | | | | | Yes |
| 10 | Hancock Ave/Los Alamos Rd | No feasible Improvements | | | | | | | | | | Yes |
| 12 | Whitewood Rd/Murrieta Hot Springs Rd | 96.1 | F | 143.9 | F | 111.4 | F | 136.2 | F | 15.3 | -7.7 | Yes |
| 13 | Nutmeg St/Clinton Keith Rd | 30.7 | C | 32.2 | C | 37.9 | D | 32.6 | C | 7.2 | 0.4 | No |
| 15 | Mitchell Rd/Clinton Keith Rd | 34.9 | C | 34.7 | C | 54.2 | D | 52.9 | D | 19.3 | 18.2 | No |
| 16 | I-215 NB Ramps/Clinton Keith Rd | 35.1 | D | 36.6 | D | 30.3 | C | 25.6 | C | -4.8 | -11.0 | No |
| 17 | Whitewood Rd/Clinton Keith Rd | No feasible Improvements | | | | | | | | | | Yes |
| 20 | Whitewood Rd/Baxter Rd | 25.6 | C | 58.8 | E | 21.7 | C | 54.2 | D | -3.9 | -4.6 | No |
| 21 | Warm Springs Pkwy/Linnel Ln | 16.9 | B | 29.0 | C | 21.3 | C | 29.5 | C | 4.4 | 0.5 | No |
| 23 | Winchester Rd (SR-79)/Clinton Keith Rd | 93.5 | F | 101.9 | F | 38.5 | D | 35.8 | D | -55.0 | -66.1 | No |

Notes: LOS = Level of Service.

Roadway Segments:

Based on the results of the traffic impact analysis, 7 segments are forecast to be impacted as a result of the proposed Project’s land use modifications. Potential improvements to roadway segment operations are limited to roadway widening to increase capacity (as opposed to intersection improvements that include less impactful measures such as signal phasing modifications). Thus, roadway segment improvements are not considered to be feasible.

Impact Conclusions:

Intersections:

With the potential improvements, traffic operations at most of the intersections are forecast to improve to either acceptable conditions (LOS D or better) or to a level considered less substantial (below “without project” levels). However, at the following intersections, feasible improvements were not identified, or improvement measures did not result in improved delays to below “without project” levels. Therefore, even with installation of the recommended



improvements, implementation of the proposed Project would result in unavoidable traffic impacts at the following intersections:

- Jefferson Avenue/Kalmia Street
- Winchester Road (SR-79)/Murrieta Hot Springs Road
- Hancock Avenue/Los Alamos Road
- Whitewood Road/Murrieta Hot Springs Road
- Whitewood Road/Clinton Keith Road

Roadway Segments:

As discussed above, based on the results of the traffic impact analysis, seven (7) segments are forecast to be impacted as a result of the proposed Project's land use modifications. Potential improvements to roadway segment operations are limited to roadway widening to increase capacity (as opposed to intersection improvements that include less impactful measures such as signal phasing modifications). Thus, roadway segment improvements are not considered to be feasible. Therefore, implementation of the proposed Project would result in diminished levels of service at the following roadway segments:

- Clinton Keith Road east of California Oaks Road
- California Oaks Road south of Clinton Keith Road
- Jefferson Avenue south of California Oaks Road;
- Los Alamos Road between Monroe Avenue and Hancock Avenue
- Murrieta Hot Springs Road between I-15 and I-215
- Murrieta Hot Springs Road between Alta Murrieta Drive and Whitewood Road
- Murrieta Hot Springs Road between Whitewood Road and Margarita Road

- **IMPLEMENTATION OF THE PROPOSED PROJECT COULD INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE OR INCOMPATIBLE USES.**

Level of Significance Before Mitigation: Less Than Significant Impact.

Impact Analysis: The 2011 Certified EIR (Section 4.7 Traffic and Circulation) determined that future development pursuant to the 2011 General Plan would not result in inadequate design features or incompatible uses. Through the City's development review process, future developments would be evaluated to determine the appropriate land use permit for authorizing their use and the conditions for their establishment and operation. Additionally, future development projects would be evaluated on a case-by-case basis to ensure that adequate access and circulation to and within the development would be provided. Access to development sites would be required to comply with all City design standards and would be reviewed by the City and the Murrieta Fire & Rescue (MFR) to ensure that inadequate design features or incompatible uses do not occur. The City and the MFR would review future development in order to ensure that they are designed to meet adopted standards and provide adequate emergency access. At a minimum, compliance with relevant Code standards would be required. The 2011 Certified EIR determined that implementation of the 2011 General Plan would not substantially increase hazards due to design feature or incompatible uses. A less than significant impact would occur in this regard. The 2011 Certified EIR also determined that



the 2011 General Plan includes goals and policies (CIR-1; CIR-1.1 – CIR-1.14; CIR-2; CIR-2.1 – CIR-2.14; CIR-3; CIR-3.1 – CIR-3.5; CIR-4; CIR-4.1 – CIR-4.3; CIR-5; CIR-5.1 - CIR-5.14; CIR-6; CIR-6.1 – CIR-6.14; CIR-7; CIR-7.1 – CIR-7.8; CIR-8; CIR-8.1 – CIR-8.15; LU-3; LU-3.2; LU-23; LU-23.2; AQ-5; AQ-5.1 – AQ 5.7; N-3; N-3.4; SAF-11; SAF-11.1.) ensure that new development, including infrastructure would not result in incompatible uses, that the street system is designed efficiently to reduce potential impacts to residential neighborhoods, and that potential impacts associated with various transportation modes utilizing the same roadway system would be reduced to less than significant levels.

The proposed Project does not change the potential impacts discussed in the 2011 Certified EIR. Future development pursuant to the proposed Project may result in development of the same land that was analyzed in the 2011 Certified EIR with the same potential impacts. As mentioned above, the City's development review process and 2011 General Plan goals and policies, as well as the revised or new policies of the proposed General Plan 2035 Update (CIR-3.5, CIR-3.6, CIR-6.15 and CIR-7.9) as discussed in Section 3.0 (Project Description) ensure that new development, including infrastructure would not result in incompatible uses, that the street system is designed efficiently to reduce potential impacts to residential neighborhoods, and that potential impacts associated with various transportation modes utilizing the same roadway system would be reduced to less than significant levels. Therefore, no new or substantially greater impacts would occur with implementation of the proposed Project when compared to those identified in the 2011 Certified EIR. Thus, the proposed Project is consistent with the impacts identified in the 2011 Certified EIR and the level of impact (less than significant) remains unchanged from that cited in the 2011 Certified EIR.

Mitigation Measures: Not Applicable.

Level of Significance After Mitigation: Not Applicable.

EMERGENCY ACCESS

- **IMPLEMENTATION OF THE PROPOSED PROJECT COULD RESULT IN INADEQUATE EMERGENCY ACCESS.**

Level of Significance Before Mitigation: Less Than Significant Impact.

Impact Analysis: The 2011 Certified EIR (Section 4.7 Traffic and Circulation) determined that future development projects would be required to comply with the City's development review process including review for compliance with the City's Development Code. New developments associated with implementation of the 2011 General Plan would be required to comply with all applicable fire code and ordinance requirements for construction and access to the site. Individual projects would be reviewed by the MFR to determine the specific fire requirements applicable to the specific development and to ensure compliance with these requirements. This would ensure that new developments would provide adequate emergency access to and from the site. Further, the City and the MFR would review any modifications to existing roadways to ensure that adequate emergency access or emergency response would be maintained. Additionally, emergency response and evacuation procedures would be coordinated through the



City in coordination with the police and fire departments, resulting in less than significant impacts.

The proposed Project does not change the potential impacts discussed in the 2011 Certified EIR. Future development pursuant to the proposed Project may result in development of the same land that was analyzed in the 2011 Certified EIR with the same potential impacts to emergency access. The City's development review process and 2011 General Plan goals and policies as well as the revised or new policies of the proposed General Plan 2035 Update (as mentioned above) ensure that new developments would provide adequate emergency access to and from the site. Therefore, no new or substantially greater impacts would occur with implementation of the proposed Project when compared to those identified in the 2011 Certified EIR. Thus, the proposed Project is consistent with the impacts identified in the 2011 Certified EIR and the level of impact (less than significant) remains unchanged from that cited in the 2011 Certified EIR.

Mitigation Measures: Not Applicable

Level of Significance After Mitigation: Not Applicable

CEQA GUIDELINES SECTION 15064.3 (B)

- **IMPLEMENTATION OF THE PROPOSED PROJECT COULD CONFLICT WITH CEQA GUIDELINES SECTION 15064.3 (b).**

Level of Significance Before Mitigation: Less Than Significant Impact.

Impact Analysis: The City of Murrieta has the discretion (per CEQA Guidelines section 15064.3) to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure; in addition, the City of Murrieta may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. For the purposes of this General Plan Update, a decrease in VMT compared to the 2011 General Plan should be presumed to have a less than significant transportation impact.

VRPA Technologies (VRPA) reviewed the VMT results from the transportation model prepared for the proposed Focused Murrieta General Plan Update by Iteris. VRPA concluded that revisions are needed in the calculations in order to obtain accurate VMT results for the 2011 General Plan scenario and the proposed Focused General Plan Update scenario. Although the transportation model was prepared using typical modeling procedures, VRPA concluded that the model was not able to accurately account for the following situations that are important in the VMT analysis:

- In the 2011 General Plan, the model assumes buildout of Office and Research Park and Business Park land uses. In reality, it is doubtful that buildout of these land uses could occur given market conditions. In fact, of the underlying considerations in the General Plan update was the need to better balance employment land use with the market for development of employment-related facilities.



- In the proposed Focused General Plan Update scenario, there are plans for development of an employment-related innovation center and associated residential units that will be oriented toward employees of the innovation center. The transportation model does not have a way to accurately model the transportation characteristics of these units.

VRPA prepared a memo (VRPA Memo GPU/VMT Analysis, August 16, 2019, Appendix G) which provides adjustments to the VMT analysis calculations to account for these two conditions. These adjustments are explained below.

ADJUSTMENT FOR EMPLOYMENT-RELATED LAND USES

Due to the high numbers of residents of southern Riverside County who commute to other counties, each employee added in Murrieta reduces VMT as residents of southern Riverside County who formerly commuted long distances now have the opportunity to be employed closer to where they live. As described above, the 2011 General Plan scenario assumed more employees in Murrieta than would actually occur due to market conditions. The revision to the VMT analysis to account for this change is to calculate the increase in VMT that would occur if fewer employees were located in Murrieta. The first step is to calculate the number of employees assumed in the model that would not actually be located in Murrieta. This value is called “excess employees” in the calculation. The proposed calculation is as follows:

Increase in Daily VMT = Excess Employees x Average Daily Trips per Employee x (Average Trip Length to External County Job Location – Average Trip Length to Murrieta Job Location)

ADJUSTMENT FOR RESIDENTIAL UNITS ORIENTED TOWARD INNOVATION

In the proposed Focused General Plan Update, additional multi-family residential units are proposed to be oriented toward an employment area, the Innovation land use designation. The residential units would be located in close proximity to job opportunities and trips would be expected to be made by walking, bicycling, or short vehicle trips. From the transportation model’s point of view, the residential units oriented toward the Innovation area would be treated as typical residential units in Murrieta with a typical commute distance for a resident commuting to a job in an external County. The proposed VMT adjustment to take this into account would be to determine the increase in VMT that would occur if these residential units were oriented toward a typical employment location. The proposed calculation is as follows:

Increase in Daily VMT = Residential Units Oriented Toward Innovation Center x Average Daily Employment Trips per Unit x (Average Trip Length to External County Job Location – Average Trip Length to Innovation Center)

Table 4.2-13 shows the total daily Citywide VMT for both the 2011 General Plan and the proposed Project. VMT under the proposed Project is less than the 2011 General Plan in each of the analysis years depicted in Table 4.2-13. In addition, the daily 2035 VMT per capita in the 2011 General Plan is 43.2 which is higher than the proposed Project’s daily 2040 VMT per capita of 41.1. The proposed General Plan Update’s VMT is decreasing when compared to the



2011 General Plan. Therefore, the proposed Project has a less than significant transportation impact with respect to VMT.

Table 4.2-13: Total Daily Citywide Vehicle Miles Travelled (VMT)

| Analysis Year | Scena | | |
|---|------------------------------|------------------------------|------------|
| | 2011 General Plan (Existing) | Proposed General Plan Update | Net Change |
| 2016 (Base) | 4,136,700 | 4,132,649 | -4,051 |
| 2020 | 4,442,413 | 4,419,630 | -22,783 |
| 2030 | 5,206,697 | 5,137,080 | -69,617 |
| 2035 (General Plan Update Horizon Year) | 5,588,834 | 5,495,806 | -93,028 |
| 2040 (Regional Transportation Model Horizon Year) | 5,970,980 | 5,854,532 | -116,448 |

Note: VMT totals calculated using origin-destination method

Mitigation Measures: Not Applicable

Level of Significance After Mitigation: Not Applicable

4.2.5 Cumulative Impacts and Mitigation Measures

- **DEVELOPMENT ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED PROJECT AND CUMULATIVE DEVELOPMENT COULD RESULT IN CUMULATIVELY CONSIDERABLE TRAFFIC AND CIRCULATION IMPACTS.**

Level of Significance Before Mitigation: Significant Impact.

Impact Analysis:

As discussed, the traffic forecasting approach involved the development of a focused multi-modal, multi-class travel demand model for the City of Murrieta. This focused model is consistent with the 2016 SCAG RTP/SCS travel demand model assumptions and inputs as well as compatible with the current City of Murrieta Transportation Analysis Zone (TAZ) structure and land use as part of the adopted 2011 General Plan. The base year of 2016 and the forecast year of 2040 were obtained from the 2016 SCAG RTP/SCS travel demand model. The model was developed using the TransCAD software package, the software platform currently used by SCAG for regional modeling. The City's highway network was updated and refined to include all key general plan roadways in the City of Murrieta. The transit network was also



reviewed and found to be a satisfactory representation of transit services. The model is consistent with the traditional four step modeling process, which includes trip generation, trip distribution, mode split, and traffic assignment.

With the potential improvements, traffic operations at most of the intersections are forecast to improve to LOS D or better, or to a level considered less than significant (below “without project” levels). However, at five (5) intersections, feasible improvements were not identified, or feasible improvement measures did not result in improved delays to below “without project” levels. In addition, seven (7) roadway segments are forecast to operate at LOS D, E, or F. Potential improvements to roadway segment operations are limited to roadway widening to increase capacity (as opposed to intersection improvements that include less impactful measures such as signal phasing modifications). Thus, roadway segment improvements are not considered to be feasible. Therefore, buildout of the proposed Project would result in cumulatively considerable traffic and circulation impacts.

Mitigation Measures: No mitigation measures beyond the goals and policies identified in the 2011 and/or proposed Project referenced above are available.

Level of Significance After Mitigation:

Roadway Segments: Significant Unavoidable Impact for the seven (7) roadway segments identified as LOS D, E, or F listed in table 4.2-11 above. Less Than Significant Impact for all other studied roadway segments identified as LOS A, B, or C on table 4.2-11 above.

Intersections: Significant Unavoidable Impacts for the five (5) intersections identified in Table 4.2-10 above. Less Than Significant Impact for all other studied intersections.

4.2.6 Significant Unavoidable Impacts

The proposed Project would result in a significant unavoidable impact for the following areas for both project and cumulative impacts:

Intersections:

Even with installation of the recommended improvements, implementation of the proposed General Plan would result in unavoidable traffic impacts at the following five (5) intersections:

- Jefferson Avenue/Kalmia Street
- Winchester Road (SR-79)/Murrieta Hot Springs Road
- Hancock Avenue/Los Alamos Road
- Whitewood Road/Murrieta Hot Springs Road
- Whitewood Road/Clinton Keith Road

Roadway Segments:

Implementation of the proposed General Plan would result in unavoidable traffic impacts at the following seven (7) roadway segments:

- Clinton Keith Road east of California Oaks Road
- California Oaks Road south of Clinton Keith Road
- Jefferson Avenue south of California Oaks Road



- Los Alamos Road between Monroe Avenue and Hancock Avenue
- Murrieta Hot Springs Road between I-15 and I-215
- Murrieta Hot Springs Road between Alta Murrieta Drive and Whitewood Road
- Murrieta Hot Springs Road between Whitewood Road and Margarita Road

All other traffic and circulation impacts associated with implementation of the proposed Project would be less than significant by adherence to and/or compliance with goals and policies referenced above in section 4.7.4.

4.2.7 Sources Cited

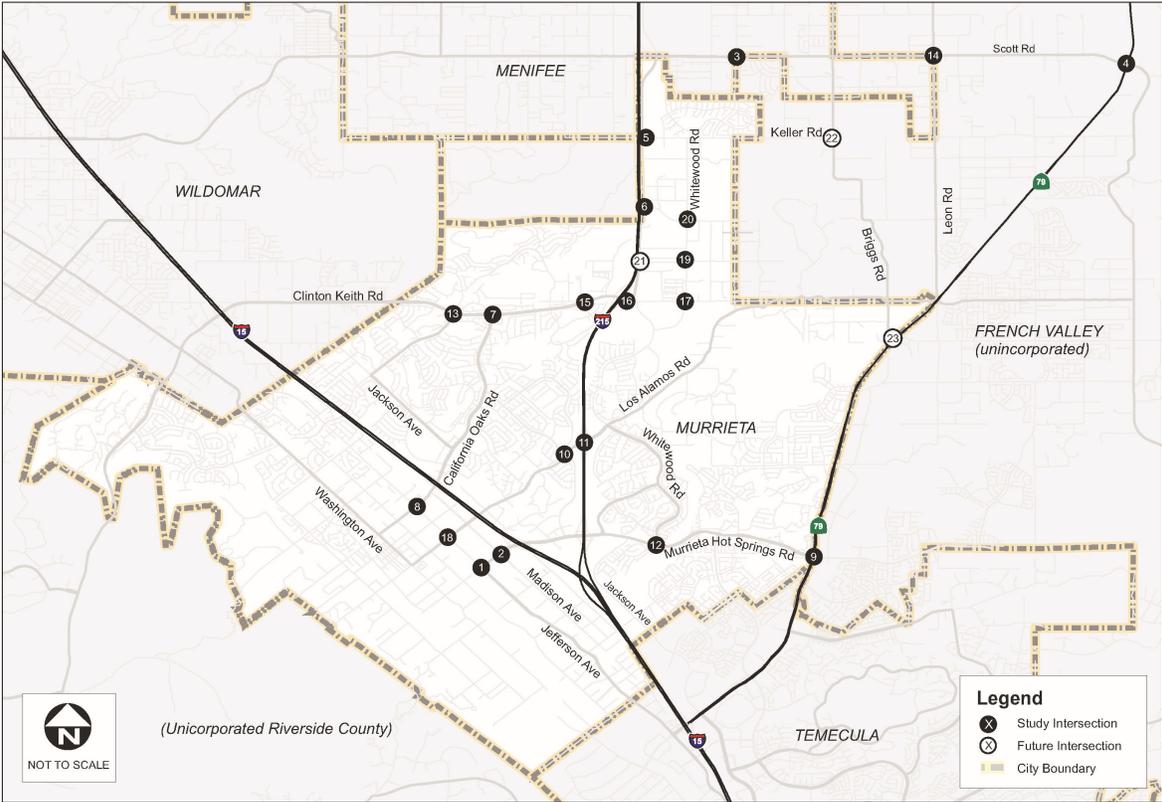
City of Murrieta Final General Plan EIR, 2011.

City of Murrieta General Plan, 2011.

Iteris, Traffic Impact Analysis, August 21, 2019.

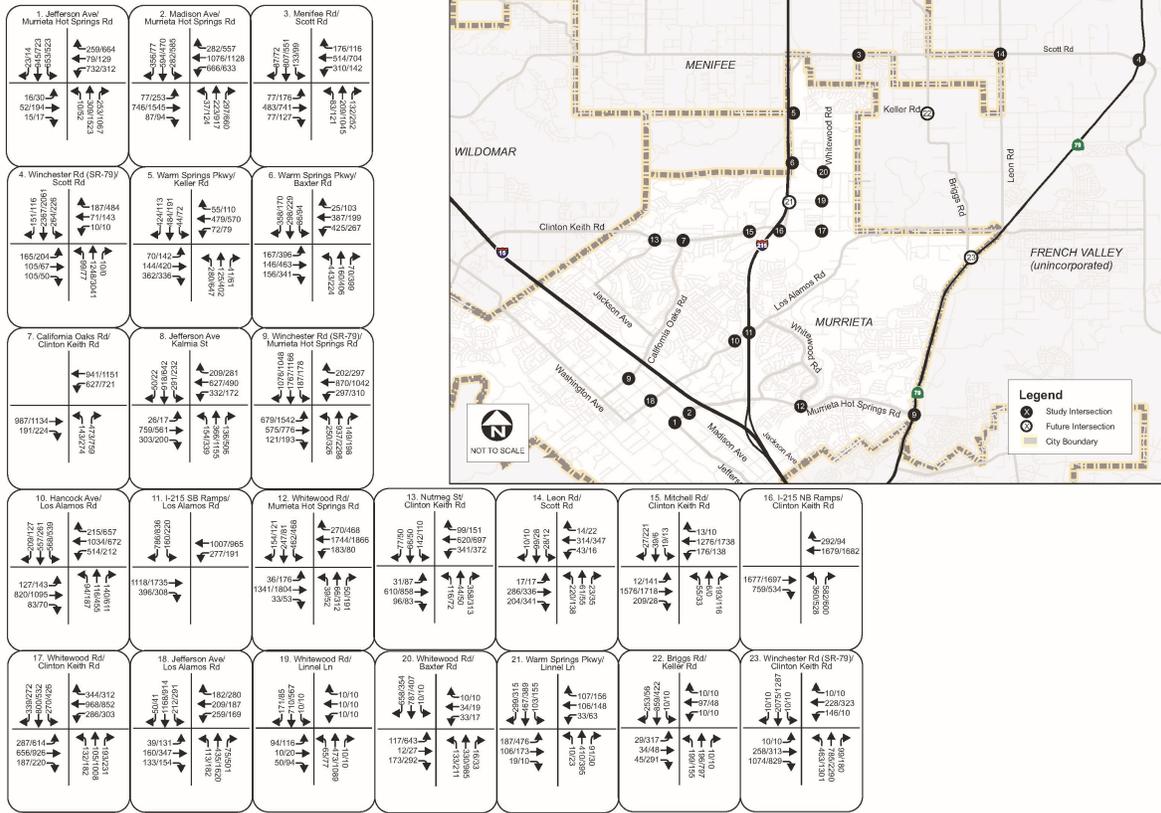
2019 CEQA Statute and Guidelines

VRPA, Memo, Murrieta General Plan Update VMT Analysis, August 16, 2019



iteris City of Murrieta
 Focused General Plan Update
 Traffic Impact Analysis

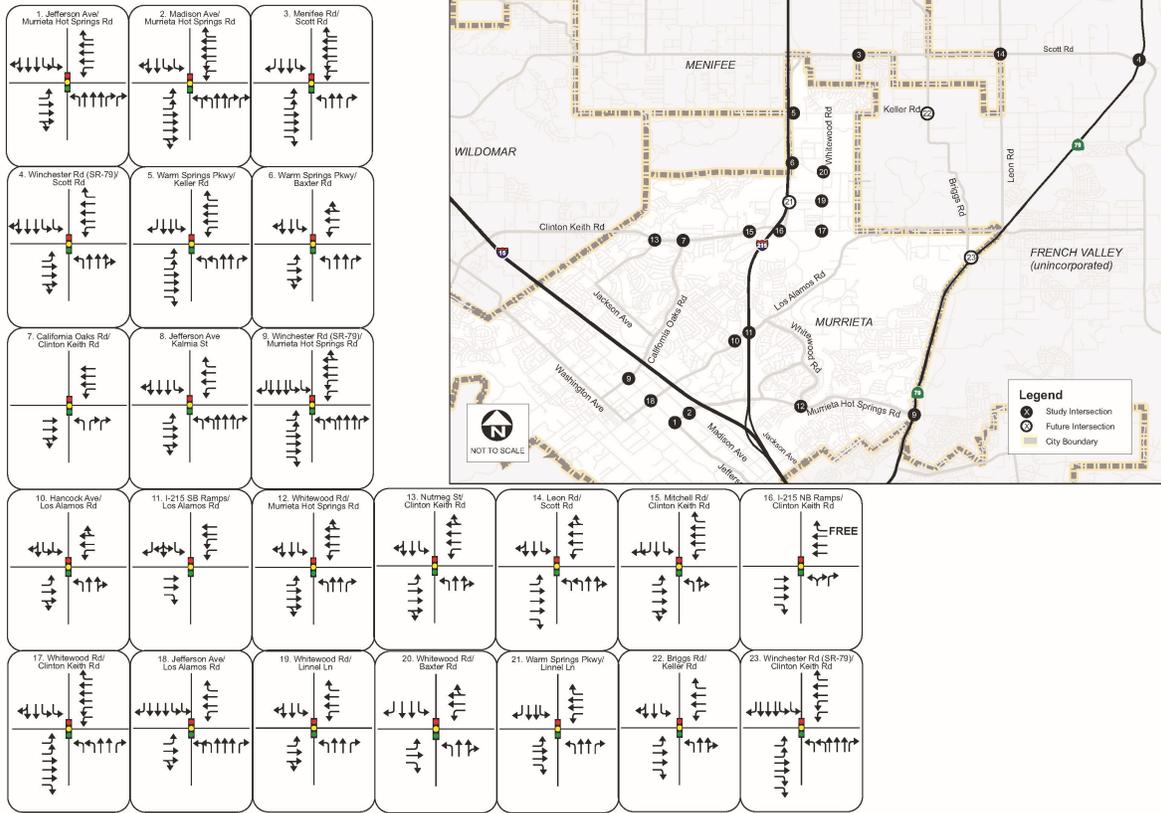
Study Intersections
 Exhibit 4.2-1



City of Murrieta
 Focused General Plan Update
 Traffic Impact Analysis

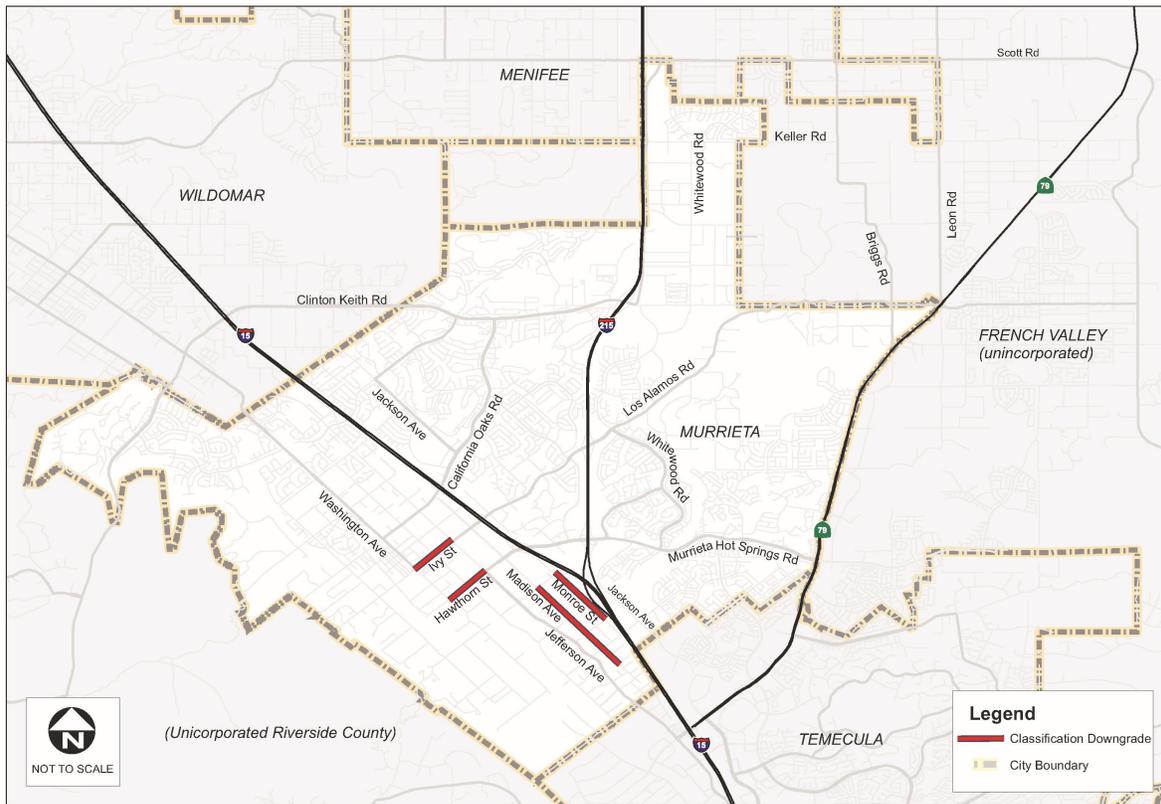
Future Year 2035 Without Project Intersection Volumes

Exhibit 4.2-2



City of Murrieta
 Focused General Plan Update
 Traffic Impact Analysis

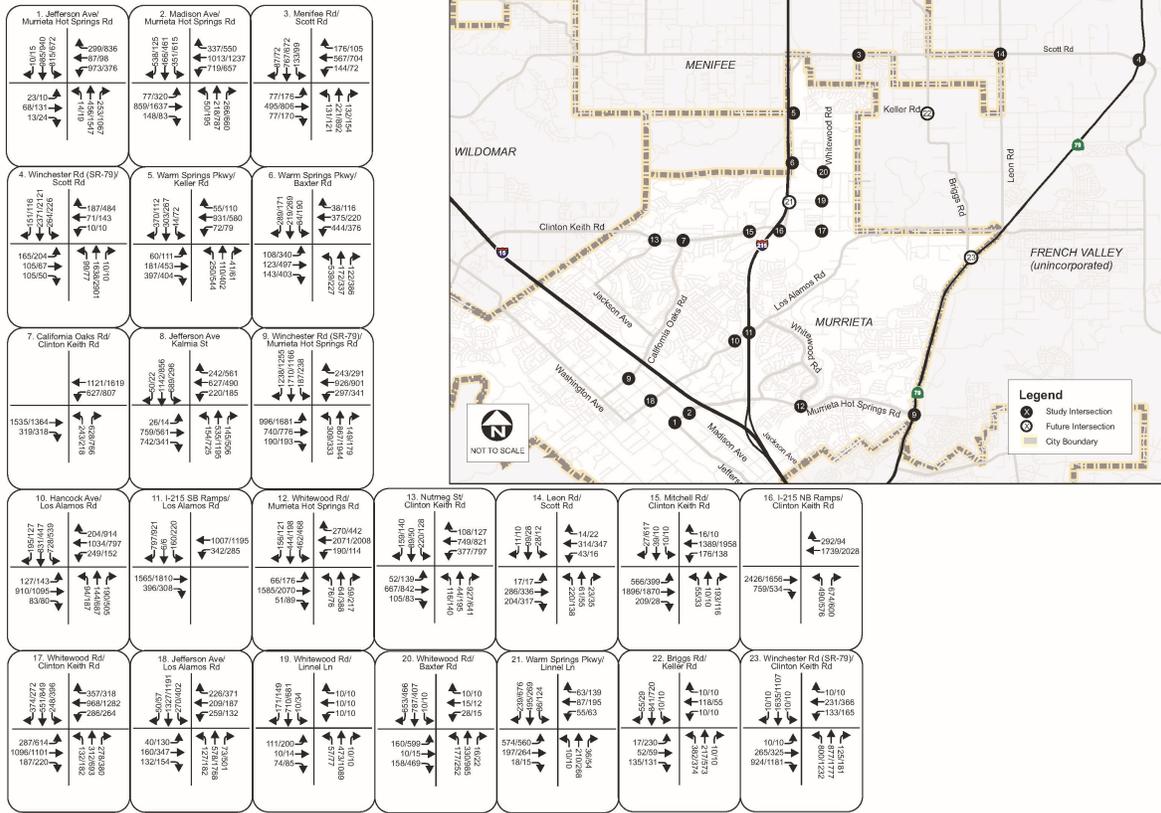
Future Year 2035 Without Project Intersection Lane Configurations
 Exhibit 4.2-3



City of Murrieta
 Focused General Plan Update
 Traffic Impact Analysis

Roadway Classification Downgrade Locations

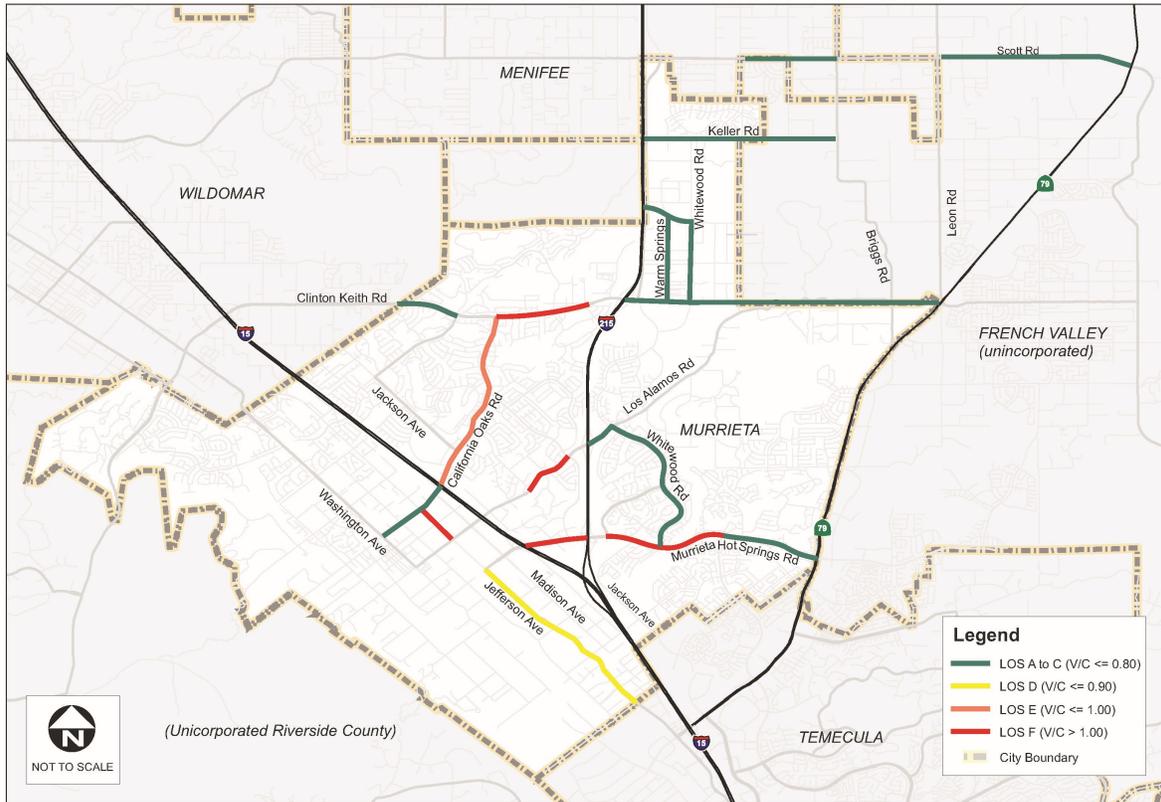
Exhibit 4.2-4



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 Traffic Impact Analysis

Future Year 2035 With Project Intersection Volumes

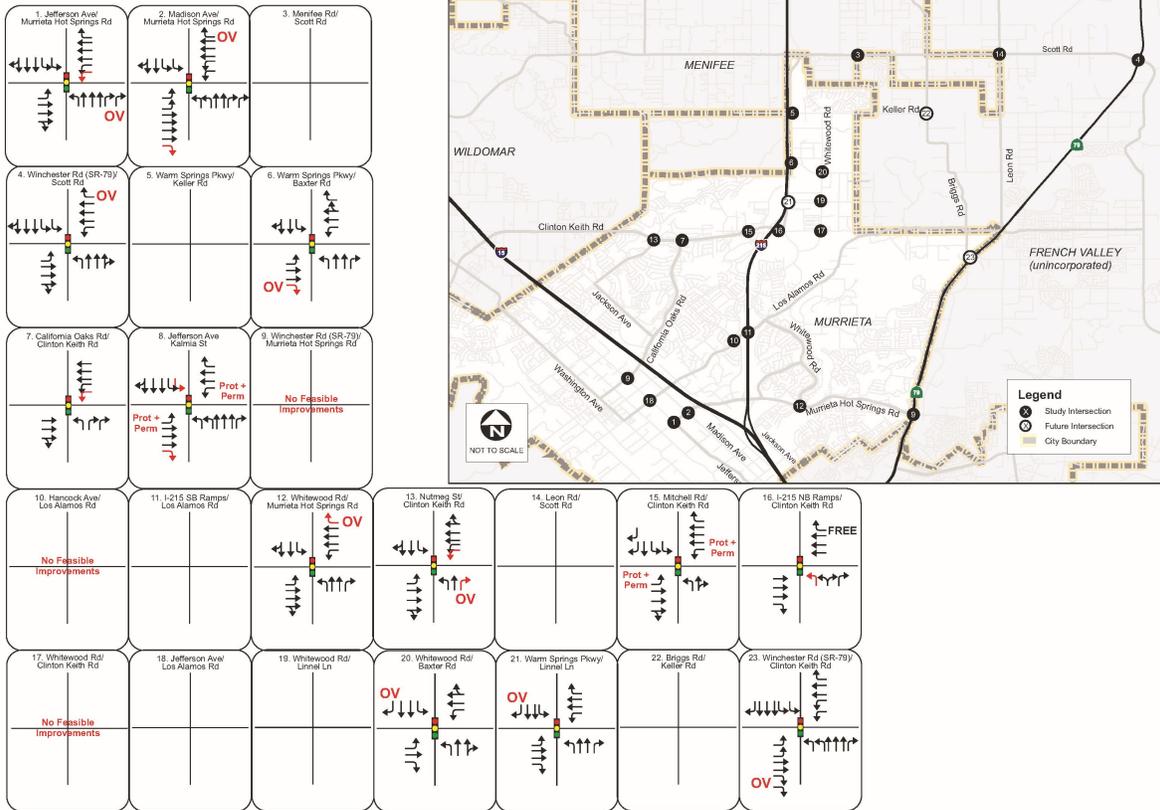
Exhibit 4.2-5



City of Murrieta
Focused General Plan Update
Traffic Impact Analysis

Future Year 2035 With Project Roadway Segment LOS

Exhibit 4.2-6



City of Murrieta
 Focused General Plan Update
 Traffic Impact Analysis

Potential Intersection Improvements
 Exhibit 4.2-7